

MS 102

Accounting for Managers



Volume I

Block I: Introduction to Accounting

Block II: Accounting Process

Block III: Cost Accounting

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SYLLABUS

Course Name: Accounting for Managers

Course Code: MS 102

Course Objective:

To enable student to acquire the skills necessary to use, interpret and analyse accounting data and to make them acquainted with decision making capability for effective financial control in an organisation.

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Concept, Importance and Scope of Accounting

Unit II Accounting Principles

Accounting Principles, Concepts and Conventions

Unit III Forms and Types of Accounting

Forms and Types of Accounting, Users of Accounting Information

Unit IV Double Entry System

Accounting Equation, Rules of Recording Business Transactions

BLOCK II: Accounting Process

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Preparation of Journal and Classification of Journals, Ledger

Unit VI Trial Balance

Preparation of Trial Balance

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Preparation of Profit and Loss Account and Balance Sheet with Adjustment Entries

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Unit IX Standard Costing and Variance Analysis

Unit X Process Costing and Single and Output Costing

Unit XI Activity-based Costing and Service Costing

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Cost-Volume-Profit Analysis

Unit XIV Budgeting

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BLOCK I: Introduction to Accounting

UNIT 1

INTRODUCTION TO ACCOUNTING

Structure:

- 1.1 Introduction
- 1.2 Meaning and Definitions of Accounting
- 1.3 Concept of Accounting
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- 1.5 Functions of Accounting
- 1.6 Is Accounting a Science or an Art or Both?
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Objectives

After reading this unit you will be able to understand:

- Meaning of Accounting
- Concept of Accounting
- Importance of Accounting
- Scope of Accounting

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1.1 INTRODUCTION

Accounting is the systematic and comprehensive recording of financial transactions pertaining to a business, and it also refers to the process of summarizing, analyzing and reporting these transactions to oversight agencies and tax collection entities.

1.2 MEANING AND DEFINITIONS OF ACCOUNTING

Accounting is an art and science of providing meaningful information about financial activities of the company's as a tool for management. This is used by a business for maintaining financial records on cash basis or accrual basis.

Accounting is an important part of information system. It is an important profession. Study of accounting is must for all the people concerned with business, trade and commerce.

According to Encyclopedia Britannica, "Generally, accountancy may be described as being the science by means of which all operations, as far as they are capable of being shown in figures, are accurately recorded and their results ascertained and stated. It is a science by means of which all mercantile and financial transactions, whether in money or money's worth, including operations completed to engagements undertaken to be fulfilled at once or in future, however remote, may be recorded; and this science comprises a knowledge of the methods of preparing statistics, whether relating to finance or to any transactions or circumstances which can be stated by numeration, and of ascertaining and estimating on correct basis, is the cost of any operation whether in money, in commodities, in time, in life or in any wasting property".

In order to achieve the above purposes it is necessary to record business transactions according to a specified system. In a practical manner we call this system as "Accounting". The process of identifying, recording, classifying and presenting the information relating to the business is called Accounting.

Definitions

The American Institute of Certified Public Accounts (AICPA) has defined accounting as, "The art of recording, classifying and summarizing, in a significant manner and in terms of money, transactions and events which are, in part at least, of financial character and interpreting the results thereof".

According to the *American Accounting Association*, (AAA) "Accounting is the process of identifying, measuring and communicating economic information to permit informed judgments and decisions by users of the information".

Smith and Ashburne defines accounting as, “the science of recording and classifying business transactions and events, primarily of financial character, and the art of making significant summaries, analysis and interpretations of those transactions and events and communicating the results to persons who must make decisions or form judgements”.

According to **R.N. Anthony**, “Nearly every business enterprise has accounting system. It is a means of collection, summarizing, analyzing and reporting in monetary terms, informations about business rested to make decisions or form judgements.”

1.3 CONCEPT OF ACCOUNTING

The main goal of every business organization is to make profits. Further, every business concern must know its financial position i.e., assets, liability and its own investment in the business (i.e., its own capital) making profit by a business firm through different types of business transaction such as, goods purchase, goods sales, payment of expenses, receipt of income, taken loan, give interest etc., Similarly, assets are held and liability are incurred by a business firm through purchase of plant and machinery by cash, borrowing loan. Here, the business man wants to know what is the financial position of their company and the must remember all the transactions of his business firm for the year. But human memory cannot record properly so he need some book where he can systematically recorded the business transaction, whenever he required information about his business he can get this early and firstly. So, accounting was introduced as an aid to human memory. It helps permanent and systematic record of business firm to contains all transaction would help the businessman to know early and readily. He can understand their profit and loss, and financial position of the business.

It also need for planning and decision making to the business firm. In other words it can be used as language to communicate the financial information about a business to a number of parties who are interested in the business, such as share holders, debenture holders, employees, government, customers, consumers, creditors, financial institute, general public, stock exchanges and Bank etc.

1.4 OBJECTIVES OF ACCOUNTING

The main objectives of accounting are –

- (i) To give the meaningful and accurate information about the financial activities of a business.
- (ii) To keep the records in a systematic manner.
- (iii) To measure the Profit or Loss for knowing performance of the business.

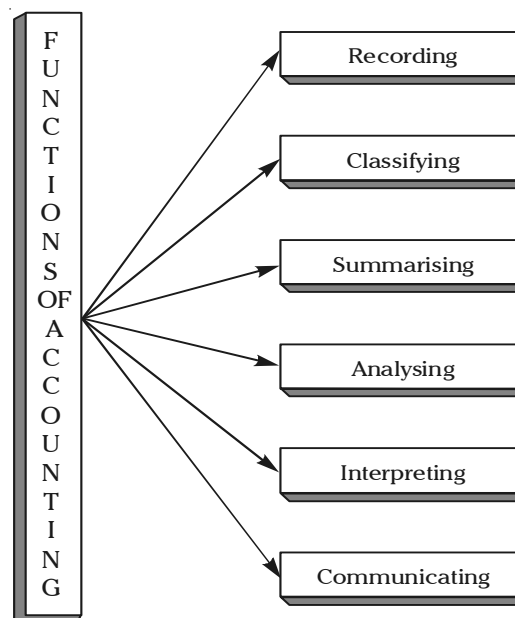
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- (iv) To ascertain the financial position of the business (i.e., show the assets, liabilities and capital)
- (v) To provide the financial information to internal users (office manager, staff) and external users (owners, creditors etc.)

1.5 FUNCTIONS OF ACCOUNTING

The following functions of Accounting:

(i) Recording: Recording is the basic function of financial accounting. It is essentially concerned with not only ensuring that all but also business transactions of financial character. It may be further sub-divided into cash journal, purchases journal, sales journal.



(ii) Classifying: It is concerned with the systematic analysis of the recorded data. Classification is done in the book of “Ledger”. This book contains on different pages individual account heads under which all financial transactions of similar nature are collected. It may have separate account heads for traveling expenses, printing and stationary, advertising etc.

(iii) Summarising: Summarising involves presenting the classified data in a manner which is understandable and useful to the internal as well as external end users of accounting statements. Trial Balance, Income statement and Balance Sheet are prepared with the help of this process.

(iv) Analysing: All the recorded financial data are analysed for making a meaningful judgment about the financial condition and profitability of the business operations. Its purpose is to identify the financial weakness and strengths. It is also concerned with the establishment of relationship between the various items taken from income statement.

(v) Interpreting: After analysis is concerned with significance of the relationship and establishment, the accountant interpret the statement in a useful way to the user. He is also explained what has happened? Why it is happened? What is likely to happen under present conditions?

(vi) Communicating: This is final function of accounting. It includes the usual income statement and the balance sheet, additional information in the form of accounting ratios, graphs, diagrams, funds flow statement etc. In this step accountant getting the help of innovation, imagination and initiative for future.

1.6 IS ACCOUNTING A SCIENCE OR AN ART OR BOTH?

Accounting is not only science but also an art. Any organized knowledge based on certain basic principles is a 'Science'. It is an organized knowledge based on scientific principles, which have been developed as result of study and experience. Accounting cannot be termed as a "perfect science" like physics and chemistry where experiments can be carried and perfect conclusions can be drawn.

It is a social science depending much on human behaviour and other social and economic factors. It establishes relationship of cause and effect about any occurrence or happening. Scientific knowledge is based on observation, experiments and testing of facts.

Accounting is a science because recording, classifying and summarizing of business transactions is done on the basis of certain principles such as principles of double entry system, which are universally applicable.

Art is the technique, which helps us in achieving our desired objectives. It helps in achieving our desired objective of maintaining proper accounts i.e., to know the profitability and the financial position of the business, by maintaining proper accounts.

Accounting is based on certain concepts and conventions and is subject to some limitations. It is influenced by bias and personal judgment of the accountant. Since accounting has to be applied in different organizations and varied situations, it has not been possible to develop principles, which have universal applicability. From the above explanations, it is clear that accounting is both a science as well as an art.

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1.7 MEANING AND DEFINITIONS OF BOOK-KEEPING

Book-keeping is a process of accounting. It is concerned with recording transactions in the books of accounts. That is writing journal entries, entering the same into ledger accounts, balancing the ledger accounts, preparing the trial balance and preparing the final accounts. Accounting is a broader term. It includes not only recording the transactions in the books of accounting but also their interpretation.

Book-keeping is the art and science of recording, classifying and summarizing business transactions in money or money's worth accurately and systematically so that the businessman may be able to know his/her their profit or loss during a specified period and also his/her their financial position on a particular date. In other words Book-keeping is the science and art of correctly recording in books of accounts all those transactions that result in the transfer of money or money's worth.

Definitions

According to **J.R. Batliboi**, "Book-keeping may be defined as the science as well as the art of recording business transactions under appropriate accounts".

"Book-keeping is the science of recording transactions in money or money's worth in such a manner that, at any subsequent date, their nature and effect may be clearly understood and, when required, a combined statement of their result may be prepared".
– **L.C. Cropper**

"Book-keeping is the recording of the financial transactions of a business in a methodical manner so that information on any point in relation to them may be quickly obtained".
– **A.J. Farell**

In the words of **A.H. Rosenkampff**, "Book-keeping is the art of recording business transactions in a systematic manner".

1.8 ADVANTAGES AND DISADVANTAGES OF BOOK-KEEPING

Advantages of Book-Keeping

The advantages are as follows.

- (i) It is a permanent record for the present and future references.
- (ii) As it is a complete record, the business concern maintains information about its expenses and losses at the end of the year.

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- (iii) When a business concern keeps book-keeping records, it has a complete records of what it owns (i.e., its assets), what it owes (i.e., its liabilities) so it can know financial position at the end of the year.
- (iv) A Book-keeping system will simplify auditing and final accounts preparation.
- (v) It is easy to compare the results of its business from year to year and ascertain the progress.
- (vi) Book-keeping records enable a business concern to over come from fraud and cash embezzlement.
- (vii) Transactions recorded in books of account act as evidence to the business concerns for both creditors and debtors.
- (viii) Book-keeping will help to find out the liability from time to time based on their production and sales.

Disadvantages of Book-Keeping

Book-keeping suffers from certain disadvantages, they are as follows:

- (i) Book-keeping is of monetary concept. That means, only monetary (i.e., Transactions which can be measured in terms of money worth) transactions will be entered in books of accounts.
- (ii) Some times Accountants enter the approximate information about transactions. This value depends on personal judgement, so we cannot ascertain accurate figures from books of accounts.
- (iii) Final accounts do not provide timely information of business position. Since, final account are prepared only at the end of financial year.
- (iv) It is time consuming. It consumes more time for entering each and every transaction.

1.9 ACCOUNTING BRANCHES

The different Accounting Branches are as follows:



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Financial Accounting: The main purpose of the Financial accounting is to ascertain profit or loss during a specific period, to show financial position of the business on a particular position of the business on a particular date and to have control over the firms property. Such accounting records are used to impart useful information to outsiders and to meet the legal requirements.

According to the **American Accounting Association**, (AAA) “Accounting is the process of identifying, measuring and communicating economic information to permit informed judgments and decisions by users of the information”.

Cost Accounting: Terminology of cost accounting defines cost as the “The amount of expenditure, actual or notional, incurred on or attributable, to a given thing.” Costing as the technique and process of ascertaining cost. Cost accounting is “The process of accounting for cost from the point at which expenditure is incurred or committed to the business concern of its ultimate relationship with cost centers and cost units”.

According to **H.J. Wheldown**, cost accounting is “The classifying, recording and appropriate allocation of expenditures for the determination of the costs of products or services, the relation of those costs to sales values, and ascertainment of profitability”.

Management Accounting: Management Accounting is that branch of accounting which provides information to the management according to its needs. It is most concerned with information which helps it in basic functions of planning, organizing and control.

According to **Charles T. Homgren**, “Management Accounting is the process of identification, measurement, accumulation, analysis, preparation, interpretation and communication of information that assists executives in fulfilling business concern objectives”.

1.10 IMPORTANCE OF ACCOUNTING

Importance of Accounting can be summarized as follows:

- 1. Assistance to management:** Accounting provides information to the management to enable it to do its work properly. Such information helps in the Planning, Decision making and controlling.
- 2. Comparative study:** A systematic record enables a business to compare one year's results with those of other years and locate significant factors leading to the change, if any.
- 3. Evidence in the court:** Systematic record of transactions is often treated by the courts as good evidence.

4. Creating historic financial documentation: Accounting helps for-profit and not-for-profit organizations maximize the value they create by using historic financial documentation to report and project the health of an organization. However, these reports and projections can often overlook non-monetary contributions to performance, resulting in decisions based on misleading or incomplete information.

5. Analysis Tool: Accounting reports can be analyzed to provide management with financial information that can be used to run a business, plan ahead and to make changes when business is not going as expected.

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1.11 SCOPE OF ACCOUNTING

Accounting has got a very wide scope and area of application. Its use is not confined to the business world alone, but spread over in all the spheres of the society and in all professions. Now-a-days, in any social institution or professional activity, whether that is profit earning or not, financial transactions must take place. So there arises the need for recording and summarizing these transactions when they occur and the necessity of finding out the net result of the same after the expiry of a certain fixed period. The need for interpretation and communication of that information are to the appropriate persons. Only accounting use can help overcome these problems.

In the modern world, accounting system is practiced not only in all the business institutions but also in many non-trading institutions like Schools, Colleges, Hospitals, Charitable Trust Clubs, Co-operative Society etc. and also Government and Local Self-Government in the form of Municipality, Panchayat. The professional persons like Medical practitioners, practicing Lawyers, Chartered Accountants etc. also adopt some suitable types of accounting methods. As a matter of fact, accounting methods are used by all who are involved in a series of financial transactions.

The scope of accounting as it was in earlier days has undergone lots of changes in recent times. As accounting is a dynamic subject, its scope and area of operation have been always increasing keeping pace with the changes in socio-economic changes. As a result of continuous research in this field the new areas of application of accounting principles and policies are emerged. National accounting, human resources accounting and social Accounting are examples of the new areas of application of accounting systems.

1.12 SUMMARY

Accounting is the language of business. The main objectives of Accounting are to safeguard the interests of the business, its proprietors and others connected with the business transactions. This is done by providing suitable information to the

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owners, creditors, shareholders, Government, financial institutions and other related agencies.

According to AICPA (American Institute of Certified Public Accountants) it is defined as “the art of recording, classifying and summarizing in a significant manner and in terms of money, transactions and events which are in part at least of a financial character and interpreting the result thereof. Recording is all the transactions in subsidiary books for purpose of future record or reference. Classifying is all recorded transactions in subsidiary books are classified and posted to the main book of accounts. It is known as “Ledger.” Summarizing: All recorded transactions in main books will be summarized for the preparation of Trial balance.

Interpreting: Interpreting refers to the explanation of the meaning and significance of the result of final accounts and balance sheet so that parties concerned with business can determine the future earnings, ability to pay interest, liquidity and profitability of a sound dividend policy.

Book-keeping may be defined as “the art of recording the business transactions in the books of accounts in a systematic manner.” A person who is responsible for and who maintains and keeps a record of the business transactions is known as Book-keeper. His work is primarily clerical in nature.

Financial Accounting is prepared to determine profitability and financial position of a concern for a specific period of time.

Cost Accounting is the formal accounting system setup for recording costs. It is a systematic procedure for determining the unit cost of output produced or service rendered.

Management Accounting is concerned with presentation of accounting information to the management for effective decision making and control.

Cost control is operated through setting standards of targets and comparing actual performance therewith, a view to identify deviations from standards and taking corrective action in order to ensure that future performance confronts to standards or norms. Budgetary control and standard costing are essential tools and techniques of cost control. There are several distinct tool and techniques of cost reduction such as value engineering and work study, standardization, simplification, variety reduction, quality measurement and research, operation research, market research, job evaluation, merit rewards, incentives improvement in design, automation etc.

Product design offers the greatest scope for cost reduction of a permanent nature. The impact of decision made at the beginning stage on costs can be revealed at every stage of manufacture or processing of the product in the factory. The design function therefore offers an extremely important area of cost reduction action.

1.13 GLOSSARY

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- (a) **Accounting:** Accounting provides suitable information to the owners, creditors, shareholders, Government, financial institutions and other related agencies.
- (b) **Interpreting:** Interpreting refers to the explanation of the meaning and significance of the result of final accounts and balance sheet.
- (c) **Book-keeping:** Book-keeping may be defined as the art of recording the business transactions in the books of accounts in a systematic manner.
- (d) **Financial Accounting:** Financial Accounting is prepared to determine profitability and financial position of a concern for a specific period of time.
- (e) **Cost control:** Cost control is operated through setting standards of targets and comparing actual performance.

1.14 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. Give the meaning of Accounting.
2. Define the term Accounting.
3. What is Book Keeping?
4. What is Financial Accounting?

(B) Extended Answer Questions

1. Discuss the concept of Accounting.
2. Explain importance of Accounting.
3. Discuss scope of Accounting.

(C) True or False

1. Accounting provides suitable information to the owners, creditors, shareholders, Government, financial institutions and other related agencies.
2. Recording refers to the explanation of the meaning and significance of the result of final accounts and balance sheet.
3. Book-keeping may be defined as the art of recording the business transactions in the books of accounts in a systematic manner.

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4. Financial Accounting is prepared to determine profitability and financial position of a concern for a specific period of time.
5. Cost control is operated through setting standards of targets and comparing actual performance.

(D) Multiple Choice Questions

1. What provides suitable information to the owners, creditors, shareholders, Government, financial institutions and other related agencies?
 - (a) Management
 - (b) Accounting
 - (c) Production
 - (d) All the above
2. Interpreting refers to the explanation of the meaning and significance of the result of final accounts and.....
 - (a) Balance Sheet
 - (b) Profit and Loss A/C
 - (c) Both a and b
 - (d) None of the above

(E) Fill in the Blanks

1.provides suitable information to the owners, creditors, shareholders, Government, financial institutions and other related agencies.
2.refers to the explanation of the meaning and significance of the result of final accounts and balance sheet.
3. Book-keeping may be defined as the art of recording the business transactions in the books of accounts in a.....
4.is prepared to determine profitability and financial position of a concern for a specific period of time.

1.15 KEY TO CHECK YOUR ANSWER

(C) 1. True, 2. False, 3. True, 4. True, 5. True

(D) 1. (b) 2. (a)

(E) 1. Accounting, 2. Interpreting, 3. Systematic manner, 4. Financial Accounting

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1.18 TERMINAL QUESTIONS

1. How the accounting concept is related to other areas of management activities? Discuss.

UNIT 2

ACCOUNTING PRINCIPLES

Structure:

- 2.1 Introduction
- 2.2 Accounting Principles
- 2.3 Accounting Concepts
- 2.4 Accounting Conventions
- 2.5 Summary
- 2.6 Glossary
- 2.7 Check Your Progress (Multiple Choice/Objective Type Questions)
- 2.8 Key to Check Your Answer
- 2.9 Bibliography
- 2.10 Suggested Readings
- 2.11 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Accounting Principles
- Accounting Concepts
- Accounting Conventions

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2.1 INTRODUCTION

Accounting principles are the body of doctrines commonly associated with the theory and procedure of accounting serving as an explanation of current practices and as a guide for the selection of conventions or procedures where alternatives exists. Rules governing the formation of accounting axioms and the principles derived from them have arisen from common experience, historical precedent statements by individuals and professional bodies and regulations of Governmental agencies.

2.2 ACCOUNTING PRINCIPLES

In the words of **A.W. Johnson** accounting principles are the assumptions and rules of accounting and the applications of these rules, methods and procedures to the actual practice of accounting. The terminology committee of **American Institute of Certified Public Accounts** defines “the term principles as a general law or rule adopted or preferred as a guide to action a settled ground or business of conduct or practice.

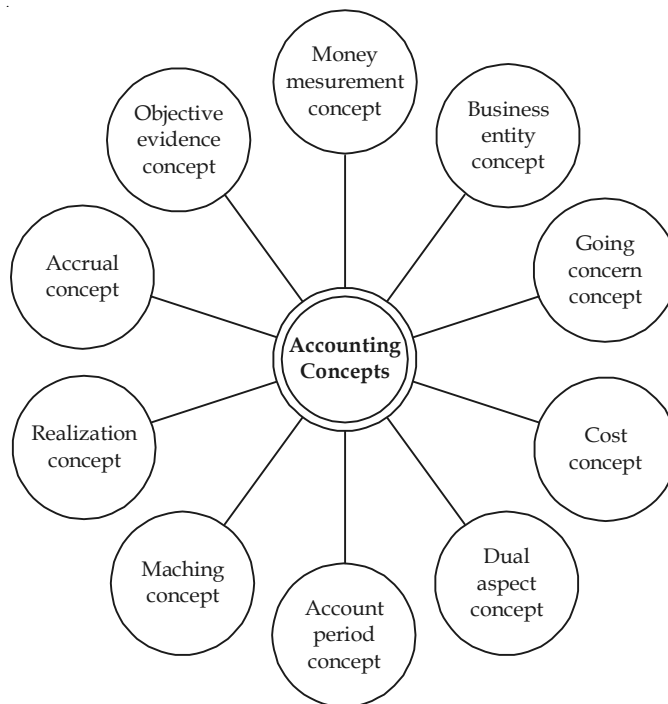
Accounting Principles

Accounting Concepts	Accounting Conventions
Money measurement concept	Convention of Consistency
Business entity concept	Convention of Disclosure
Going concern concept	Convention of Conservation
Cost concept	Convention of Materiality
Dual aspect concept	
Accounting period concept	
Matching concept	
Accrual concept	

2.3 ACCOUNTING CONCEPTS

The term accounting concept refers to assumptions and conditions on which accounting system is based. It denotes the prepositions on which principles are formulated. The principles are formulated on the basis of economic and political environment of the business.

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Money Measurement Concept

While preparing accounts in a business, only those transactions which can be expressed in terms of money alone are recorded other transactions which are not capable of measuring in this concept are not recorded. The money measurement concept helps a concern to express items of diverse nature, such as Bank balance, Machinery, Stock in trade, Furniture and so on in term of common denominator, viz., money and hold them up for the purpose of knowing the total value of assets in a particular period.

Example: A business concern has bank balance ₹ 1,00,000, 1000 tons of stock in trade, 2 type writers, 4 machines, and 2 buildings in the absence of a common denominator, viz., money, these diverse items cannot be added upto give any meaningful figure. But it can be expressed in term of money as bank balance ₹1,00,000, stock in trade ₹ 50,000, 2 typewriters ₹ 20,000, 4 machines ₹ 80,000 and 2 buildings ₹ 8,00,000. It is possible to add up the values of all assets to state the total worth of assets in the business of ₹ 10,50,000.

Business Entity Concept

Under this concept the business transactions should be prepared completely separate from the private affairs of the proprietor because the business enterprise is totally separate organization and different from the owner of the business. This can enable the proprietor to ascertain the true picture of the business.

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Going Concern Concept

While the accounts are maintained it is assumed that the business concern will continue to exist for an indefinite period of time. It facilitates classification of expenditure into capital expenditure and revenue expenditure. The capital expenditure benefits the business for a longer period and the revenue expenditure relates to short duration. The fixed assets are shown at their original cost, less its depreciation under this concept.

Cost Concept

Cost Concepts is of special significance only for fixed assets. Which is recorded in the books of account at cost i.e., at the price actually paid for acquiring the asset. Here, cost price is the actual price that is agreed upon by both the parties to a contract. (Than their practice contribution to true accounting records.) Finally, the cost concept prevents a concern from giving arbitrary value to an assets and the cost price of an assets is stable, where as the market price of assets is variable.

Example: A Machinery value ₹ 5,00,000 are purchased by a concern for ₹ 4,50,000, The machinery is recorded in the books of concern only at their cost price of ₹ 4,50,000 and not at their market price of ₹ 5,00,000.

Dual Aspect Concepts

In this concept, each and every transaction is split up into two aspects or equations, one aspect is related to the receiving of benefits and other aspect is related to the giving of benefits.

Example: Ananya purchased goods for cash, she receives goods of some value and gives cash of equal value.

This concept is based on the assumption that every for action, there is always equal and opposite reaction. According to this concept assets of a business will be equal to liabilities and capital, expressed in the form of equation:

$$\text{Assets} = \text{Liabilities} + \text{Capital}$$

$$\text{Capital} = \text{Assets} - \text{Liabilities}$$

Accounting Period Concept

When the business will exist for a longer duration it is necessary to maintain accounts with reference to a convenient period. So, that results are ascertained and financial position presented for that period, usually accounts are prepared for a period of one year which may be a financial year.

Accounting period is often, referred to as the accounting year. In English calendar year from 1st January to 31st December and according to financial year of the Government from 1st April to 31st March.

NOTES**Matching Concept**

One of the objectives of every business firm is to know its results for a given period time. In order to know the profit and loss of the business, the costs incurred during a given period of is matched against the revenue earned during that period. This helps to know the profit or loss of the business during a period of time. If the revenue exceeds the cost it represents the profits. On the other hand, if the cost exceeds the revenue, it represents the loss.

Accrual Concept

Accrual concept emphasises the realization concept in regard to both revenues and expenses. Under this concept the accountant is required to treat as revenues all those items for which there is the legal right to receive, although cash might not have been received for them. If a revenue is earned, but no payment is received, the same should be recorded as revenue, when an expense is incurred, but no payment is made, the same should be recorded as an expense, this concept has led to the introduction of accrual system of accounting as opposed to cash system of accounting.

Realisation Concept

In this concept the sale proceeds of goods and services are realised only when the buyer is legally bound to pay for the delivery of goods or rendering of services. Realisation concept is based on historical events of business transactions and therefore, it is also known as historical record concept.

For example, A businessman is reserved an order on 1st January 2005 and supplied goods on 14th January and he is received payment on 25th January. For this transaction, the revenue of sales of goods is recorded on 1st January but neither on 14th January nor on 25th January.

2.4 ACCOUNTING CONVENTIONS

Accounting Convention refers to the customs and traditions followed by Accountants as guidelines while preparing accounting statements. The important accounting conventions are as follows:

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Accounting Conventions	
Convention of Consistency	Convention of Disclosure
Convention of Conservation	Convention of Materiality

Convention of Consistency

Convention of consistency implies that the basis followed in different accounting period should be same. It also signifies that the accounting practices and methods should remain consistent from one accounting year to another. When once a particular method of depreciation is adopted for a particular fixed asset, the same method should be followed for that assets year after year.

Convention of Disclosure

Under the convention of disclosure all significant information about the business should be disclosed. This convention implies that the accounting records and statements conform to generally accepted accounting principle. As regards the investments, not only the various securities held by a concern should be disclosed, but also the mode of their valuation should be stated. Under this convention the financial statements should disclosed as much details as possible.

Convention of Conservation

Convention of conservation refers to the accounting records and in the financial statements of business, all the prospective losses, risks, and uncertainties should be taken note of and provided but prospective profits should be ignored. Such transactions related to provision for doubtful debts, provision for discount on Debtors etc. The importance of this convention is that the financial statements should indicate the actual position.

Convention of Materiality

Convention of Materiality implies that transactions which are more important to the business are recorded and which do not affect the result of the business drastically should be ignored as the cost of ascertaining such insignificant expenses is more than such a trivial expense incurred. A new pencil purchased and supplied to the office is, no doubt, an asset for the concern. Every day when someone in the office writes with the pencil, a portion of the pencil is used up, and as such the value of the pencil decreases. The pencil is taken as used up at the time it is purchased or at the time it is issued to the office

2.5 SUMMARY

NOTES

Accounting concepts mean and include necessary assumptions or postulates or ideas which are used to accounting practice and preparation of financial statements.

Accounting Convention implies that those customs, methods and practices to be followed as a guideline for preparation of accounting statements.

Separate entity concept implies that business unit or a company is a body corporate and having a separate legal entity distinct from its proprietors. The proprietors or members are not liable for the acts of the company.

The dual aspect concept is the basis of the double entry book keeping. Accordingly for every debit there is an equal and corresponding credit.

The term Capital refers to funds provide by the proprietor of the business concern. On the other hand, the term liability denotes the funds provided by the creditors and debenture holders against the assets of the business.

According to this concept, income or loss of a business can be analyzed and determined on the basis of suitable accounting period instead of wait for a long period, i.e., until it is liquidated.

Cost Concept implies that assets acquired are recorded in the accounting books at the cost or price paid to acquire it. And this cost is the basis for subsequent accounting for the asset. For accounting purpose the market value of assets are not taken into account either for valuation or charging depreciation of such assets.

Matching Concept is closely related to accounting period concept. The chief aim of the business concern is to ascertain the profit periodically. To measure the profit for a particular period it is essential to match accurately the costs associated with the revenue. Thus, matching of costs and revenues related to a particular period is called as Matching Concept.

Realization Concept is otherwise known as Revenue Recognition Concept. According to this concept, revenue is the gross inflow of cash, receivables or other considerations arising in the course of an enterprise from the sale of goods or rendering of services from the holding of assets.

Accrual Concept is closely related to Matching Concept. According to this concept, revenue recognition depends on its realization and not accrual receipt. Likewise cost are recognized when they are incurred and not when paid. The accrual concept ensures that the profit or loss shown is on the basis of full fact relating to all expenses and incomes.

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The Convention of Consistency implies that accounting policies, procedures and methods should remain unchanged for preparation of financial statements from one period to another. Under this convention alternative improved accounting policies are also equally acceptable. In order to measure the operational efficiency of a concern, this convention allows a meaningful comparison in the performance of different period.

2.6 GLOSSARY

- (a) **Accounting Concept:** Accounting concepts mean and include necessary assumptions or postulates or ideas which are used to accounting practice and preparation of financial statements.
- (b) **Accounting Convention:** Accounting Convention implies that those customs, methods and practices to be followed as a guideline for preparation of accounting statements.
- (c) **Dual aspect concept:** The dual aspect concept is the basis of the double entry book keeping. Accordingly for every debit there is an equal and corresponding credit.
- (d) **Cost Concept:** Cost Concept implies that assets acquired are recorded in the accounting books at the cost or price paid to acquire it.
- (e) **Convention of Consistency:** The Convention of Consistency implies that accounting policies, procedures and methods should remain unchanged for preparation of financial statements from one period to another.

2.7 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What is Accounting Concept?
2. What is Accounting Convention?
3. What is Dual aspect concept?
4. Give the meaning of Cost Concept.
5. What is Convention of Consistency?

(B) Extended Answer Questions**NOTES**

1. Explain various Accounting Concepts with examples.
2. Discuss in details about various Accounting Conventions.

(C) True or False

1. Accounting concepts mean and include necessary assumptions or postulates or ideas which are used to accounting practice and preparation of financial statements.
2. Accounting Convention implies to the customs, methods and practices that are to be followed as a guideline for preparation of accounting statements.
3. The going concern concept is the basis of the double entry book keeping. Accordingly for every debit there is an equal and corresponding credit.
4. Cost Concept implies that assets acquired are recorded in the accounting books at the cost or price paid to acquire it.
5. The Convention of Consistency implies that accounting policies, procedures and methods should remain unchanged for preparation of financial statements from one period to another.

(D) Multiple Choice Questions

1. Accounting concepts mean and include necessary assumptions or postulates or ideas which are used to.....
 - (a) Accounting practice
 - (b) Preparation of financial statements
 - (c) Both a and b
 - (d) None of the above
2. Customs, methods and practices to be followed as a guideline for preparation of accounting statements are the need as:
 - (a) Accounting Concept
 - (b) Accounting Convention
 - (c) Cost Concept
 - (d) None of the above

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(E) Match the Following

- | | |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| (a) Accounting Concepts | (i) It implies that those customs, methods and practices to be followed as a guideline for preparation of accounting statements. |
| (b) Accounting Convention | (ii) It includes necessary assumptions or postulates or ideas which are used to accounting practice and preparation of financial statements. |

(F) Fill in the Blanks

1. Accounting concepts mean and include necessary assumptions or postulates or ideas which are used to accounting practice and preparation of
2. implies that those customs, methods and practices to be followed as a guideline for preparation of accounting statements.
3. The is the basis of the double entry book keeping. Accordingly for every debit there is an equal and corresponding credit.
4. implies that assets acquired are recorded in the accounting books at the cost or price paid to acquire it.

2.8 KEY TO CHECK YOUR ANSWER

(C) 1. True, 2. True, 3. False, 4. True, 5. True

(D) 1. (c), 2. (b)

(E) (a) – (ii), (b) – (i)

(F) 1. Financial statements, 2. Accounting Convention, 3. Dual aspect concept, 4. Cost Concept

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2.11 TERMINAL QUESTIONS

1. Discuss various accounting principles with examples.

2. How accounting concepts are useful for business organizations? Explain.

UNIT 3

FORMS AND TYPES OF ACCOUNTING

Structure:

- 3.1 Introduction
- 3.2 Forms or Types of Accounting
- 3.3 Users of Accounting Information
- 3.4 Classification of Accounts
- 3.5 Summary
- 3.6 Glossary
- 3.7 Check Your Progress (Multiple Choice/Objective Type Questions)
- 3.8 Key to Check Your Answer
- 3.9 Bibliography
- 3.10 Suggested Readings
- 3.11 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Forms and Types of Accounting,
- Users of Accounting Information

3.1 INTRODUCTION

NOTES

Accounting is a vast and dynamic profession and is constantly adapting itself to the specific and varying needs of its users. Over the past few decades, accountancy has branched out into different types of accounting to cater for the diversity of needs of its users.

3.2 FORMS OR TYPES OF ACCOUNTING

Main types of accounting are as follows:

1. Financial Accounting
2. Management Accounting
3. Cost Accounting
4. Governmental Accounting
5. Tax Accounting
6. Forensic Accounting
7. Project Accounting
8. Social Accounting

1. Financial Accounting

Financial Accounting, or financial reporting, is the process of producing information for external use usually in the form of financial statements. Financial Statements reflect an entity's past performance and current position based on a set of standards and guidelines known as GAAP (Generally Accepted Accounting Principles). GAAP refers to the standard framework of guideline for financial accounting used in any given jurisdiction. This generally includes accounting standards (e.g. International Financial Reporting Standards), accounting conventions, and rules and regulations that accountants must follow in the preparation of the financial statements.

2. Management Accounting

Management Accounting produces information primarily for internal use by the company's management. The information produced is generally more detailed than that produced for external use to enable effective organization control and the fulfillment of the strategic aims and objectives of the entity. Information may be in the form budgets and forecasts, enabling an enterprise to plan effectively for its future or may include an assessment based on its past performance and results. The form and content of any report produced in the process is purely upon management's discretion.

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3. Cost Accounting

Cost accounting is a process of collecting, recording, classifying, analyzing, summarizing, allocating and evaluating various alternative courses of action & control of costs. Its application is more suited to manufacturing concerns.

4. Governmental Accounting

Governmental Accounting, also known as public accounting or federal accounting, refers to the type of accounting information system used in the public sector. This is a slight deviation from the financial accounting system used in the private sector. The need to have a separate accounting system for the public sector arises because of the different aims and objectives of the state owned and privately owned institutions. Governmental accounting ensures the financial position and performance of the public sector institutions are set in budgetary context since financial constraints are often a major concern of many governments. Separate rules are followed in many jurisdictions to account for the transactions and events of public entities.

5. Tax Accounting

Tax Accounting refers to accounting for the tax related matters. It is governed by the tax rules prescribed by the tax laws of a jurisdiction. Often these rules are different from the rules that govern the preparation of financial statements for public use (i.e. GAAP). Tax accountants therefore adjust the financial statements prepared under financial accounting principles to account for the differences with rules prescribed by the tax laws. Information is then used by tax professionals to estimate tax liability of a company and for tax planning purposes.

6. Forensic Accounting

Forensic Accounting is the use of accounting, auditing and investigative techniques in cases of litigation or disputes. Forensic accountants act as expert witnesses in courts of law in civil and criminal disputes that require an assessment of the financial effects of a loss or the detection of a financial fraud. Common litigations where forensic accountants are hired include insurance claims, personal injury claims, suspected fraud and claims of professional negligence in a financial matter (e.g. business valuation).

7. Project Accounting

Project Accounting refers to the use of accounting system to track the financial progress of a project through frequent financial reports. Project accounting is a vital component of project management. It is a specialized branch of management accounting with a prime focus on ensuring the financial success of company projects such as the launch of a new product. Project accounting can be a source of competitive advantage for project-oriented businesses such as construction firms.

8. Social Accounting

NOTES

Social Accounting, also known as Corporate Social Responsibility Reporting and Sustainability Accounting, refers to the process of reporting implications of an organization's activities on its ecological and social environment. Social Accounting is primarily reported in the form of Environmental Reports accompanying the annual reports of companies. Social Accounting is still in the early stages of development and is considered to be a response to the growing environmental consciousness amongst the public at large.

3.4 USERS OF ACCOUNTING INFORMATION

The progress and reputation of any business firm is built upon the sound financial footing. There are a number of parties who are interested in the accounting information relating to business. Accounting is the language employed to communicate financial information of a concern to such parties.

According to Slawin and Reynolds, "Conceptually, accounting is the discipline that provides information on which external and internal users of the information may base decisions that result in the allocation of economic resources in society". That is, users of accounting information may be grouped into two classes, viz., Internal users and External users.

(A) Internal Users:

Internal users of accounting information are those persons or groups which are within the organization. Following are such internal users:

1. Owners:

The owners provide funds or capital for the organization. They possess curiosity in knowing whether the business is being conducted on sound lines or not and whether the capital is being employed properly or not.

Owners, being businessmen, always keep an eye on the returns from the investment. Comparing the accounts of various years helps in getting good pieces of information. Properly kept accounts are good proof in dispute, they determine the amount of goodwill and facilitate in assessing various taxes.

2. Management:

The management of the business is greatly interested in knowing the position of the firm. The accounts are the basis; the management can study the merits and demerits of the business activity. Thus, the management is interested in financial accounting to find whether the business carried on is profitable or not. The financial accounting

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is the “eyes and ears of management and facilitates in drawing future course of action, further expansion etc.”

3. Employees:

Payment of bonus depends upon the size of profit earned by the firm. The more important point is that the workers expect regular income for the bread. The demand for wage rise, bonus, better working conditions etc. depend upon the profitability of the firm and in turn depends upon financial position. For these reasons, this group is interested in accounting.

(B) External Users:

External users are those groups or persons who are outside the organization for whom accounting function is performed. Following are such external users:

1. Creditors:

Creditors are the persons who supply goods on credit, or bankers or lenders of money. It is usual that these groups are interested to know the financial soundness before granting credit. The progress and prosperity of the firm, to which credits are extended, are largely watched by creditors from the point of view of security and further credit. Profit and Loss Account and Balance Sheet are nerve centres to know the soundness of the firm.

2. Investors:

The prospective investors, who want to invest their money in a firm, of course wish to see the progress and prosperity of the firm, before investing their amount, by going through the financial statements of the firm. This is to safeguard the investment. For this, this group is eager to go through the accounting which enables them to know the safety of investment.

3. Government:

Government keeps a close watch on the firms which yield good amount of profits. The State and Central Governments are interested in the financial statements to know the earnings for the purpose of taxation. To compile national accounts the accounting is essential.

4. Consumers:

These groups are interested in getting the goods at reduced price. Therefore, they wish to know the establishment of a proper accounting control, which in turn will reduce the cost of production, in turn less price to be paid by the consumers. Researchers are also interested in accounting for interpretation.

5. Research Scholars:**NOTES**

Accounting information, being a mirror of the financial performance of a business organization, is of immense value to the research scholar who wants to make a study into the financial operations of a particular firm.

To make a study into the financial operations of a particular firm the research scholar needs detailed accounting information relating to purchases, sales, expenses, cost of materials used, current assets, current liabilities, fixed assets, long-term liabilities and shareholders' funds which is available in the accounting records maintained by the firm.

6. Financial Institutions:

Bank and financial institutions that provide loan to the business are interested to know credit-worthiness of the business. The groups, who lend money need accounting information to analyse a company's profitability, liquidity and financial position before making a loan to the company. Further, they keep constant watch on the operating results and financial position of the business through accounting data.

7. Regulatory Agencies:

Various Government departments such as Company Law department, Reserve Bank of India, Registrar of Companies etc. require information to be filed with them under law. By examining this accounting information they ensure that concerned companies are following the rules and regulations.

3.4 CLASSIFICATION OF ACCOUNTS

In order to keep a proper record of the two aspect of transaction, accounts may be classified

Personal Accounts

The Account which relates to an individual, firms, companies or an institution are called personal account. The account of the person who receives the benefit of the transaction from the business should be debited, and the account of the person who gives the benefit of the transaction to the business should be credited.

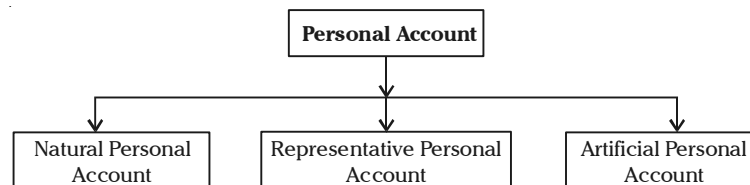
Example: Account of Mr. Jai Gopi, Account of DSSBL Pvt. Ltd., Account of R.K. Institute of Management, Account of Lakshmipathi Balaji, Account of Rabin & Sons Co.,

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Types of Personal Account

Personal Account can be classified into following categories:

- Natural Personal Account
- Artificial Personal Account
- Representative Personal Account

**Natural Personal Account**

Natural Personal Account refers to the accounts of human beings. It includes the accounts like, Subasis, Debasis, Rajkumar, Capital Account, Drawing Account, Debtors and Creditors Account.

Artificial Personal Account

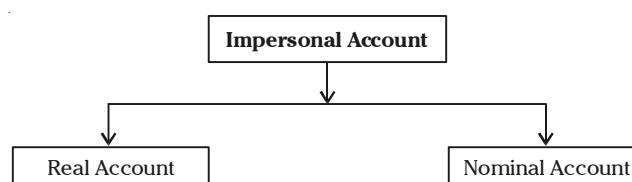
Artificial Person do not have physical constructions as human beings but they works as personal accounts like Companies account, Institutions account, Factory account etc. This accounts also involves accounts of Insurance Company, Hospital Account, Club Account etc.

Representative Personal Account

It is a particular person or a group of person such as outstanding salaries or wages account. In this case, instead of using the name of employees whose salary are outstanding. Here will be credit outstanding salaries account which represents employees, whom salary are payable. Representative personal account like, outstanding expenses account, prepaid expenses account, accrued income account and unearned income account etc.

Impersonal Account

Those accounts which are not related with personal account, group of person account, any firm's account, companies account as known as impersonal account. Impersonal accounts are subdivided into–



There are separate rules for recording transactions in respect with real account and nominal account.

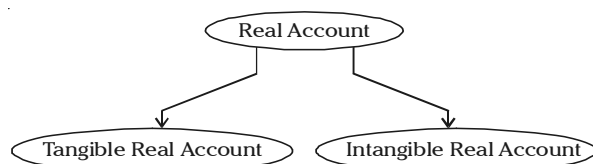
NOTES**Real Account**

Real Account related to all those things which exist and value can be measured in terms of money and which are assets of the business firm. It also known as assets account. *Example:* Cash account, Furniture account, Plant and Machinery account, Goodwill account etc.

Types of Real Account

Real Accounts are classified into two categories:

- Tangible Real Account

**Tangible Real Account**

These are those account which have physical existence usually that can be seen, felt, measured, touched, purchased, and sold etc. The tangible real account like, Cash account, Furniture account, Building account etc.

Intangible Real Account

These are those account which have no physical existence that cannot be seen, touched, but only felt and measured in the term of money. *Examples* of such account are Goodwill account, Copyright account, Royalty account, Patents Account and Trade Mark account etc.

Nominal Account

Nominal account is the records of a business firm's, expenses or losses and income and gains. Therefore, the account of expenses and losses of the business should be debited and the account of an income and gain of business should be credited. It is also known as fictitious account.

Example: Salary Account, Wages Account, Office Expenses Account, Rent Account, Commission Account, Discount Account, Interest Account etc.

3.5 SUMMARY

Financial Accounting, or financial reporting, is the process of producing information for external use usually in the form of financial statements. Financial Statements

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3.6 GLOSSARY

- (a) **Financial Accounting:** Financial Accounting, or financial reporting, is the process of producing information for external use usually in the form of financial statements.
- (b) **Financial Statements:** Financial Statements reflect an entity's past performance and current position based on a set of standards and guidelines known as GAAP (Generally Accepted Accounting Principles). GAAP refers to the standard framework of guideline for financial accounting used in any given jurisdiction.
- (c) **Management Accounting:** Management Accounting produces information primarily for internal use by the company's management. The information produced is generally more detailed than that produced for external use to enable effective organization control and the fulfillment of the strategic aims and objectives of the entity.
- (d) **Cost accounting:** Cost accounting is a branch of management accounting and involves the application of various techniques to monitor and control costs. Its application is more suited to manufacturing concerns.
- (e) **Governmental Accounting:** Governmental Accounting, also known as public accounting or federal accounting, refers to the type of accounting information system used in the public sector. This is a slight deviation from the financial accounting system used in the private sector.

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- (f) **Tax Accounting:** Tax Accounting refers to accounting for the tax related matters. It is governed by the tax rules prescribed by the tax laws of a jurisdiction. Often these rules are different from the rules that govern the preparation of financial statements for public use (i.e. GAAP).
- (g) **Project Accounting:** Project Accounting refers to the use of accounting system to track the financial progress of a project through frequent financial reports. Project accounting is a vital component of project management.

3.7 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What is Financial Accounting?
2. What is Management Accounting?
3. What is Cost Accounting?
4. Give the meaning of Governmental Accounting.
5. What is Tax Accounting?
6. What is Forensic Accounting?
7. What is Project Accounting?
8. Give the meaning of Social Accounting.

(B) Extended Answer Questions

1. Explain various forms or types of Accounting.
2. Discuss various users of Accounting Information.

(C) True or False

1. Financial Accounting is the process of producing information for external use usually in the form of financial statements.
2. GAAP refers to the standard framework of guideline for financial accounting used in any given jurisdiction.
3. Management Accounting produces information primarily for internal use by the company's management.
4. Social Accounting is a branch of management accounting and involves the application of various techniques to monitor and control costs.
5. Project Accounting refers to the use of accounting system to track the financial progress of a project through frequent financial reports.

(D) Multiple Choice Questions**NOTES**

1. What is the process of producing information for external use usually in the form of financial statements?
 - (a) Financial Accounting
 - (b) Cost Accounting
 - (c) Management Accounting
 - (d) All the above
2. What refers to the standard framework of guideline for financial accounting used in any given jurisdiction?
 - (a) Accounting
 - (b) Financing
 - (c) GAAP
 - (d) None of the above
3. What is a branch of management accounting that involves the application of various techniques to monitor and control costs?
 - (a) Financial Accounting
 - (b) Cost Accounting
 - (c) Management Accounting
 - (d) Social Accounting
4. What refers to the use of accounting system to track the financial progress of a project through frequent financial reports?
 - (a) Financial Accounting
 - (b) Cost Accounting
 - (c) Management Accounting
 - (d) Project Accounting

(E) Fill in the Blanks

1. Financial Accounting is the process of producing information for external use usually in the form of.....
2.refers to the standard framework of guidelines for financial accounting used in any given jurisdiction.
3. Accounting produces information primarily for internal use by the company's management.

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4. is a branch of management accounting and involves the application of various techniques to monitor and control costs.
5. refers to the use of accounting system to track the financial progress of a project through frequent financial reports.

3.8 KEY TO CHECK YOUR ANSWER

- (C) 1. True, 2. True, 3. True, 4. True, 5. True
- (D) 1. (a), 2. (c), 3. (d), 4. (d)
- (E) 1. Financial statements, 2. GAAP, 3. Management, 4. Cost Accounting, 5. Project Accounting

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3.10 SUGGESTED READINGS

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3.11 TERMINAL QUESTIONS

1. Why Government departments such as Company law department, Reserve Bank of India, Registrar of Companies etc. maintain separate accounts? Discuss.

UNIT 4 DOUBLE ENTRY SYSTEM

Structure:

- 4.1 Introduction
- 4.2 Accounting Equation
- 4.3 Business Transactions
- 4.4 Principles of Double Entry System
- 4.5 Summary
- 4.6 Glossary
- 4.7 Check Your Progress (Multiple Choice/Objective Type Questions)
- 4.8 Key to Check Your Answer
- 4.9 Bibliography
- 4.10 Suggested Readings
- 4.11 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Accounting Equation
- Rules of Recording Business Transactions

4.1 INTRODUCTION

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Double entry accounting is a record keeping system under which every transaction is recorded in at least two accounts. There is no limit on the number of accounts that may be used in a transaction, but the minimum is two accounts. There are two columns in each account, with debit entries on the left and credit entries on the right. In double entry accounting, the total of all debit entries must match the total of all credit entries. When this happens, the transaction is said to be “in balance.” If the totals do not agree, the transaction is said to be “out of balance,” and you will not be able to use the resulting information to create financial statements.

4.2 ACCOUNTING EQUATION

Meaning of Accounting Equation

Any transaction of a business firm will affect its assets, liabilities and owner’s capital. After a transaction there should be equality between the total assets and the total of liabilities and owner’s capital.

The equality between the total assets and total of liabilities and owner’s capital is stated in the form of an equation viz.,

Assets = Liabilities + Owner’s capital

Such an equation is known as accounting equation. The accounting equation can also be expressed in different ways. They are:

(i) **Assets = Liabilities + Owner’s capital**

(ii) **Assets – Capital = Liabilities.**

In order to understand properly the accounting equation some examples are given below:

Example: 1

If business borrows ₹ 15,000 from a lender in this case. The assets of business increase by ₹ 15,000 on account of the receipt of cash and the liabilities also increase by ₹ 15,000 because of the borrowing of loan.

The accounting equation will be–

Assets = Liabilities + Capital

Example: 2

If business purchase goods on credit for ₹ 10,000. In this case the assets of the business increases by ₹ 10,000 an account of receipt of goods and the liabilities

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also increase by ₹ 10,000 on account of the purchase of goods on credit. For this accounting equation will be:

$$\text{Assets} = \text{Liabilities} + \text{Capital}$$

$$\text{Cash} + \text{Stock} = \text{Loan} + \text{Creditor}$$

$$15,000 + 10,000 = 15,000 + 10,000$$

Illustration - 1

From the following transaction show the accounting equation:

(a) Amio commenced business with	₹ 30,000
(b) Purchased goods on credit	₹ 10,000
(c) Withdrew for private use	₹ 1,500
(d) Purchased goods for cash	₹ 2,000
(e) Paid Wages	₹ 500
(f) Paid to Creditors	₹ 1,000
(g) Sold goods on credit	₹ 2,000
(h) Sold goods for Cash (Cost Price 1,500)	₹ 2,000
(i) Outstanding Salary	₹ 500
(j) Paid rent in advance	₹ 1,000

Solution:

(a) This transaction brings in cash ₹ 30,000 does not result in any liability; results in a capital of ₹ 30,000. So the equation will be -

$$\text{Assets (₹)} = \text{Liabilities (₹)} + \text{Capital (₹)}; \quad 30,000 = 0 + 30,000$$

(b) This transaction affect the liability and assets not capital. So the equation will be -

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

$$\text{Cash} + \text{Stock} = \text{Creditors}; \quad 30,000 + 10,000 = 10,000 + 30,000$$

(c) This transaction reduce cash and capital. So equation will be -

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

$$(\text{Cash} - \text{drawings}) + \text{Stock} = \text{Creditors}$$

$$(30,000 - 1,500) + 10,000 = 10,000 + (30,000 - 1,500)$$

$$28,500 + 10,000 = 10,000 + 28,500; \quad 38,500 = 38,500$$

(d) It will reduce the cash by ₹ 2,000 and increase the stock by ₹ 2,000. Equation will be

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

NOTES

$$\text{Cash} + \text{Stock of goods} = \text{Creditor}$$

$$(28,500 - 2,000) + (10,000 + 2,000) = 10,000 + 28,500; \quad 38,500 = 38,500$$

- (e) This transaction reduce the cash by ₹ 500 and reduce the capital because it reduces the profit as an expenditure (i.e., reducing capital) Equation will be -

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

$$\text{Cash} + \text{Stock of goods} = \text{Creditor}$$

$$(26,500 - 500) + 12,000 = 10,000 + (28,500 - 500)$$

$$26,000 + 12,000 = 10,000 + 28,000; \quad 38,000 = 38,000$$

- (f) This transaction will reduce the cash by ₹ 1,000 and reduce the creditor by ₹ 1,000. Equation will be

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

$$\text{Cash} + \text{Stock of goods} = \text{Creditor}$$

$$(26,000 - 1,000) + 12,000 = (10,000 - 1,000) + 28,000$$

$$25,000 + 12,000 = 9,000 + 28,000; \quad 37,000 = 37,000$$

- (g) This transaction brings assets (i.e., Debtors) for ₹ 2,000 and reduces Stock of goods. The equation will be -

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

$$\text{Cash} + \text{Stock of goods} + \text{Debtor} = \text{Creditors}$$

$$25,000 + (12,000 - 2,000) + 2,000 = 9,000 + 28,000$$

$$37,000 = 37,000$$

- (h) This transaction will reduce the stock and increase capital and cash. Equation will be -

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

$$\text{Cash} + \text{Stock} + \text{Debtor} = \text{Creditor}$$

$$(25,000 + 2,000) + (10,000 - 1,500) + 2,000 = 9,000 + 28,000 + 500$$

$$27,000 + 8,500 + 2,000 = 9,000 + 28,500$$

$$37,500 = 37,500$$

- (i) This transaction will increase the liability by ₹ 500 and reduces capital because outstanding salary reduce the profit. Equation will be-

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

$$\text{Cash} + \text{Stock} + \text{Debtor} = \text{Creditor}$$

$$27,000 + 8,500 + 2,000 = 9,000 + 500 + 28,500 - 500$$

- (j) This transaction will reduce the cash ₹ 1,000 and brings a new assets called prepaid rent. Equation will be:

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

NOTES

$$\text{Cash} + \text{Stock} + \text{Debtor} + \text{Prepaid Rent} = \text{Creditor}$$

$$(27,000 - 1,000) + 8,500 + 2,000 + 1,000 = 9,500 + 28,000$$

Illustration - 2

From the following transaction show the accounting equation:

- Rahim commenced business with ₹ 10,000
- Purchased a furniture for Cash ₹ 5,000
- Depreciation on furniture by ₹ 1,000
- Investment ₹ 5,000 in cash.
- Purchased a Building for ₹ 10,000 giving ₹ 5,000 in cash and the balance through a loan
- Received cash towards commission ₹ 1,000

Solution:

- (a) This transaction affects the assets and brings capital. Equation will be-

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

$$(\text{Cash}) 10,000 = 0 + 10,000$$

- (b) This transaction will bring a new assets (Furniture) and reduce cash. Equation will be

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

$$\text{Cash} + \text{Furniture} = 0 + 10,000$$

$$(10,000 - 5,000) + 5,000 = 10,000$$

- (c) This transaction will reduce the asset by ₹ 1,000 and reduce the capital. Equation will be -

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

$$\text{Cash} + (\text{Furniture} - 1,000) = 0 + 10,000 - 1,000$$

$$5,000 + (5,000 - 1,000) = 10,000 - 1,000$$

- (d) This transaction brings in cash of ₹ 5,000 and result in a capital of ₹ 5,000. Equation will be -

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

$$\text{Cash} + \text{Furniture} = 0 + 9,000 + 5,000$$

$$(5,000 + 5,000) + 4,000 = 9,000 + 5,000$$

- (e) This transaction brings in Building of ₹ 10,000 and reduces the cash by ₹ 5,000 and increase the Liabilities by ₹ 5,000. Equation will be -

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

$$\text{Cash} + \text{Furniture} + \text{Buildings} = 5,000 + 14,000$$

$$(10,000 - 5,000) + 4,000 + 10,000 = 19,000$$

- (f) It increase the cash by ₹ 1,000 and capital by ₹ 1,000 because it is an income. Equation will be -

$$\text{Assets} = \text{Liabilities} + \text{Owner's Capital}$$

$$\begin{aligned}\text{Cash} + \text{Furniture} + \text{Building} &= 5,000 + 14,000 + 1,000 \\ (5,000 + 1,000) + 4,000 + 10,000 &= 20,000\end{aligned}$$

NOTES

4.3 BUSINESS TRANSACTIONS

The main objective of financial accounting is to record the all transactions in the books of accounts and prepare to trading account, Profit and Loss account and balance sheet at the end of the financial year. So we should have some knowledge about the transactions.

The term ‘transaction’ refers to the happenings events which are measurable in terms of money, which generally, involves exchange of money or money’s worth between the business and other parties and which change the financial position of a business concern.

Definitions

According to **Field House**, “Every financial charge which occurs in your business”.

According to **Noble and Newcomer**, “Any happenings which brings charge in the pattern of assets or liabilities or proprietorship of a business concern is a financial transaction to it”.

Features of Transaction

A financial transaction or business transactions has certain features, they are as follows:

- (i) A transaction is an event, happening
- (ii) It is measurable in terms of money.
- (iii) A transaction involves at least two parties.
- (iv) There should be an exchange value.
- (v) A transaction will change the financial position of a firm.
- (vi) The change in the financial position caused by transaction may be visible or invisible. It is not always visible.

Types of Transactions

Business Transactions can be classified into four types. They are as follows:

- | | |
|---------------------------|--------------------------|
| (i) Cash Transactions | (ii) Credit Transactions |
| (iii) Barter Transactions | (iv) Paper Transactions |

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(i) Cash Transactions: A cash transactions refers to any transactions, where the value of a transaction is paid in cash immediately or readily. Some of examples of cash transactions are given below:

- (a) Purchase of goods for cash
- (b) Purchase of property for cash
- (c) Sale of goods for cash
- (d) Sale of assets for cash
- (e) Sending of money to other party
- (f) Cash stolen from office
- (g) Cash withdrawn by the proprietor from the business for his/her personal use.

(ii) Credit Transactions: A credit transactions is a transaction, where the value of transaction are not paid immediately in cash. It is payable in future on a date. Examples of credit transaction are as follows:

- (a) Purchase of property on credit.
- (b) Purchase of goods on credit.
- (c) Sale of goods on credit.
- (d) Sale of Furniture's on credit.
- (e) Any unpaid expenses and outstanding income.

(iii) Barter Transactions: A barter transaction is a business transaction, where there is an exchange of giving some benefit and receiving some benefit of equal value but this exchange is not interm of money. It should be in terms of money's worth. Examples of barter transaction are as follows:

- (a) Sale of Furniture in exchange of purchase of type writer.
- (b) Giving of goods for Furniture purchased.
- (c) Receiving goods for sale of machinery.
- (d) Giving of goods to an employee in settlement of his salary.

(iv) Paper Transactions: A paper transaction is a transaction, where there is no question of meeting the value of transaction. Some of examples of cash transactions are given below:

- (a) Depreciation charged on any fixed assets.
- (b) Bad debts written off.
- (c) Discount allowed to a customer.

- (d) Loss of goods by fire.
- (e) Loss of assets by fire, or an accident.

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Source Documents

Documents on the basis of which entries are recorded in the books of accounts are known as source documents. These documents provide evidence of a business transaction. The objective of accounting requires that each recorded transaction of account should have adequate evidence to support it. Various business documents like, cash memos, invoices, bills, receipts, debit and credit notes, pay-in-slips, cheques, etc., constitute source documents. These documents provide written evidence of transactions that has been taken place. Source documents are also prepared for recording internal events such as depreciation and valuation of stocks. Thus, there must be a source documents for each transaction recorded in the books of accounts.

Meaning of Source Documents

Source documents are documents on the basis of which transactions are recorded in the books of account. These documents include cash memo, invoice, receipt, pay-in slip, cheque, debit note and credit note, etc.

Purposes Served by Source Documents

Source documents serve for some purposes which are explained as follows:

- (i) Source documents provide some information about the nature of business transactions and the amounts involved in those transactions.
- (ii) These documents provide evidence of a business transaction.
- (iii) These documents initiate the accounting process.
- (iv) It also serves as legal evidence in case of dispute.
- (v) Accounts are debited or credited on the basis of these documents.
- (vi) The correctness of transactions recorded in the book of account can be verified with the help of these documents.

Methods of Recording of Business Transactions

The recording of business transaction in the book of accounting consists of the following methods:

- (i) Conventional method or Traditional method.
- (ii) Modern method or Practical method.

NOTES

4.4 PRINCIPLES OF DOUBLE ENTRY SYSTEM

The rules of double entry system of books-keeping is that the account which is receiving some benefits are called as the receiving aspect or income aspect or debit aspect and the giving of some other benefit is called as the giving aspect or outgoing aspect or credit aspect. The rules are related debit or credit benefits. The rules of book-keeping is also known as the golden rule of accounting or fundamental or general rule of the double entry system of accounting.

Principle of double entry-system is a scientific system. There are definite specific rules for passing entries under this system. This system based on the following principles.

(i) Two Parties: The transaction must involve two parties that means giving of some benefit by one party and on the other hand receiving of equal benefit by the other party. Without two parties no transactions can takes position.

(ii) Two Accounts: In each and every transaction has involved two accounts. One of them is debited and the other is credited. Certain transactions may involve more than two accounts but the amount involve in these accounts will always be equal i.e. account to be debited and credited will always be equal.

(iii) Division of Accounts: All the ledger accounts prepared on the basis of this system have two sides. Left hand side is 'Debit' and the right hand side is 'Credit'.

(iv) Definite of Rules: In system is based upon the accounting truth that every debit has got its corresponding credit. That's why all the business transactions are recorded simultaneously at the debit and credit side.

Rule for Personal Account

Personal Account:

Debit the Receiver

Credit the Giver

In other word, debit that persons account who receives something from the business and credit that person who gives something to business.

Illustration - 1

- (i) Cash paid to Mr. Anil Kumar, ₹ 20,000
- (ii) Cash received from Mr. Adhir Kumar, ₹ 50,000

Solution:**NOTES**

(i) In this case, two accounts are affected - Anil Kumar account and Cash account. According to the rule of Debit the receiver, Anil Kumar's account will be debited as he is the receiver of cash. Similarly, the account of cash will be credited, as cash has gone out from the business. The entry will be:

S.No.	Particulars	LF	Debit	Credit
(i)	Anil Kumar's Account	Dr.	20,000	
	To Cash Account			20,000

(ii) In this case, Cash Account will be debited as cash has been received by the business firm and Adhir Kumar's Account will be credited according to the rule. 'Credit the giver'. The entry will be:

S.No.	Particulars	LF	Debit	Credit
(i)	Cash Account	Dr.	50,000	
	To Adhir Kumar's Account			50,000

Rule for Real Account***Real Account:*****Debit What comes in****Credit What goes out.**

In the other words, Real account is debit what comes in and credit what goes out where, debit, that particular assets or property account which comes into business and credit that particular assets or property which goes out from the business.

Illustration - 2

- (i) Paid cash to Kumar ₹ 5,000
- (ii) Sold Machinery ₹ 30,000
- (iii) Paid Salary ₹ 7,000

Solution:

(i) In this transactions two accounts are affected - Cash accounts and Kumar's account. According to the rule, 'debit what comes in', Kumar's account will be debited as he is the receiver of cash. Similarly, 'Credit What goes out'. The cash will go from the business. Therefore cash account will be credited. The entry will be:

NOTES	S.No.	Particulars	LF	Debit	Credit.
	(i)	Kumar's Account	Dr.	5,000	
		To Cash Account			5,000

Note: Cash Account is the Real Account.

(ii) In this case Cash Account and Machinery account is affected by the rule of debit what goes out and credit what comes in. Machinery goes out from the business and cash coming to the business. The Entry will be;

S.No.	Particulars	LF	Debit	Credit
(ii)	Cash Account	Dr.	30,000	
	To Machinery Account			30,000

(iii) In this case two accounts are affected Cash account and Salary account. According to the rules, debit what comes in and Credit What goes on. Here cash account, is the real account because 'Cash goes out' from the business. So the entry will be;

S.No.	Particulars	LF	Debit	Credit.
(iii)	Salary Account	Dr.	7,000	
	To Cash Account			7,000

Rule for Nominal Account

Nominal Account:

Debit all Expenses or Losses

Credit all Income or Gains

In the other word, Nominal Account is debit all expenses and losses and credit all income and gain of a business.

Illustration - 3

(i) Wages Paid	₹ 5,000
(ii) Commission received	₹ 150
(iii) Interest received	₹ 2,000

Solution:

(i) In this transaction two accounts are affected, Wages account and Cash account. Wages account represent expenses then according to rule 'debit the expenses or losses, So wages account should be debited and cash account should be credited according to rule of Real account "Credit What goes out". The entry will be;

<i>S.No.</i>	<i>Particulars</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>	NOTES
(i)	Wages Account	Dr.	₹ 5,000		
	To Cash Account			₹ 5,000	

(ii) In this transactions two account affected, Commission account and Cash account. Commission received by business is an income. So, commission account should be debited according to the rule of nominal account, Credit all income or gains. On the other hand cash account should be debited as per rule of real account, debits what's come in. The entry will be;

<i>S.No.</i>	<i>Particulars</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
	Cash Account Dr.		₹ 150	
	To Commission Account			₹ 150

(iii) In this transaction, two accounts are affected, Cash Account and Interest Account. Interest Account is a Nominal Account and it represent the income so it will be credited according to the rule of nominal account. 'Credit all income or gains, and Cash Account is real account according to the real account rule 'debit what comes in'. So cash account should be debited. The entry will be;

<i>S.No.</i>	<i>Particulars</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
	Cash Account Dr.		₹ 2,000	
	To Interest Account			₹ 2,000

Golden Rule of Accounting:

Personal Account

Debit the Receiver

Credit the Giver

Real Account

Debit What Comes in

Credit What Goes out

Nominal Account

Debit all Expenses or Losses

Credit all Incomes or Gains

Differences between Personal Accounts and Real Accounts

The main differences between Personal Accounts and Real Accounts are explained as follows:

(i) Real Accounts relate to all those things which exists and whose value can be measured in terms of money and which are the assets of the business. On the

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other hand, personal account which relates to an individual, firms, companies or an institution are called personal account.

(ii) Under Personal Account a separate account is opened for each person or firm etc. Wherein transactions relating to that person or firm are recorded. Whereas, under the real account a separate account is opened for each type of asset, where all transactions relating to that asset are recorded.

(iii) Personal accounts show both debit balances or credit balances, whereas real accounts show only debit balances.

Differences Between Nominal Account and Real Account

The main difference between Nominal Account and Real Account are as follows:

(i) Nominal accounts record a trader's expenses and gain or incomes. On the other hand, Real accounts are accounts of properties assets of a business.

(ii) Nominal accounts reveal whether we have gained or lost on a particular account, where as Real account a separate account is opened for each type of asset, where all transactions relating to that assets are recorded.

(iii) Nominal accounts are used for preparing trading and profit & loss account whereas, Real account are used for preparing of balance sheet only.

(iv) All the trader's expenses or income like Salary Account, Wages Account, Rent Account, Office Expenses Account etc., are the example of nominal Account, whereas, The Cash Account, Furniture Account, Land and Building Account etc. are the example of Real Account.

(v) With the help of Nominal account, it is possible to know the amount spent on different account of expenditure in a particular period, where as, Real account speak about the value of various assets as properties owned by the firm in terms of money and indicate the financial position of the business.

4.5 SUMMARY

The double entry system of accounting or bookkeeping means that every business transaction will involve two accounts (or more). For example, when a company borrows money from its bank, the company's Cash account will increase and its liability account Loans Payable will increase. If a company pays Rs. 2000 for an advertisement, its Cash account will decrease and its account Advertising Expense will increase.

Double entry also allows for the accounting equation (assets = liabilities + owner's equity) to always be in balance. In our example involving Advertising Expense, the

accounting equation remained in balance because expenses cause owner's equity to decrease.

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A third aspect of double entry is that the amounts entered into the general ledger accounts as debits must be equal to the amounts entered as credits.

Recording business transactions is a multi-step process. The first step in recording business transactions is to examine the transaction and decide what accounts will be affected. The second step in recording business transactions is to decide what account will be debited and what account will be credited. The third step in recording business transactions is to actually document the transaction in a journal.

The accounting involves the record keeping of the business transactions and every business transaction is recorded with the principle of double entry bookkeeping, meaning every debit in the transaction will have equal amount of corresponding credit thus making the match of all total debits with all total credits. This, in effect, is called the matching of Trial balance.

The different accounting software available in the market has made the record keeping convenient, fast, and easy to access. As you know there are five categories of accounts namely, Assets, Liabilities, Owners (Equity), Revenues, and Expenses. When a business transaction is recorded with the help of a particular module in any of these accounting softwares, the double entry accounting is automatically generated in that accounting software. However, it is important to understand when and which of these five categories of accounts need to be debited or credited while recording the accounting entries.

4.6 GLOSSARY

- (a) **Double entry system:** The double entry system of accounting or bookkeeping means that every business transaction will involve two accounts (or more).
- (b) **Recording business transaction:** Recording business transactions is a multi-step process. The first step in recording business transactions is to examine the transaction and decide what accounts will be affected. The second step in recording business transactions is to decide what account will be debited and what account will be credited. The third step in recording business transactions is to actually document the transaction in a journal.
- (c) **Double-entry accounting:** Double-entry accounting states that for every one transaction that occurs, there will be at least two accounts affected. One account will be debited, and one account will be credited. A debit is

NOTES

an entry made on the left side of an account. A credit is an entry made on the right side of an account. These dual effects of a single transaction will either increase or decrease an account balance.

- (d) **Business Transaction:** The term 'transaction' refers to the happenings events which are measurable in terms of money, which generally, involves exchange of money or money's worth between the business and other parties and which change the financial position of a business concern.
- (e) **Goods:** Goods refers commodities or things which are for resale. In other words, articles purchased for sales at profit or processing by the business or for the use in the manufacture of certain other goods as raw material are known as goods. If any firm dealing with machinery then it will be goods but the firm dealing other goods, machinery will be assets.
- (f) **Net Worth:** Net Worth is the difference between the total assets of an entity and its external liabilities. It represents what is owes to its owners. The terms worth, owner's investment or capital all has the same meaning in accounting.

4.7 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What do you mean by double entry system?
2. Give the meaning of accounting equation.
3. Define accounting terminology.
4. Show the accounting equations if there are no liabilities.
5. Give an equation to calculate owner's equity.
6. What is Net Worth?

(B) Extended Answer Questions

1. Give an equation for calculating external equity.
2. State a transaction in which there is increase in one liability and decrease in another.
3. Enumerate the heads of traditional classification of account.
4. How will you compute accounting equation? What is the effect of transaction on accounting equation? Explain with examples.

5. Explain different types of book-keeping system.
6. State the procedure for developing an accounting equation.

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(C) True or False

1. The double entry system of accounting means that every business transaction will involve two accounts (or more).
2. Single entry allows for the accounting equation (assets = liabilities + owner's equity) to always be in balance.
3. The term 'transaction' refers to the happenings events which are measurable in terms of money, which generally, involves exchange of money or money's worth between the business and other parties.
4. Goods refer commodities or things which are for resale.
5. Net Worth is the difference between the total assets of an entity and its external liabilities.

(D) Multiple Choice Questions

1. What means that every business transaction will involve two accounts (or more)?
 - (a) Single Entry System
 - (b) The Double Entry System
 - (c) Ledger
 - (d) Journal
2. What allows for the accounting equation (assets = liabilities + owner's equity) to always be in balance?
 - (a) Single Entry System
 - (b) The Double Entry System
 - (c) Ledger
 - (d) Journal

(E) Fill in the Blanks

1.of accounting means that every business transaction will involve two accounts (or more).
2. Double entry allows for the accounting equation (assets = liabilities + owner's equity) to always be in.....

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3. The termrefers to the happenings events which are measurable in terms of money, which generally, involves exchange of money or money's worth between the business and other parties.
4.refer commodities or things which are for resale.
5.is the difference between the total assets of an entity and its external liabilities.

4.8 KEY TO CHECK YOUR ANSWER/ANSWER TO CHECK YOUR PROGRESS

(C) 1. True, 2. False, 3. True, 4. True, 5. True

(D) 1. (b), 2. (b)

(E) 1. The double entry system, 2. Balance, 3. Transaction, 4. Goods, 5. Net Worth

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4.10 SUGGESTED READINGS

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4.11 TERMINAL QUESTIONS

1. Why is closing and balancing of Account necessary? What is the procedure of closing and balancing the personal, Real and Nominal Accounts?

2. "Business transaction involves exchange of money or money's worth between the business and other parties". Discuss.

BLOCK II: Accounting Process

UNIT 5 JOURNALISING AND POSTING

Structure:

- 5.1 Introduction
- 5.2 Journal
- 5.3 Steps of Journalising
- 5.4 Problems on Journal
- 5.5 Ledger
- 5.6 Features of Ledger
- 5.7 Importance of Ledger
- 5.8 Advantages of Ledger
- 5.9 Structure of a Ledger
- 5.10 Problems on Ledger
- 5.11 Summary
- 5.12 Glossary
- 5.13 Check Your Progress (Multiple Choice/Objective Type Questions)
- 5.14 Key to Check Your Answer
- 5.15 Bibliography
- 5.16 Suggested Readings
- 5.17 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Preparation of Journal
- Classification of Journals
- Preparation of Ledger
- Classification of Ledger

5.1 INTRODUCTION

NOTES

Journalizing is the process of recording a business transaction in the accounting records. This activity only applies to the double-entry bookkeeping system. Journalizing can result in entries to the general ledger or to subsidiary ledgers. An entry is made to a subsidiary ledger when it involves a high-volume transaction that management has decided to summarize separately from the general ledger.

5.2 JOURNAL

The term 'Journal' comes from a French word 'Jour' which means a day. It is a day book. A Journal is a chronological record of transactions entered into by a business. A journal entry is recorded for each transaction. Journalizing is the process of recording entries in a journal. Each journal entry contains a date with columns for the amounts debited and credited. Accounts credited are intended to distinguish them from accounts debited. Transactions are normally recorded in a general journal. Specialized journal may be used to record some specialization transactions. Special journals accomplish the same purpose as a general journal, but they save time in recording similar transactions. Documents on the basis of which entries or transactions are recorded in the books of accounts are known as source documents. These documents provide information about the nature of the transaction and the amount involved in it. The verifiable objective principle of accounting requires that each recorded transaction of account should have adequate evidence to support it. Various business documents such as cash memos, invoices, bills, receipts, debit and credit notes, pay-in-slips, cheques, etc., constitute source documents. Thus, the journal provides a chronological record of all the transactions with details of the accounts debited, and the amount of each transactions. The frequency of posting differs among companies, partly based on the degree to which their accounting system is automated. For example, in some computerized systems, amounts are posted to the ledger accounts at the time an entry is recorded in the journal.

Meaning of Journal

A journal is a chronological record of transactions entered into by a business. It is the book in which transactions are recorded first of all according to double entry system. A journal may be defined as a book containing a day-to-day record of transactions. It is also called the book of original entry. A journal entry is recorded for each transaction of accounting book. Thus, the book in which all the business transactions are entered systematically for the first time is called journal.

NOTES

Definitions of Journal

According to **Carter**, “The Journal as originally used, is a book of prime entry in which transactions are copied in order of date from a memorandum or waste book. The entries as they are copied are classified into debits and credits, so as to facilitates their correctly posted afterwards in the ledger”.

“The book in which all the business transactions are entered systematically for the time is known as journal”.

– **John Mathew.**

Importance or Uses of Journal

- (i) The journal is a chronological records (daily basis) of all business transactions.
- (ii) The use of journal simplifies ledger.
- (iii) In the journal both the debit and credit aspect of a transaction recorded so it ensure observance of double entry system.
- (iv) Journal helps to understand the principle of double entry system.
- (v) Journal helps in solving misunderstanding and disputes in the business.
- (vi) Journal helps to understand the purpose and the nature of the entries with the help of providing narration i.e., a brief explanation after journalizing each entry.
- (vii) Journal makes the rectifying of errors easily because the entries in the journal are made date wise.

Features of Journal

The main features of a journal are as follows:

- (i) It is a book of prime, first or original entry.
- (ii) It contains a day-to-day record of transactions.
- (iii) It shows dual aspects of each and every transaction.
- (iv) It is very useful for small business concern only.
- (v) It is a subsidiary book i.e. used for simplifying the ledger.
- (vi) The transaction is recorded in a chronological order.
- (vii) It helps to identify nature of accounts i.e., which account is to be debited and which account is to be credited for every transaction.

Advantages of Journal**NOTES**

The following advantages derived by the business if a journal is maintained;

- (i) It provides a day wise record of all business transactions chronologically.
- (ii) Journal is a daily records, as it record each days transaction of same day.
- (iii) Journal is a book of prime entry or original entry or first entry, as all business transactions are first in the journal.
- (iv) Journal reduce the possibilities of errors and its easier to post them to the ledger.
- (v) Journal simplifies ledger, as the business transactions are not required to be noted down in the ledger.

Limitations of Journal

Journal suffers from certain limitations. They are:

- (i) Journal is only a subsidiary book. It is not a book of final entry.
- (ii) The writing of work in the journal is very difficulty and laborious.
- (iii) Journal become very bulky because all business transactions are recorded in journal.
- (iv) Journal is useful for small business concern only.
- (v) Journal cannot provide information about any balance of each day.

5.3 STEPS OF JOURNALISING

The process of recording a transaction in the journal is called journalising. The different steps to be followed in journalising business transactions are-

Step-1 To find out the name of accounts which are involved in the transaction.

Step-2 To find out nature of accounts (real, nominal, personal) involved and ascertain which accounting rule is applicable for both the accounts.

Step-3 To apply the golden rule and decide to debit and credit, which account is to be debited and which account is to be credited.

Step-4 To write (which one debited) the name of the account to be debited close to the left hand side in the particular column and along with the abbreviation 'Dr.' on the same line and write the name of account (which are credited) to be credited in the next line started by the word 'To' at a little gap from (debited account) first line of particular column.

Step-5 To write 'narration' (i.e. a brief description of the transaction) with the brackets in the down of main transaction in the same column.

NOTES

Structure of Journal:

The Specimen ruling of journal is given below:

<i>Date</i> (₹)	<i>Particulars</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i> (₹)

The five columns of Journal are explained as follows:

- (i) **Date:** Under this column, the date is recorded on which the transactions are entered. To keep the year on top and below the year, month and day of the transactions has to be written.
- (ii) **Particulars:** It is the second column, which contains two names of accounts one is to be debited and another one is to be credited. The debit entry shows the name of the account to be debited with the amount in the debit column.
- (iii) **L.F. (Ledger Folio):** The transaction entire into journal entry and posted to the ledger, the page number or folio number of the ledger account where the posting of has been made from journal is recorded in the L.F. Column.
- (iv) **Amount Dr. (Debit):** In this column amount to be debited is recorded against the debit column.
- (v) **Amount Cr. (Credit):** In this column amount to be credited in recorded against the credit column.

Casting and Carry Forward

At the end of each page, both the Dr. and Cr. columns are totaled up just below the last entry is passed. These totals must be equal because the amount debited in each entry must be equal to the amount credited. These totals are carried forward to the next page progressively up to the end of the accounting period, for this purpose, the words 'carried forward' or 'Total c/f' are written in particulars columns at the end of each page and the words, 'brought forward' or 'Total b/f' are written at the start of each page.

5.4 EXAMPLES OF JOURNAL ENTRIES

Illustration - 1

Introduction of cash into the business by the proprietor will be the capital of the business. Generally a businessman starts business with cash, but sometimes he

may starts business with cash as well as other assets or liabilities or only with borrowed money. In such a case instead of opening a proprietors personal accounts by his name open a capital account.

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- (a) Amit Roy started business with cash ₹ 90,000.
- (b) Narugopal commenced business with ₹ 80,000.
- (c) Mustafizur introduced into business with ₹ 60,000.
- (d) Ganesha invested in the business ₹ 30,000.
- (e) Manjunath started business with personal saving ₹ 58,000.
- (f) Cash brought in by Paru as capital ₹ 1,20,000.
- (g) Received from Reddy Kumar, the proprietor ₹ 50,000

Pass the Journal Entry.

Solution:**Journal Entries**

<i>S.No.</i>	<i>Particulars</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
(a)	Cash Account To Amit Roy's Capital Account (Being the started business by the proprietor as capital)	Dr	90,000	90,000
(b)	Cash Account To Narugopal's Capital Account (Being the commenced business by the proprietor with cash)	Dr.	80,000	80,000
(c)	Cash Account To Mustafizur's Capital Account (Being the proprietor introduced cash into the business)	Dr.	60,000	60,000
(d)	Cash Account To Ganesha's Capital Account (Being cash invested in business by the proprietor as capital)	Dr.	30,000	30,000
(e)	Cash Account To Capital Account (Being the proprietor using personal saving capital for started business)	Dr.	58,000	58,000
(f)	Cash Account To Capital Account (Being the Cash brought into the business by the proprietor for as capital)	Dr.	1,20,000	1,20,000
(g)	Cash Account To Capital Account	Dr.	50,000	50,000

NOTES

(Being the proprietor introduced cash into the business as capital).

Note: From the above transaction clearly understand, the proprietor bring into cash for the business as capital. Here two accounts involving in each of the transactions: i) Cash account and ii) Capital account. Cash account is a real account, so, it should be debited because cash comes into the business. On the other hand, capital account is the personal account and credit the giver, so, Capital account should be credited.

Illustration - 2

Journalise the following transactions:

2015 July	1	Ajay started business with ₹50,000
	2	Paid into Bank ₹ 40,000
	4	Bought goods ₹ 5,000 for cash
	12	Sold goods for cash ₹ 15,000
	17	Purchased goods from Uday ₹ 7,000
	18	Sold goods to Vikash ₹ 10,000
	25	Withdraw from the Bank for personal use ₹ 5,000
	30	Paid salaries to staff ₹ 8,000

Solution:**Journal Entries**

<i>Date</i>	<i>Particulars</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
2015				
July 1	Cash Account To Ajay's Capital Account (Being Ajay started business with cash)	Dr.	50,000	50,000
2	Bank Account To Cash Account (Being paid amount to Bank)	Dr.	40,000	40,000
4	Purchases Account To Cash Account (Being Purchased goods for cash)	Dr.	5,000	5,000
12	Cash Account To Sales Account (Being sold goods for cash)	Dr.	15,000	15,000
17	Purchases Account To Uday's Account (Being Purchased goods from Uday on credit)	Dr.	7,000	7,000

18	Vikash's Account	Dr. 10,000		NOTES
	To Sales Account		10,000	
	(Being sold goods to Vikash on credit)			
25	Drawing's Account	Dr. 5,000		
	To Bank Account		5,000	
	(Being withdrew from Bank for Personal use)			
30	Salary Account	Dr. 8,000		
	To Cash Account		8,000	
	(Being paid salary by cash)			

Illustration - 3

Enter the following transactions in the Journal of Mr. Harry.

March 1 Harry started business with cash ₹ 1,50,000

- ” 3 Goods purchased for cash ₹ 50,000
- ” 4 Sold goods for cash ₹ 30,000
- ” 5 Goods purchased from Anush ₹ 20,000
- ” 7 Sold goods to Ramesh ₹ 15,000
- ” 8 Purchased furniture for cash ₹ 5,000
- ” 10 Paid cash to Anush ₹ 15,000
- ” 11 Bought goods from Raj for cash ₹ 27,000
- ” 13 Sold goods to Ashok on credit ₹ 12,000
- ” 16 Paid wages to Chandra ₹ 800
- ” 18 Interest received ₹ 250
- ” 22 Paid Rent ₹ 5,000
- ” 27 Received cash from Rajesh ₹ 13,000
- ” 29 Sold goods to Rajib for cash ₹ 6,00.
- ” 31 Paid salary to Mohanthy ₹ 2,300

Solution:**In the books of Harry****Journal Entries**

<i>Date</i>	<i>Particulars</i>	<i>LF</i>	<i>Debit</i>
	<i>Credit</i>		
Mar.1	Cash Account	Dr. 1,50,000	
2004	To Capital Account		1,50,000
	(Being Mr. Harry commenced business)		

NOTES	3	Purchases Account	Dr. 50,000	
		To Cash Account		50,000
		(Being purchased goods for cash)		
	4	Cash Account	Dr. 30,000	
		To Sales Account		30,000
		(Being sold goods for cash)		
	5	Purchases Account	Dr. 20,000	
		To Anush's Account		20,000
		(Being purchased goods from Anush on credit)		
	7	Ramesh's Account	Dr. 15,000	
		To Sales Account		15,000
		(Being sold goods on credit to Ramesh)		
	8	Furniture Account	Dr. 5,000	
		To Cash Account		5,000
		(Being bought furniture for cash)		
	10	Anush's Account	Dr. 15,000	
		To Cash Account		15,000
		(Being cash paid)		
	11	Purchases Account	Dr. 27,000	
		To Cash Account		27,000
		(Being goods purchased from Raj for cash)		
	13	Ashok's Account	Dr. 12,000	
		To Sales Account		12,000
		(Being goods sold on credit)		
	16	Wages Account	Dr. 800	
		To Cash Account		800
		(Being wages paid)		
	18	Cash Account	Dr. 250	
		To Interest Account		250
		(Being received interest)		
	22	Rent Account	Dr. 5,000	
		To Cash Account		5,000
		(Being rent paid)		
	27	Cash Account	Dr. 13,000	
		To Rajesh's Account		13,000
		(Being cash received from Rajesh)		

29	Cash Account	Dr. 6,000		NOTES
	To Sales Account		6,000	
	(Being sales for cash)			
31	Salary Account	Dr. 2,300		
	To Cash Account		2,300	
	(Being salary paid to Mohanthy)			
		3,51,350	3,51,350	

5.5 LEDGER

When the transactions of a business for a given period have been recorded in the Journal, the next step is to classify journal entries into account. This classification of journal entries is done in another book called the 'Ledger'. It must be clear by now that every transaction, after first being recorded in a book of original entry, finds its subsequent destination in the Ledger. It is in this book which is properly arranged, classified and condensed form of all the necessary information regarding the working of our business. After a certain period, if we want to know whether a particular account is showing a debit or credit it becomes very difficult. So, the ledger is designed to accommodate the various accounts maintained by a trader. It contains the final and permanent record of all the transactions in a duly classified form. A ledger book contains various accounts to which entries are made in the journal. The entries in the journal are posted or transferred to the appropriate accounts in the ledger periodically, say, weekly, fortnightly, monthly or quarterly depending upon the convenience and the requirements of the business, to know the exact position of each account on any particular date.

Meaning of Ledger

The term 'Ledger' is derived from the Dutch word 'Legger' which means to 'lie'. Ledger, therefore, means a book where the various accounts by (i.e., are 'kept'). A Ledger is a book in which all the accounts of a trader whether personal, or nominal are kept for record. In Ledger, one separate account is opened for each and every particular type of transaction. For every journal entry, one ledger account is to be debited and another ledger account is to be credited. Every Ledger account is divided into two sides. The left-side is known as the debit side and the right-side as the credit side. If the debit side of any account in the ledger is heavier than its credit side, the account is said to have a debit balance to the extent of such difference.

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If the credit side of any account is heavier than its debits, the difference is called a credit balance. Thus, Ledger is that book which can give a properly arranged and classified form of all the necessary information regarding the working of our business.

Definition of Ledger

According to **J.R. Batliboi**, “The Ledger is the chief book of accounts, and it is in this book that all the business transactions would ultimately find their place under their accounts in a duly classified form”.

According to **L.C. Croper**, “The book which contains a classified and permanent record of all the transactions of a business is called a ledger”.

According to **O.P. Gupta**, “Ledger is that principal book of accounts in which all the business transactions find their ultimate place in the shape of accounts in a classified form. This book supplies all the information regarding the working of a business”.

A ledger contains accounts for all the persons with whom the business deals, accounts for all the assets or things held by the business and accounts for all the expenses incurred and all the incomes earned by the business. It may be in the form of a bound register or cards or punched sheets in a loose leaf binder. In the ledger, each account is opened generally on a separate page or card or sheet.

5.6 FEATURES OF LEDGER

The main features of a ledger are as follows:

- (i) The ledger contains all the accounts like personal account, real account and nominal account.
- (ii) It is a permanent record of business transactions.
- (iii) It is a book of final entry. All business transactions are, first, recorded in the journal, and are, finally, entered in the ledger.
- (iv) It is an analytical record of transactions.
- (v) It is a secondary record, as the entries in the ledger are derived from the entries in the journal.

5.7 IMPORTANCE OF LEDGER

Ledger is very important book of accounts because it helps us in achieving the objectives of accounting. In the journal, transactions of the same nature may be found on different pages. As transactions of the same nature are found on

different pages of the journal, one cannot know easily from the journal the cumulative or net effect of transactions of the same nature on any particular date. But in Ledger all these transactions of the same nature will be recorded on one page or sheet. After journalising the accounting transactions and their posting into ledger, it becomes necessary to balance the accounts in the ledger.

The balance is done at periodic intervals, generally at the close of the financial year. To know easily the cumulative or net effect of transactions of the same nature; i.e, the exact position or balance of each account on any particular date, it becomes necessary to maintain the ledger, where transactions of the same nature can be brought together in one place. Hence, the ledger is called the 'Principal Book' and it is necessary for all the traders to prepare a Ledger.

NOTES

5.8 ADVANTAGES OF LEDGER

Some advantages of ledger are as follows:

- (i) It is only the book which gives a properly arranged, classified and condensed form of all the necessary information regarding the working of our business.
- (ii) It is a permanent record of all the transactions of a business.
- (iii) It helps to find out the main items of revenue expenses.
- (iv) It provides a means of easy reference of same nature.
- (v) In the ledger all the transactions of same nature will be recorded on one page only.
- (vi) It helps to prepare a final account.

5.9 STRUCTURE OF A LEDGER

Each ledger account is divided into two equal parts. The left hand side is known as the debit side and the right hand side as the credit side. This statement is prepared in 'T' shape, therefore, sometimes it is called a 'T' account. The structure of the ledger account is given below:

Ledger Account							
Dr.				Cr.			
Date	Particulars	JF	Amount	Date	Particulars	JF	Amount

NOTES

As shown above, each side of the account has four columns to record the necessary details of each transactions which has been explained as follows:

- (i) **Date:** Under this column, the date is recorded on which the transactions are entered. To keep the year on top and below the year, month and day of the transactions has to be written.
- (ii) **Particulars:** It is the second column, which contains two names of accounts one is to be debited and another one is to be credited. The debit entry shows the name of the account to be debited with the amount in the debit column.
- (iii) **Journal Folio or J.F:** Page number of Journal or Subsidiary books is referred in the folio column.
- (iv) **Amount Dr. (Debit):** In this column amount to be debited is recorded against the debit column.
- (v) **Amount Cr. (Credit):** In this column amount to be credited is recorded against the credit column.

5.10 PROBLEMS ON LEDGER

Illustration - 1

Enter the following transactions in the journal and Post them in Ledger.

January

2011	2	Furniture purchased for cash ₹ 20,000
	5	Parmesha owed ₹ 1,500. He sent a cheque which was paid into bank the same day for ₹ 1,450 in full settlement.
	9	Goods purchased for ₹ 16,000
	15	Sold goods for ₹ 25,000

Solution:

Journal Entries

<i>Date</i>	<i>Particulars</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
2011 Jan.2	Furniture Account Dr. To Cash Account (Being purchased furniture for cash)		20,000	20,000
5	Bank Account Dr.		1,450	
	Discount Account Dr.		50	

	To Parmesha's Account (Being amount received in full settlement from Parmesha)			1,500
9	Purchases Account Dr.		16,000	
	To Cash Account (Being purchased goods for cash)			16,000
15	Cash Account Dr.		25,000	
	To Sales Account (Being sold goods for cash)			25,000
			62,500	62,500

Ledger Accounts:**Cash Account**

Dr.				Cr.			
Date	Particulars	JF	Amount	Date	Particulars	JF	Amount
2011							
Jan.15	To Sales A/c		25,000	Jan.2	By Furniture A/c		20,000
31	To Balance c/d		11,000	9	By Purchases A/c		16,000
			36,000				36,000
				Feb.1	By Balance b/d		11,000

Furniture Account

Date	Particulars	JF	Amount	Date	Particulars	JF	Amount
Jan.2	To Cash A/c		20,000	Jan.			
				31	By Balance c/d		20,000
			20,000				20,000
Feb.1	To Balance b/d		20,000				

Bank Account

Date	Particulars	JF	Amount	Date	Particulars	JF	Amount
Jan 5	To Parmesha's A/c		1,450	Jan.			
				31	By Balance c/d		1,450
			1,450				1,450
Feb-1	To Balance b/d		1,450				

Discount Account

Date	Particulars	JF	Amount	Date	Particulars	JF	Amount
Jan 5	To Parmesha's A/c		50	Jan.			

		31	By Balance c/d	50
		50		50
Feb-1	To Balance b/d	50		

Purchases Account

<i>Date</i>	<i>Particulars</i>	<i>JF</i>	<i>Amount</i>	<i>Date</i>	<i>Particulars</i>	<i>JF</i>	<i>Amount</i>
9	To Cash A/c		16,000	Jan.			
				31	By Balance c/d		16,000
			16,000				16,000
Feb-1	To Balance b/d		16,000				

Sales Account

<i>Date</i>	<i>Particulars</i>	<i>JF</i>	<i>Amount</i>	<i>Date</i>	<i>Particulars</i>	<i>JF</i>	<i>Amount</i>
Jan.				31	By Cash A/c		25,000
31	To Balance c/d		25,000				
			25,000				25,000
				Feb.1	By Balance b/d		25,000

Illustration - 2

Prepare Capital Account for the following transactions:

- (i) Rajesh commenced business with Machinery ₹ 20,000, Furniture ₹ 15,000, and Cash ₹ 8,000
- (ii) During the year he introduced ₹ 12,000

Solution:

Capital Account

Dr.				Cr.			
<i>Sl.No.</i>	<i>Particulars</i>	<i>JF</i>	<i>Amount</i>	<i>Sl.No.</i>	<i>Particulars</i>	<i>JF</i>	<i>Amount</i>
				(i)	By Machinery A/c		20,000
				(i)	By Furniture A/c		15,000
				(i)	By Cash Account		8,000
	To Balance c/d		55,000	(ii)	By Cash Account		12,000
			55,000				55,000

Illustration - 3

From the following transactions prepare in the Personal Account of Mr. Anand and balance the amount at the end of each month.

2010 April

- 1 Sold goods to Mr. Anand ₹ 30,000
- 3 Received from Mr. Anand ₹ 24,550 and discount allowed him ₹ 50.
- 12 Mr. Anand bought goods ₹ 7,000
- 16 Received cash from Mr. Anand ₹ 5,400

- May -1 Balance from last month ₹ 6,000
 2 Sold goods to Mr. Anand ₹ 7,000
 20 Received cash from Mr. Anand ₹ 5,540 and discount allowed ₹ 60
 30 Received Cash 12,950 in full settlement of account ₹ 13,000

Solution:**Mr. Anand's Account**

<i>Date</i>	<i>Particulars</i>	<i>JF</i>	<i>Amount</i>	<i>Date</i>	<i>Particulars</i>	<i>JF</i>	<i>Amount</i>
2010				2010			
Apr.1	To Sales A/c		30,000	Apr.3	By Cash Account		24,550
12	To Sales A/c		7,000	3	By Discount A/c		50
				16	By Cash Account		5,400
				31	By Balance c/d		7,000
			37,000				37,000
May.1	To Balance b/d		7,000	May.20	By Cash Account		5,540
2	To Sales Account		7,000	20	By Discount A/c		60
30	To Balance c/d		4,600	30	By Cash Account		12,950
				30	By Discount A/c		50
			18,600				18,600

Illustration - 4

Is the following account correctly prepared? If not prepare it correctly.

Cash Account

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Furniture(Cash purchased)	2,500	By Balance b/d	15,700
To Drawings	3,500	By Shyam Sundar	
To Cash Sales	13,700	(Sale of goods on credit)	300
To Depreciation	2,000	By Salaries	10,200
To Commission (receive)	1,000	By Interest (receive)	4,000
To Credit Sales	10,000	By Payment of commission	3,100
To Balance c/d	6,400	By Discount allowed	200
		By Bad Dedts	200
		By Stationery	400
		By Bank (amount withdrawn from bank for office use)	5,000
	39,100		39,100

Solution:**Cash Account**

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Balance b/d	15,700	By Drawings	3,500
To Cash Sales	13,700	By Furniture(Cash urchased)	2,500
To Commission (receive)	1,000	By Salaries	10,200
To Interest (receive)	4,000	By Payment of commission	3,100
To Bank(amount withdrawn from bank for office use)	5,000	By Stationery	400
	39,400	By Balance c/d	19,700
			39,400
To Balance b/d	19,700		

Illustration - 5

Prepare a personal account of Mr. Ganesh from the following transactions.

2011 March

- 1 Debit balance of Ganesh Account ₹ 8,100
- 3 Bought goods from Ganesh ₹ 1,400
- 5 Goods worth ₹ 2,300 sold to him.
- 9 Paid to him ₹ 1,300
- 12 Returned goods to him ₹130
- 15 Ganesh bought goods from us ₹ 1,500
- 18 He returned goods ₹600
- 22 Received a bearer cheque from Ganesh for ₹ 1,000.
- 25 Goods worth ₹ 250 sent back to him
- 30 Ganesh sold goods to us worth ₹ 1,800

Solution:**Ganesh's Account**

Dr.				Cr.			
<i>Date</i>	<i>Particulars</i>	<i>JF</i>	<i>Amount</i>	<i>Date</i>	<i>Particulars</i>	<i>JF</i>	<i>Amount</i>
2011				2011			
Mar.1	To Balance b/d		8,100	3	By Purchases Account		1,400
5	To Sales Account		2,300	18	By Sales return Account		600
9	To Cash Account		1,300	30	By Purchases Account		1,800
12	To Purchase returns A/c		130				
28 th	A bearer cheque received from Balaji for ₹ 800						
29 th	Balaji received goods returned by Ganesh ₹ 270						
31 st	Received ₹ 8500 in settlement of ₹ 8,700 from Balaji.						

15	To	Sales Account	1,500			
22	To	Bank Account	1,000			
25	To	Sales Account	250	31	By	Balance c/d
			14,580			10,780
						14,580
Apr.1	To	balance b/d	10,780			

Illustration - 6

Prepare a personal account of Varun from the following transactions in the book of Ganesh.

2011 March

- 1 Debit balance of Varun ₹ 10,050
- 5 Bought from varun ₹ 1,500
- 7 Cheque issued to Varun ₹ 1,800
- 9 Sold to Varun ₹ 3,500
- 12 Ganesh sold goods to Varun ₹ 1600
- 14 Varun sold goods to Ganesh ₹ 900
- 20 Received cheque from Varun ₹ 1,800
- 24 Varun claimed an allowance of ₹ 300 for damaged goods.
- 28 Varun received goods returned by Ganesh ₹ 450

Solution:**Varun's Account**

Dr.				Cr.			
Date	Particulars	JF	Amount	Date	Particulars	JF	Amount
2011				2011			
Mar.1	To Balance b/d		10,050	5	By Purchases A/c		1,500
7	To Bank Account		1,800	14	By Purchases A/c		900
9	To Sales Account		3,500	20	By Cash Account		1,800
12	To Sales Account		1,600	24	By Sales return A/c		300
28	To Purchase returns A/c		450	31	By Balance c/d		12,900
			17,400				17,400
Apr.1	To Balance b/d		12,900				

Illustration - 7

Prepare the Personal A/c of Mr. Balaji from the following transactions in the books of Ganesh.

2002 Mar. 1st Debit balance of Balaji's A/c ₹ 8200

- 4th Bought goods from Balaji ₹ 1500
- 7th Cheque of ₹ 2,000 issued to Balaji
- 10th Goods sold to Balaji ₹ 1,200
- 13th Balaji sold goods to Ganesh ₹ 800
- 16th Received an account payee cheque from Balaji ₹ 1200

- 20th Goods worth ₹ 230 returned to him
 24th Balaji bought goods from Ganesh ₹ 1400
 26th Balaji claimed an allowance of ₹ 300 for damaged goods.

Solution:

Dr.				Mr. Balaji's Account				Cr.	
Date	Particulars	JF	Amount	Date	Particulars	JF	Amount		
2002				2002					
Mar.1	To Balance b/d		8,200	Mar.4	By Purchases A/c		1,500		
7	To Bank A/c		2,000	13	By Purchases A/c		800		
10	To Sales A/c		1,200	16	By Cash A/c		1,200		
20	To Purchases return A/c		230	26	By Sales returns A/c		300		
24	To Sales A/c		1,400	28	By Cash A/c		800		
29	To Purchases return A/c		270	31	By Cash A/c		8,500		
					31 By Discount A/c		200		
			13,300				13,300		

5.11 SUMMARY

A journal is a chronological record of transactions entered into by a business. It is the book in which transactions are recorded first of all according to double entry system. A journal may be defined as a book containing a day-to-day record of transactions. It is also called the book of original entry. A journal entry is recorded for each transaction of accounting book. Thus, the book in which all the business transactions are entered systematically for the first time is called journal.

Transactions are normally recorded in a general journal. Specialized journal may be used to record receive transactions. Special journals accomplish the same purpose as a general journal, but they save time in recording similar transactions. Documents on the basis of which entries or transactions are recorded in the books of accounts are known as source documents.

The term 'Ledger' is derived from the Dutch word 'Legger' which means to 'lie'. Ledger, therefore, means a book where the various accounts by (i.e., are 'kept'). A Ledger is a book in which all the accounts of a trader whether personal, or nominal are kept for record. In Ledger, one separate account is opened for each and every particular type of transaction.

Ledger is very important book of accounts because it helps us in achieving the objectives of accounting. In the journal, transactions of the same nature may be found on different pages. As transactions of the same nature are found on different

pages of the journal, one cannot know easily from the journal the cumulative or net effect of transactions of the same nature on any particular date. But in Ledger all these transactions of the same nature will be recorded on one page or sheet. After journalising the accounting transactions and their posting into ledger, it becomes necessary to balance the accounts in the ledger.

NOTES

5.12 GLOSSARY

- (a) **Journal:** A journal is a chronological record of transactions entered into by a business. It is the book in which transactions are recorded first of all according to double entry system. A journal may be defined as a book containing a day-to-day record of transactions.
- (b) **Journal Entry:** A journal entry is recorded for each transaction of accounting book. Thus, the book in which all the business transactions are entered systematically for the first time is called journal.
- (c) **Transactions:** Transactions are normally recorded in a general journal. Specialized journal may be used to record receive transactions.
- (d) **Ledger:** A Ledger is a book in which all the accounts of a trader whether personal, or nominal are kept for record. In Ledger, one separate account is opened for each and every particular type of transaction.

5.13 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What is a Journal?
2. What do you mean by Journalising?
3. What is meant by term credit?
4. What is meant by term debit?
5. What is simple journal entry?
6. What is Narration?
7. What do you mean by trade discount?
8. Give the meaning of cash discount.
9. What is a Ledger?

NOTES

(B) Extended Answer Questions

1. Explain importance of Journal.
2. Enumerate the steps in Journalising.
3. How is an opening entry recorded in a Journal?
4. Explain the need and importance of ledger.
5. Explain the procedure for balancing a Ledger Account.

(C) True or False

1. Ledger is a chronological record of transactions entered into by a business.
2. Transactions are normally recorded in a general journal.
3. A Ledger is a book in which all the accounts of a trader whether personal, or nominal are kept for record.
4. In Ledger, one separate account is opened for each and every particular type of transaction.

(D) Multiple Choice Questions

1. What may be defined as a book containing a day-to-day record of transactions?
(a) A journal (b) Ledger
(c) Trial Balance (d) Balance sheet
2. What is recorded for each transaction of accounting book?
(a) Ledger (b) A journal entry
(c) Balance Sheet (d) All the above
3. What is a book in which all the accounts of a trader whether personal, or nominal are kept for record?
(a) A journal (b) Ledger
(c) Trial Balance (d) Balance sheet

(E) Fill in the Blanks

1. A journal is a chronological record of transactions entered into by a
2. Transactions are normally recorded in a general.....
3. is a book in which all the accounts of a trader whether personal, or nominal are kept for record.

4. In Ledger, one separate account is opened for each and every particular type of.....

NOTES

5.14 KEY TO CHECK YOUR ANSWER

- (C) 1. False, 2. True, 3. True, 4. True
(D) 1. (a), 2. (b), 3. (b)
(E) 1. Business, 2. Journal, 3. A Ledger, 4. Transaction

5.15 BIBLIOGRAPHY

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5.16 SUGGESTED READINGS

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NOTES

5.17 TERMINAL QUESTIONS

1. Why is closing and balancing of Account necessary? What is the procedure of closing and balancing the Personal, Real and Nominal Accounts?

UNIT 6 TRIAL BALANCE

Structure:

- 6.1 Introduction
- 6.2 Meaning of Trial Balance
- 6.3 Advantages and Limitations of Trial Balance
- 6.4 Procedure of Preparing Trial Balance
- 6.5 Summary
- 6.6 Glossary
- 6.7 Check Your Progress (Multiple Choice/Objective Type Questions)
- 6.8 Key to Check Your Answer
- 6.9 Bibliography
- 6.10 Suggested Readings
- 6.11 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Trial Balance
- Preparation of Trial Balance

NOTES

6.1 INTRODUCTION

A trial balance is a list of all the general ledger accounts (both revenue and capital) contained in the ledger of a business. This list will contain the name of each nominal ledger account and the value of that nominal ledger balance. Each nominal ledger account will hold either a debit balance or a credit balance. The debit balance values will be listed in the debit column of the trial balance and the credit value balance will be listed in the credit column.

6.2 MEANING OF TRIAL BALANCE

When all Journal entries have been posted into Ledger, the every transactions have been entered twice in the Ledger. This statement is called the Trial Balance. If the accounts are properly maintained, then no error is committed in totalling. Thus, Trial balance may be the total balance of a list of debit and credit of all the Ledger Accounts which prepared on any particular period.

Definition of Trial Balance

According to **J.R. Batliboi**, “Trial Balance is a statement, prepared with the debit and credit balance of ledger account to test the arithmetical accuracy of the books”.

According to **M.S. Gosave**, “Trial Balance is a statement containing the balances of all the ledger accounts as at any given date, arranged in the form, of debit and credit columns, placed side by side and prepared with the object of checking the arithmetical accuracy of ledger posting”.

According to **Spicer and Pegler**, “A Trial balance is a list of all balances standing of the ledger accounts and cash book of a concern at any given date”.

Importance of Trial Balance

The Trial balance is prepared based on the fundamental principle of double entry book keeping i.e. for every debit in one account, there is corresponding credit in some other Accounts. The transaction have been recorded as per the principle of double entry when the Trial balance tallies. When it does not tally it reveals the presence of errors.

Trial balance takes all balances whether of Real, Nominal or Personal accounts. Tallying the Trial balance can not give guarantee that double entry book-keeping is absolutely correct, though some reliance can be put on it. It does not include stock in hand at the end of the period. All adjustments is necessary to be done at the period are given outside the trial balances. Thus, it is a schedule of list of balances, both debit and credit, extracted from the accounts in the ledger including the cash and bank balances from the cash book.

Objectives of Trial Balance

NOTES

The preparation of Trial balance is to achieve the following objectives:

- (i) To check the arithmetical accuracy of ledger.
- (ii) To have a proof that the double entry of each transactions has been properly recorded.
- (iii) To give the balance of all accounts in the ledger in one place.
- (iv) To prepare the Profit & Loss Account and Balance Sheet of the business.
- (v) To serve as an aid to management.

6.3 ADVANTAGES AND LIMITATIONS OF TRIAL BALANCE

Advantages:

The advantages of Trial Balance follows are as:

- (a) Trial balance is a connecting link between ledger accounts and final accounts.
- (b) It helps the reduction of errors which took place while posting the subsidiary journals to ledger.
- (c) Trial balance proves that all the entries in the journal have been correctly posted into the ledger.
- (d) It is used as a base for the preparation of financial statement or final account.
- (e) It helps to rectify the errors before preparation of final account.
- (f) It is a check of accuracy of the book of account.

Limitations:

The limitations of Trial Balance are as follows:

- (a) Trial balance can be prepared only by those who are maintaining double entry accounting book system.
- (b) This system can not be adopted by small business concern because it is very costly.
- (c) If trial balance is not made correctly then the final account prepared will not reflect the true and correct view of business concern.
- (d) Trial balance is not as conclusive proof of the accuracy of the books of account.

NOTES

6.4 PROCEDURE OF PREPARING TRIAL BALANCE

A Trial balance is a list of debit and credit totals, or a list of debit and credit balances, of all the ledger accounts prepared on any particular date to verify whether the entries in books of account are arithmetically correct.

Procedures of preparing Trial Balance:

- **Equal balance of debit total and credit total:** In this step the trial balance is prepared with the help of debit total and credit total in ledger account.
- **Debit balance and credit balance:** In this step the debit balances of the various ledger accounts are entered in the debit column of the trial balance, and the credit balances of the various ledger accounts are entered in the credit column of the trial balance.
- **Combined procedure:** In this step, the trial balance is prepared with the help of the debit totals and credit totals as well as the debit balances and credit balances of the various ledger accounts.
- **The balance of debit total and credit total but exceeding closed accounts:** In this step, the trial balance is prepared like the first method with the help of the total debits and total credits. But the total debits and total credits of only those ledger accounts which are not closed and which show balances are entered in the trial balance.

Structure of Trial Balance

<i>Item No.</i>	<i>Particulars</i>	<i>LF</i>	<i>Debit (₹)</i>	<i>Credit (₹)</i>

Errors Disclosed by Trial Balances

- Posting of wrong amount to a ledger account
- Wrong totalling of subsidiary books.
- Items omitted to be posted from a subsidiary book into ledger.
- Omission of balance of an account in the Trial balance.
- Posting on the wrong side of the ledger account.
- Balance of same account wrongly entered and written on the wrong side of a Trial balance.

Errors Not Disclosed by Trial Balance**NOTES**

Posting an item on the correct side but in the wrong account: Posting an item to wrong account but on the correct side. For instance, if a purchase of ₹ 500 from Saha has been credited to Pandey, instead of Saha and this error will not affect the agreement of Trial Balance. Thus, Trial Balance will not detect such an error.

Writing the wrong amount in the subsidiary books: If an invoice for ₹ 528 is entered in Sales Book as ₹ 682, the Trial Balance will come out correctly, since the debit and credit have been recorded as ₹ 682. The arithmetical accuracy is there but in fact there is an error.

Omission of an entry altogether in a subsidiary book: When two aspects debit or credit of a transaction is omitted to record in journal, then they are also not posted to ledger and trial balance. A trial balance is effected by the equal amount.

Errors of principle: An error of principle is an error which violets the fundamentals of book-keeping. In other words, such errors are committed when fundamental principles of book-keeping and accountancy are not followed by the accounting staff wrong allocation of expenditure between capital and revenue excess or inadequate provision for depreciation, over or under valuation of stock, furniture purchases is recorded in purchase account etc. are errors of principles.

Compensating errors: When an error committed previously has been neutralized by another error committed later on, such error is called compensating error. This type of error does not affect the trial balance. Example; If one account in the ledger is debited with ₹ 500 less and another account in the ledger is credited ₹ 500 less, these errors cancel themselves. That is, one error is neutralized by similar error on the opposite side.

Illustration - 1

Prepare a Trial balance form the following:

Sundry Debtors	8,000
Sundry Creditors	6,000
Capital	50,000
Cash in hand	4,000
Cash at Bank	35,000
Motor Van	20,000
Furniture & Fixture	2,500
Purchase	5,000
Sales Returns	250
Wages	150
Stock on hand	12,200
Sales	35,000
Purchase Returns	150
Discount	150
Commission	300
Gas & Water	600
Salaries	2,000
Bills Receivable	1,000

Solution:**Trial Balance**

<i>Name of Account</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
Sundry Debtors		8,000	
Sundry Creditors			6,000
Capital			50,000
Cash in hand		4,000	
Cash at Bank		35,000	
Motor Van		20,000	
Furniture & Fixture		2,500	
Purchase		5,000	
Sales Return		250	
Wages		150	
Stock on hand		12,200	
Sales			35,000
Purchase return			150
Discount (Dr.)		150	
Commission		300	
Gas & Water		600	
Salaries		2,000	
Bills Receivable		1,000	
		91,150	91,150

Illustration - 2

Re-write the following Trial balances to correct the same Trial balance on 31st March 2010.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
Wages	2,680	Capital	10,000
Purchase	12,490	Sales	31,080
Salaries	520	Rent paid	500
Carriage	50	Discount received	120
Buildings	12,010	Light charges	160
Bank overdraft	470	Suppliers	800
Cash in hand	60	Opening stock	9,260
Customers	1,490	Furniture	3,250
	29,770		55,170

Solution:**Trial Balance**

<i>Ledger Accounts</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
Wages		2,680	
Purchases		12,490	
Salaries		520	

Carriage	50	
Building	12,010	
Cash in hnd	60	
Bank overdraft		470
Customers	1,490	
Capital		10,000
Sales		31,080
Rent paid	500	
Discount received		120
Light charges	160	
Suppliers		800
Stock	9,260	
Furniture	3,250	
	42,470	42,470

Illustration - 3

The following balance have been extracted from the books of M/s DSSBL Pvt. Ltd. Kolkata, on March 2011. You are to draw out a Trial balance.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
Capital	11,60,000	Purchase	2,25,000
Cash balance	1,20,000	M/s DTTC	3,00,000
M/s CLTS (Cr.)	1,00,000	General expenses	75,000
Furniture	80,000	Land & Building	1,30,000
Goods	45,000	Return inwards	25,000
Drawings	75,000	Advertisement	60,000
Sundry debtors	1,45,000	Salaries	35,000
Commission received	3,000	Discount (Credit)	2,000

Solution:**Trial Balance**

<i>Ledger Accounts</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
Capital			11,60,000
Cash balance		1,20,000	
M/s CTLS (credit)			1,00,000
Furniture		80,000	
Goods		45,000	
Drawing		75,000	
Sundry debtors		1,45,000	
Salaries		35,000	
Commission received			3,000
Discount (credit)			2,000

Purchase	2,25,000	
M/s DTTC (Dr)	3,00,000	
General expenses	75,000	
Land & Building	1,30,000	
Return inwards		25,000
Advertisement	60,000	
	12,90,000	12,90,000

Illustration - 4

From the following ledger balances, prepare Trial balance as on 31st December 2010.

<i>Particulars</i>	<i>Amount</i>
Cash in hand	1,700
Capital	23,000
Furniture	13,000
Telephone Charge	1,800
Sales	15,500
Advertisement	6,800
Purchases	10,000
Office Equipment	1,500
Creditors	34,600
Drawing	1,450
Discount	100
Salaries	1,200
Rent	3,600
Discount Allowed	50
Commission earned	300
Sundry Debtors	33,400
Interest on Investment	1,000

Solution:**Trial Balance as on 31st December 2010**

<i>Ledger Accounts</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
Cash in hand		1,700	—
Capital		—	23,000
Furniture		13,000	—
Telephone Charge		1,800	—
Sales		—	15,500
Advertisement		6,800	—
Purchases		10,000	—

Office Equipment	1,500	
Creditors	—	34,600
Drawing	1,450	—
Discount	—	100
Salaries	1,200	—
Rent	3,600	—
Discount Allowed	50	—
Commission earned	—	300
Sundry Debtors	33,400	—
Interest on Investment	—	1,000
	74,500	74,500

Illustration - 5

From the following ledger balances, prepare a Trial balance as on 31st January 2011.

<i>Particulars</i>	<i>₹</i>
Capital	51,000
Commission received	800
Furniture	4,000
Manufacturing expenses	600
Machinery	12,000
Purchases	26,000
Sales	1,72,000
Buildings	1,20,000
Opening Stocks	14,000
Wages	10,000
Factory Rent	3,000
Advertisement	50,000
Salaries	10,000
Carriage inwards	800
Carriage outwards	1,400
Discount allowed	800
Discount received	400
Bad and doubtful debts reserve	800
Sundry debtors	45,000
Sundry creditors	91,200
Cash at Bank	12,000
Cash in hand	1,600

Solution:**Trial Balance as on 31st Jan. 2011**

<i>Details</i>	<i>LF</i>	<i>Amount</i>	
		<i>Dr.</i>	<i>Cr.</i>
Capital			51,000
Commission received			800
Furniture		4,000	
Manufacturing expenses		600	
Machinery		12,000	
Purchases		26,000	
Sales			1,72,000
Buildings		1,20,000	
Opening stocks		14,000	
Wages		10,000	
Factory Rent		8,000	
Advertisement		50,000	
Salaries		10,000	
Carriage inwards		800	
Carriage outwards		1,400	
Discount allowed		800	
Discount received			400
Bad debt and doubtful debt reserve			800
Sundry Debtors		45,000	
Sundry Creditors			91,200
Cash at Bank		12,000	
Cash in hand		1,600	
		3,16,200	3,16,200

Illustration - 6

From the following balances, prepare a Trial Balance.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
Drawings	2,000	Sales	68,000
General expenses	4,740	Purchases	40,000
Buildings	20,000	Bank Overdraft	10,000
Stock	16,540	Capital	?
Wages	8,515		
Debtors	6,280		
Creditors	2,500		
Bad Debts	550		
Loan to Ravi	7,880		

Solution:**Trial Balance**

<i>Heads of Accounts</i>	<i>LF</i>	<i>Debit (₹)</i>	<i>Credit (₹)</i>
Drawings		2,000	—
General Expenses		4,740	—
Buildings		20,000	—
Stock		16,540	—
Wages		8,515	—
Debtors		6,280	—
Creditors		—	2,500
Bad debts		550	—
Loan to Ravi		7,880	—
Sales		—	68,000
Purchases		40,000	—
Bank overdraft		—	10,000
Capital (balancing figure)		—	26,005
		1,06,505	1,06,505

Illustration - 7

Prepare Trial Balance from the following ledger balances: Motor vehicle ₹ 10,000, Cash 5,600, Drawings 6,200, Bank overdraft ₹ 7,500, Purchase Return 700, Debtors 13,200, Bad Debts 1,200, Stock 6,400, Creditors 7,700, Capital 32,800, Sales 14,400, Goodwill 12,000, Purchases 8,800, Rent from tenant 3,500, Stationary 1,500, Depreciation 1,700.

Solution:**Trial Balance**

<i>Ledger Accounts</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
Motor vehicles		10,000	—
Cash		5,600	—
Drawings		6,200	—
Bank Overdraft		—	7,500
Purchase returns		—	700
Debtors		13,200	—
Bad debts		1,200	—
Stock		6,400	—
Creditors		—	7,700
Capital		—	32,800
Sales		—	14,400

Goodwill	12,000	–
Purchases	8,800	–
Rent from tenants	–	3,500
Statement	1,500	–
Depreciation	1,700	–
	66,600	66,600

Illustration - 8

From the following information prepare a Trial balance as on 31st March 2011.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
Capital Account	12,500	Bank (Cr. Balance)	2,850
Sales	15,450	Purchase Returns	125
Furniture & Fittings	640	Commission (Cr.)	375
Motor Car	6,250	Sales Return	200
Buildings	7,500	Advertisement	250
Total Debtors	3,800	Interest Account (Dr.)	118
Total Creditors	2,500	Cash Balance	650
Bad Debts	125	Insurance & Tax	1,250
Stock on 1-4-2010	3,460	Salaries	4,082
Purchases	5,475		

Solution:**Trial Balance**

<i>Details</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
Capital Account			12,500
Sales			15,450
Furniture & Fittings		640	
Motor Car		6,250	
Buildings		7,500	
Total Debtors		3,800	
Total Creditors			2,500
Bad Debts		125	
Stock on 1-4-2010		3,460	
Purchases		5,475	
Bank (Cr. Balance)			2,850
Purchase Returns			125
Commission (Cr.)			375
Sales Return		200	
Advertisement		250	
Interest Account (Dr.)		118	
Cash Balance		650	

Insurance & Tax	1,250	
Salaries	4,082	
Total	33,800	33,800

Illustration - 9

The following Trial balance has been prepared wrongly. You are asked to prepare the trial balance correctly.

<i>Details</i>	<i>LF</i>	<i>(Amt.)Dr.</i>	<i>(Amt.)Cr.</i>
Capital		88,000	
Machinery			80,000
Stock			40,000
Debtors		32,000	
Creditors			48,000
Sales			1,76,000
Interest on investment			4,000
Purchases		1,12,000	
Bank overdraft		56,000	
Manufacturing expenses			56,000
Loan from Babu		56,000	
Carriage inward		4,000	
Carriage outward			8,000
Purchases return		16,000	
Wages		32,000	
Establishment expenses		48,000	
Sales return		—	32,000
Discount received		4,800	
Commission earned		3,200	
Cash in hand		—	8,000
		4,52,000	4,52,000

Solution:**Trial Balance**

<i>Details</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
Capital		—	88,000
Machinery		80,000	—
Stock		40,000	—
Debtors		32,000	—
Creditors		—	48,000
Sales		—	1,76,000
Interest on investment		—	4,000
Purchases		1,12,000	—

Bank overdraft	–	56,000
Manufacturing expenses	56,000	–
Loan from Babu	–	56,000
Carriage inward	4,000	–
Carriage outward	8,000	–
Purchases Return	–	16,000
Wages	32,000	–
Establishment expenses	48,000	–
Sales Return	32,000	–
Discount Received		4,800
Commission earned		3,200
Cash in hand	8,000	–
	4,52,000	4,52,000

Illustration - 10

RS Bank a client of yours asks you to trial balance for the year ending 31st March 2010. On which the closing stock was valued at ` 5,740. You are requested to prepare the trial balance correctly.

Trial Balance of RS Bank as on 31st March 2010.

<i>Details</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
RS Bank's capital			15,560
RS Bank's drawing		5,640	
Lease hold premises		7,410	
Sales			27,560
Due from customers			5,300
Purchase		12,680	
Purchase returns		2,640	
Loan from Bank			2,500
Creditors		5,280	
Trade & Office expenses		7,840	
Cash at Bank		1,420	
Bills payable		1,000	
Salaries		5,980	
Stock (1 st April 2009)			2,640
Rent		4,650	
Sales Returns			980
		54,540	54,540

Solution:**Amended Trial Balance**

<i>Details</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
RS Bank's capital			15,560
RS Bank's drawings		5,640	
Sales			27,560
Due from customers		5,300	
Purchase		12,680	
Purchase returns			2,640
Loan from bank			2,500
Creditors			5,280
Trade & office expense		7,840	
Cash at bank		1,420	
Bills payable			1,000
Salaries		5,980	
Stock (1 st April)		2,640	
Rent		4,650	
Sales returns		980	
Lease hold premises		7,410	
		54,540	54,540

6.5 SUMMARY

Trial balance is the statement of balance of all accounts in the ledger prepared to identify arithmetical accuracy of the books of account. After all the transactions of a particular period are recorded either in the single journal or in various subsidiary books and posted their respective accounts in the ledger. It is a method of ascertaining that the all entries in the books of accounts are correctly made. In this sense trial balance is a list of debit and credit balance where all ledger accounts prepared on a particular period. A Trial balance has been defined as “Tri-all balance of ledger account to verify their arithmetical accuracy.”

The Trial balance is prepared based on the fundamental principle of double entry book keeping i.e. for every debit in one account; there is corresponding credit in some other Accounts. The transaction has been recorded as per the principle of double entry when the Trial balances tallies. When it does not tally it reveals the present of errors.

Trial balance takes all balances whether of Real, Nominal or Personal accounts. Tallying the Trial balance cannot give guarantee that double entry book-keeping is absolutely correct, though some reliance can be put on it. It does not include stock

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in hand at the end of the period. All adjustments necessary to be done at the period are given outside the trial balances. Thus, it is a schedule of list of balances, both debit and credit, extracted from the accounts in the ledger including the cash and bank balances from the cash book.

A Trial balance is a list of debit and credit totals, or a list of debit and credit balances, of all the ledger accounts prepared on any particular date to verify whether the entries in books of account are arithmetically correct.

6.6 GLOSSARY

- (a) **Trial balance:** Trial balance is the statement of balance of all accounts in the ledger prepared to identify arithmetical accuracy of the books of account. After all the transactions of a particular period are recorded either in the single journal or in various subsidiary books, and posted their respective accounts in the ledger.
- (b) **Error of Omission:** An error of omission is when a transaction is completely omitted from the accounting records. As the debits and credits for the transaction would balance, omitting it would still leave the totals balanced.
- (c) **Error of reversal:** An error of reversal is when entries are made to the correct amount, but with debits instead of credits, and vice versa.
- (d) **Error of commission:** An error of commission is when the entries are made at the correct amount, and the appropriate side (debit or credit), but one or more entries are made to the wrong account of the correct type.
- (e) **Error of principle:** An error of principle is when the entries are made to the correct amount, and the appropriate side (debit or credit), as with an error of commission, but the wrong type of account is used.
- (f) **Compensating errors:** Compensating errors are multiple unrelated errors that would individually lead to an imbalance, but together cancel each other out.

6.7 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What do you mean by trial balance?
2. What is Error of Omission?

3. What is Error of reversal?
4. What is Error of commission?
5. What is Error of principle?

NOTES**(B) Extended Answer Questions**

1. Explain the Procedures of preparing trial balance.
2. Explain the errors which are disclosed by the trial balance.
3. What are the advantages and disadvantages of trial balance?

(C) True or False

1. Trial balance is the statement of balance of all accounts in the ledger prepared to identify arithmetical accuracy of the books of account.
2. An error of Commission is when a transaction is completely omitted from the accounting records.
3. An error of reversal is when entries are made to the correct amount, but with debits instead of credits, and vice versa.
4. An error of commission is when the entries are made at the correct amount, and the appropriate side (debit or credit), but one or more entries are made to the wrong account of the correct type.
5. An error of principle is when the entries are made to the correct amount, and the appropriate side (debit or credit), as with an error of commission, but the wrong type of account is used.

(D) Multiple Choice Questions

1. What is the statement of balance of all accounts in the ledger prepared to identify arithmetical accuracy of the books of account?
(a) Ledger (b) Trial balance
(c) Journal (d) All the above
2. When a transaction is completely omitted from the accounting records, it is called as.....
(a) An error of omission (b) An error of reversal
(c) An error of commission (d) An error of principle
3. When entries are made to the correct amount, but with debits instead of credits, and vice versa, it is called as.....
(a) An error of omission (b) An error of reversal
(c) An error of commission (d) An error of principle

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4. When the entries are made at the correct amount, and the appropriate side (debit or credit), but one or more entries are made to the wrong account of the correct type, it is called as.....
- (a) An error of omission (b) An error of reversal
(c) An error of commission (d) An error of principle

(E) Fill in the Blanks

-is the statement of balance of all accounts in the ledger prepared to identify arithmetical accuracy of the books of account.
- An error of omission is when a transaction is completely omitted from the.....
-is when entries are made to the correct amount, but with debits instead of credits, and vice versa.
-is when the entries are made to the correct amount, and the appropriate side (debit or credit), as with an error of commission, but the wrong type of account is used.

6.8 KEY TO CHECK YOUR ANSWER

(C) 1. True, 2. False, 3. True, 4. True, 5. True

(D) 1. (b), 2. (a), 3. (b), 4. (c)

(E) 1. Trial balance, 2. Accounting records, 3. An error of reversal, 4. An error of principle

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6.10 SUGGESTED READINGS

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6.11 TERMINAL QUESTIONS

Conceptual Questions

1. What do you mean by trial balance?
2. State the three objectives of trial balance.
3. Name the five errors, which are not disclosed by trial balance.
4. How is trial balance prepared?
5. State the various method of preparing trial balance.

Analytical Questions

1. Explain the Procedure of preparing trial balance.
2. Explain the errors which are disclosed by the trial balance.
3. What are the advantages and disadvantages of trial balance?

Essay Type Questions

1. Define Trial balance. Discuss importance, limitations and methods of preparing a trial balance.

2. Explain the errors which are disclosed and not disclosed by the trial balance?

PRACTICAL QUESTIONS

Q-1. Re-write the following Trial balances correctly for 31st March 2011.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
Wages	10,720	Capital	4,000
Salaries	2,080	Sales	1,24,320
Carriage	200	Discount received	480
Building	48,040	Rent Paid	2,000
Bank Overdraft	1,880	Light Charges	640
Cash in hand	240	Suppliers	32,000
Customers	5,960	Opening stock	37,040
		Furniture	13,000

Q-2. Habib Bank a client of yours with whom Book -keeping is not a strong point, asked you to Audit the account for the year ending 31st December 2010 on which date the closing stock was valued at ₹ 28,700 on the basis of your audit. The Bank furnishes you the following statement.

Trial Balance as on 31st December 2010

<i>Details</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
Habib Bank's Capital			44,800
Habib Bank's drawings		28,200	
Lease hold premises		37,050	
Sales			1,37,800
Due from customer			26,500
Purchase		63,400	
Purchase return		13,200	
Cash from Bank			33,000
Creditors			12,500
Trade and office expenses	26,400		
Cash at bank	39,200		
Bill payable	7,100		
Salaries	5,000		
Stock (1st January)	29,900		
Rent			13,200
Returns	23,250	4,900	
	2,72,700	2,72,700	

If you don't approve this statement amend it.

Q-3. From the following Balance prepare Trial Balance of Mr. Sawpon as on 31st March 2010.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
Salaries	4,106	Purchase	33,189
Mr. Sawpon Capital	1,50,000	Land and Buildings	55,000
Plant and Machinery	85,000	Furniture and Fixtures	2,500
Motor Vans	15,750	Bills Receivable	4,000
Factory wages	5,000	General expenses	12,200
Salaries to staff	4,500	Rent and Taxes	1,700
Lighting and Power	900	Coal and Fuel	600
Trade expenses	575	Commission	2,700
Duty and Clearing charges	1,260	Stock on 1st April 2004	50,450
Purchases	96,000	Sales	1,65,000
Returns inwards	1,800	Returns outwards	2,100
Bank charges	125	Travelling expenses	3,750
Advertising	2,115	Repairs to Plant	1,070
Loan from Jai Gopi	25,000	Interest on loan	960
Cash at Bank	6,400	Cash on hand	300
Petty cash balance	75	Mr. Sawpon's Drawings	6,000
Sundry Debtors	85,420	Sundry Creditors	88,650

Q-4. From the following list of balances extracted from the books of Ravila, prepare a Trial balance as on 31st March, 2010.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
Capital	28,810	Bills Receivable	10,000
Drawings	3,000	Salaries	4,000
Free hold premises	11,600	Bank Loan	4,800
Purchases	63,000	Sales	85,000
Sundry Debtors	13,500	Stock (1st April 2004)	20,000
Sundry Creditors	8,500	Bills payable	6,850
Furniture and Fittings	5,000	Carriage on purchases	300
General expenses	3,250	Wages	1,570
Returns inward	900	Bank Charges	300
Postage and Stationery	250	Carriage on sales	350
Discount allowed	840	Discount received	280
Cash at Bank	2,400	Cash in hand	480

Q-5. From the following balances prepare a Trial balances of Robin as on 31st March 2010.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
Furniture	20,000	Stationery	500
Wages	1,500	Interest on loan	200
Opening stock	25,000	Drawings	1,32,600
Salaries	7,000	Capital	3,00,000
Purchase	2,00,000	Machinery	1,20,000
Sales	2,40,000	Postage	300
Sundry Debtors	10,000	Power and Fuel	1,200
Sundry Creditors	15,000	Trade Expenses	500
Bills Receivable	41,000	Bad debts	200
Reserve for doubtful debts	2,000	Bills Payable	3,000

Q-6. From the following prepare a Trial balance as on 31st March 2011.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
Capital	80,00,000	Discount allowed	4,000
Debtors	47,85,000	Sales return	45,000
Drawings	32,60,000	Sales	50,69,000
Bad debts	1,00,000	Machinery	36,00,000
Bills Payable	2,10,000	Trade Expenses	30,000
Creditors	20,25,000	Bank overdraft	1,57,000
Purchase	30,87,000	Purchase Return	35,000
Stock	2,45,000	Rent	36,000
Cash	1,21,000	Salary	85,000
Outstanding Expense	1,27,000	Stationery	4,58,000
Reserve for bad debts	2,25,000		

UNIT 7

FINAL ACCOUNTS

Structure:

- 7.1 Introduction
- 7.2 Trading Account
- 7.3 Profit and Loss Account
- 7.4 Balance Sheet
- 7.5 Common adjustments in Final Accounts
- 7.6 Practical Problems on Final Accounts
- 7.7 Summary
- 7.8 Glossary
- 7.9 Check Your Progress (Multiple Choice/Objective Type Questions)
- 7.10 Key to Check Your Answer
- 7.11 Bibliography
- 7.12 Suggested Readings
- 7.13 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Preparation of Profit and Loss Account
- Preparation of Balance Sheet with Adjustment Entries

NOTES

7.1 INTRODUCTION

The final accounts are primarily prepared for ascertaining the operational result and the financial position of the business. These are prepared with the help of Trial Balance. The Profit and Loss Account is prepared for ascertaining whether the business earned profit or incurred loss during a particular period of time called accounting period. Having ascertained the operational results, i.e., profit or loss by preparing the Profit & Loss Account, one final account still remains to be prepared is the Balance Sheet. The Balance Sheet is primarily prepared to know the financial position of the business.

7.2 TRADING ACCOUNT

Trading account is the outcome of Trial Balance. The debit balances of Trial Balance would represent either **Assets** or **Losses**, and the credit balances either Liabilities or Gains. Trading account is prepared to know the trading results, how much Gross Profit or Gross Loss derived in business concern for a given particular period.

According to **J.R. Batliboi**, “The trading account shows the results of buying and selling of goods. In preparing this account, the general establishment charges are ignored and only the transactions in goods are included”.

Trading account includes only such transactions which are related with goods, such as opening stock, closing stock, purchase of goods, sales of goods, purchase returns, sales returns, manufacturing expenses, and other direct expenses. Finally trading account is merely the result of trading i.e, involve purchasing and selling of goods.

Objectives of Trading Account

The main objectives of trading accounts are as follows:

- (i) To know the gross results arising from the buying and selling of goods.
- (ii) To identify the weak spots of the firm by comparing purchases, sales and stock of one period with similar items of the preceding period.
- (iii) To know information about ratio of gross profit to the turnover, in order to get result how far have been achieved.
- (iv) To know information on the direct expenses of which percentage bear to gross profit.

Preparation of The Trading Account

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Trading account is prepared by only those transactions which depends on the goods. The items which are directly involved in the trading account are-

- (i) Opening Account
- (ii) Purchase and Purchase Returns
- (iii) Sales and Sales Returns
- (iv) Direct Expenses
- (v) Closing Stock

Structure of Trading Account

Trading account of XYZ Company for the year ending on ...

Dr.		Cr.	
<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Opening stock	xxx	By Sales	xx
To Purchase	xx	Less: Returns	xx
Less: Returns	xx	By Closing stock	xxx
To Direct expenses:		By Gross Loss	xxx
Wages	xx	[Transfer to P & L A/c]	
Factory Expenses	xx		
Carriage inwards	xx		
Cartage	xx		
Freight	xx		
Factory rent	xx		
Belting	xx		
Motive Power	xx		
Tallow & Oil, Coal &			
Coke, Gas & Water	xx		
Excise duty	xx		
Dock charges	xx		
Octroi charges	xx		
Royalties	xx		
	xxx		
To Gross Profit	xxx		
[Transfer to P&L A/c]			
	xxx		xxx

NOTES

Explanation of items which written on the debit side of the trading account:

Opening Stock: Generally the closing stock of the previous year is known as the opening stock for the current year. In the case of the newly started business there will be no opening stock. Opening stock consists of raw materials, work-in-progress and finished goods.

Purchases: Purchase includes cash and credit purchases of all goods brought for resale during the trading period. The gross purchase will appear in the inner column of trading account. Purchase returns or return outwards deducted from purchases and the net amount will be shown on outer column of trading account.

Note: *When goods withdraw by the trader for his personal use and given goods as free samples that goods worth should be deducted from the purchases on the debit side of the trading account.*

Direct Expenses: Direct expenses include expenses incurred in purchasing the goods, bringing goods to godown and manufacturing of goods and making the goods for sale. Direct expenses always shown on the debit side of the trading account. Direct expenses include the following:

(i) Wages: Wages are paid to workers who are involved in production of goods and as such are debited to trading account. The wages and salaries usually given to the workers and shown on the trading account but salary always should be considered in direct expenses and shown on the profit and loss account.

(ii) Carriage and Cartage: Carriage and Cartage inwards paid on the purchase of plant, fixtures, office furniture or any other asset not for -sale should be debited to such asset account, and not to carriage or cartage account.

Carriage inwards appears in the trading account and carriage outwards in the profit and loss account. In working out exercises, when the item carriage appears in the trial balance, and it is not specifically may be debited to trading account.

(iii) Freight: Freight inwards, i.e., freight paid on goods bought is included in the trading account; freight outwards i.e., paid on goods sold is shown in the profit and loss account.

Freight paid on the purchase of plant, machinery, furniture or any other fixed assets should be charged to such assets account as it would add to the purchase price of the assets in question.

(iv) Motive power, Gas, Coal, Water, Heating and Lighting etc: These are the direct expenses used for running machinery in the production process. Therefore, these all items shown on the debit side of the trading account.

Note: If the above items are used for office purpose such expenses should be shown on the profit and loss account.

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(v) **Excise Duty:** Excise duty is paid to the government on goods manufactured. It also increases the cost of goods manufactured. So, it has to be entered on the debit side of the trading account.

(vi) **Octroi:** Octroi is levied by the municipal communities or corporation when the goods enter the city and hence detailed to trading account.

(vii) **Royalty:** This is the amount paid to the owner of patentee, author and landlord for using their right respectively patent, copyright and land. It is generally paid on the basis of production and is charged on the debit of trading account. But if it is based upon sales then it will be debited to the profit and loss account.

(viii) **Consumable stores:** These refers to cotton waste, lubricating oil, greases etc., which are required for the upkeep of machines, therefore, they are charged to the trading account.

Explanation of items, which are written on the credit side of the trading account:

Sales or Sales Return: In trading account sales comprises of both cash and credit sales. The gross sales should appear in the inner column and the net figure after deduction of return inwards or returns in the outer column on the credit side of the trading account. It is incorrect to show return inwards or sales return on the debit side of the trading account. Sales of an asset should not be shown in trading account. When any assets is sold, cash account is to be debited and particular asset account is to be credited.

Note: *When goods are sold by traders as a consignee or goods sold on hire purchase on installment systems would need to be specifically treated.*

Closing Stock: The items of closing stock do not include in the books and is therefore not in the trial balance. In order, however, to ascertain the true results of trading at the end of any financial period, the trader has to take stock of goods unsold and bring it into account after valuing properly. The entry for so doing is to debit stock in trade account and credit the trading account. It should be clearly understood that only the goods remaining unsold at the end of the financial period and which are the property of the trader should be treated as closing stock. Thus goods received by trader to be sold on consignment or on sales or return do not be included in the closing stock.

Closing Entries Relating to Trading Account

The preparation of trading account requires that the balances of all such accounts which are due to appear in trading account are transferred. The entries which are passed for closing these accounts are known as closing entries. The accounts which have debit balances shall be credited and the account which they have to be transferred shall be debited and *vice-versa*.

(i) Closing entry for those accounts which are to be transferred to the debit side of the trading account -

<i>Paritculars</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
Trading Account Dr.		xxx	xxx
To Opening Stock Account			xxx
To Purchase Account			xxx
To Sales Return Account			xxx
To Wages Account			xxx
To Carriage Account			xxx
To Dock Charges Account			xxx
To Motive Power Account			xxx
To Manufacturing Expenses Account			xxx
To Royalty Account.			xxx
(Being the transfer of above accounts to the debit of the Trading account)		xxx	

(ii) Closing entry for those accounts which are to be transferred to the credit of Trading Account.

<i>Paritculars</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
Sales Account Dr.		xxx	
Purchases Return Account Dr.		xxx	
Closing Stock Account Dr.		xxx	
To Trading Account			xxx
(Being the transfer of above account to the credit of the Trading account)			

(iii) If the debit side of the trading account exceeds the credit side, the difference will be gross profit. The gross profit will be transferred to the credit of profit and loss account by passing the following entry.

<i>Paritculars</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
Trading Account Dr.		xxx	
To Profit and Loss Account			xxx
(Being transfer of gross profit to profit and loss account)			

(iv) If the credit side of the trading account exceeds the debit side, the difference will be gross loss. The gross loss will be transferred to debit of the profit and loss account by passing the following entry.

<i>Paritculars</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
Profit and Loss Account Dr.		xxx	
To Trading Account			xxx
(Being transfer of gross loss to Profit and Loss Account).			

Illustration - 1

Prepare a Trading Account of Mr. Prashanth for the year ending 31st March 2007 from the following particulars:

<i>Particulars</i>	<i>₹</i>
Stock of goods on 1-4-2006	3,50,000
Stock of goods on 31-03-2007	4,00,000
Purchases	4,50,000
Sales	6,00,000
Purchases Return	70,000
Sales Return	90,000
Carriage inward	10,000
Wages	5,000

Solution:**Trading Account of Mr. Prashanth for the year ended**

Dr.		31st March 2007		Cr.	
<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>
To Opening Stock	3,50,000	By Sales	6,00,000		
To Purchases	4,50,000	Less: Returns	90,000	5,10,000	
Less: Returns	70,000	By Closing Stock		4,00,000	
To Carriage inward	10,000				
To Wages	5,000				
To Gross Profit	1,65,000				
(Transfer to Profit & Loss A/c)					
	9,10,000			9,10,000	

Illustration - 2

Prepare a Trading Account of Mr. Murali for the year ending 31st March 2011 from the following particulars.

<i>Particulars</i>	<i>₹</i>
Purchases of Materials	2,50,000
Carriage on Purchases	6,000
Wages	70,000
Stock of goods on 1-04-2010	3,60,000
Stock of goods on 31-03-2011	3,80,000
Sales	6,50,000
Sales return	80,000
Purchases return	30,000
Duty and Clearing charges	70,000
Factory Rent and Lighting expenses	30,000
Factory Salaries	20,000

Solution:

Trading Account of Mr. Murali for the year ended

Dr.		Cr.	
31st March 2010			
<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Opening Stock	3,60,000	By Sales	6,50,000
To Purchases	2,50,000	Less: Sales return	80,000
Less: Returns	30,000	By Closing Stock	3,80,000
To Carriage Inward	6,000		
To Wages	70,000		
To Duty and Clearing charges	70,000		
To Factory Salaries	20,000		
To Factory Rent and Lighting expenses	30,000		
To Gross Profit	1,74,000		
(Transfer to Profit & Loss A/c)			
	9,50,000		9,50,000

7.3 PROFIT AND LOSS ACCOUNT

Profit and loss account is the outcome of both trial balance and trading account. Profit and loss account is prepared to know the business results, how much net profit or net loss derived in the business concern for a given financial year.

After ascertaining gross profit or gross loss from trading account it would be transferred to the profit and loss account on the credit side and debit side respectively. Profit and loss account includes only such transactions which are miscellaneous incomes like; interest, commission, dividend, discount, profit on exchange, rent received etc., on the credit side of profit and loss account also includes all the expenses incidental to the carrying on the business such as office rent, salaries, insurance, stationary and printing, telephone expenses, audit fees, advertising, carriage outwards, sales tax, repairs and renewals, entertainment expenses, legal charges, ... etc. on the debit side.

According to Prof. **Carter**, "A Profit and Loss account is an account into which all gains and losses are collected in order to ascertain, the excess of gains over the losses or vice-versa."

Objectives of Profit and Loss Account

- (i) To ascertain the net profit or net loss in certain period of time in business entity.
- (ii) To compare the profit and loss of the current year with the previous year.

- (iii) To know information on the indirect expenses of which percentage bear to gross profit.
- (iv) To know the net profit ratio to asset turnover, in order to getting results how far have been achieved.

NOTES**Preparation of The Profit and Loss Account.**

Profit and loss account is a nominal account and as such all the indirect expenses and losses are shown on its debit side and all the incomes and gains are shown on its credit side as per nominal account rules, "Debit all expenses and losses, Credit all incomes and gains".

Structure of Profit and Loss Account**Profit & Loss Account for the year ending on...**

Dr.		Cr.	
<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Gross Loss	xxx	By Gross Profit (transferred from trading account)	xxx
(transferred from trading account)			
To Administration expenses:		By Cash discounts earned	xxx
Salaries	xx	By Income from investment	
Wages	xx	Dividend on shares	xxx
Rent & Taxes	xx	Miscellaneous	xxx
Office Lighting	xx	Interest on money deposit	
Printing & Stationery	xx	By Bad debts recovered	xxx
Telephone charges	xx	By Commission received	xxx
Fees & Expenses	xx	By Income from other sources	xxx
Postage & Telegrams	xx	By Profit earned on sales of assets	xxx
Audit fees	xx	By Net Loss	xxx
Office car keeping	xx	(Transferred to Balance sheet)	
Office general expenses	xx		
To Selling and distribution exp:	xxx		
Ware house and Store rent	xx		
Packing expenses	xx		
Freight and Carriage outwards	xx		
Sampling expenses	xx		
Cost of catalogues	xx		
Bad debts	xx		
Commission	xx		
Advertisement	xx		

Export expenses	xx			
Insurance premium	xx			
Brokerage	xx			
Noting charges	xx			
Entertainment exp.	xx	xxx		
To Financial expenses:				
Discount allowed	xx			
Interest on capital	xx			
Loss in exchange	xx			
Discounting bill	xx			
Discount on issue of debentures	xx			
Preliminary expenses written off	xx	xxx		
To Depreciation & Maintenance:				
Repairs and Renewals	xx			
Loss by fire or theft	xx			
Depreciation of asset	xx	xxx		
To Net Profit		xxx		
(Transfer to Balance sheet)				
		xxx		xxx

Explanation of items which written on the left side Debit of Profit and Loss Account:

Gross Loss: Gross loss is transferred from trading account to profit and loss account and this happens to be the first item on the debit side.

Administration expenses: Administration expenses includes all the expenses which are incurred for the maintenance and supervision of the business. These expenses plays a vital role for organizing the business firm. This head includes items like salaries, wages, rent, rates and taxes, office lighting, printing and stationary, telephone charges, fees, expenses, postage, telegrams, audit fees, and other office expenses.

Salaries: Salaries includes remuneration paid to clerks and managerial staff. It is an usual expense of general nature. But, if salary is directly connected with the production of goods, then it should be debited to trading account.

Wages: If wages are paid to indirect workers (i.e, workers not connected to manufacturing), this are will be debited to profit and loss account.

NOTES

Rent and Taxes: These expenses are paid for office buildings. Rent and Taxes refers to rent paid for office building and taxes paid to municipal or corporations. These are also usual and general business expenses and as such they are also debited to profit and loss account. But, incase the rent or taxes are directly connected with factory or production, then they should be debited to trading account.

Office lighting: Office lighting refers to lighting charges incurred for providing light in the office. This is one of the usual office expenses, so it has to be debited to the profit and loss account.

Printing and Stationary: Printing and stationary expenses are usually exists in every office. So this expenses has to be debited to profit and loss account.

Telephone, Postage and Telegrams: These are general expenses for office. So these expenses should be debited to profit and loss account.

Selling and Distribution expenses: These expenses are also called post production expenses. These expenses will help to promote the products in the markets. These expenses include wear house and storage rent, packing expenses; freight and carriage, outwards, bad debts, commission, advertisement, export expenses, insurance premiums, brokage ... etc.

Carriage outwards or freight outwards: Carriage outwards or freight outwards refers to the transport charges incurred in taking the goods to the market for sale. It is one of the major expenses in selling and distribution expenses. So it has to be entered on the debit side of the profit and loss account.

Bad debts: Bad debts normally exists in every business. Bad debts refers, the debts which are turned into bad. Some of the debtors do not pay their debts, such debts are unrecoverable in nature.

Advertisement: The amount spent on advertisement is also a business expense, it has to be debited to profit and loss account. But high expenditure on advertisement will be considered as deferred revenue expenditure and part of it will be debited to profit and loss account and the remaining will be shown as asset in balance sheet until written off.

Insurance: Insurance refers to insurance premium paid for insuring the buildings, machinery, stock.... etc. against fire and other risks. This item should be debited to profit and loss account.

Financial expenses: Financial expenses refers to expenses incurred while sourcing finance for running the business. The following expenses arise while sourcing the finance. They are, cash discount allowed, interest paid on borrowed money, interest on capital, trade finance expenses ... etc.

NOTES

Cash Discount: Whenever any buyer made payment on or before the specified period the business concern allow cash discount for prompt payment. It is one of the financial expense to the firm. So it has to be debited to profit and loss account.

Interest on Capital: It refers to interest allowed to the proprietor on his capital. The trader invests in business his own capital as well as loan taken from the outsiders. So the interest paid to outsiders as well as on his own capital is the financial expenses to the firm. So it has to be debited to profit and loss account.

Trade Finance expenses: Whenever any business concern get finance facility from the bank, the bank will charge some percentage on the financing amount. So these kind of expenses will appear on the debit side of profit and loss account.

Depreciation and Maintenance: These expenses are incurred for the maintainance of the fixed assets of the business. Repairs and renewal loss by fire or theft, depreciation of assets are the examples for this head.

Repairs and Renewals: These expenses are usual expenses incurred on repairs and renewals on furniture, building, machinery, motor vehicles..... etc. is debited to profit and loss account.

Depreciation: When the value of some asset goes down due to wear and tear, this loss on asset is called depreciation. The amount lost each year can be taken away from the business profits. So this expenses has to be debited to profit and loss account.

Loss by fire and theft: This is the loss by an even events in the business. So this can be treated as business expense/loss. So it has to be debited to profit and loss account.

Explanation of items which written on the credit side of the Profit and Loss Account:

Credit side of the profit and loss account represents the incomes of the firm other than sale proceeds. These items include normal and abnormal incomes arising in the business activities. These incomes are also called non business incomes, because these incomes are not arising from the genuine sale proceeds. Examples for this kind of incomes are cash discount earned, investment income, recovery of bad debts, commission received, income from other sources, profits earned on sale of assetsetc.

Gross profit: Gross profit is transferred from trading account to profit and loss account. It is shown to be the first item on the credit side of the profit and loss account.

Income from investment: When can amount invested is shares, by their every financial year end, the business firm may get dividend (income). This is treated as income so it has to be credited to profit and loss account.

Investing in money deposits also fetch interest on deposits, and any type of investment too fetch the interest so this incomes should be credited to profit and loss account.

Recovery of bad debts: Some debts will recover which were treated as bad in the past. In this case the recovered bad debt portion is to be treated as an income for the present financial year, hence it has to be shown on credit side of the profit and loss account.

Commission received: This type of income also occur in the normal course of business. Since it is one type of income, it will appear on credit side of profit and loss account.

Profit earned on sale of assets: This income refers to the excess amount received by sale of asset to its salvage value if the sale of asset is generating income. Then it will appear on credit side of the profit and loss account.

Illustration - 3

Prepare Profit and Loss Account from the following particulars relating to the year ending 29th Feb. 2011

<i>Particulars</i>	<i>₹</i>
Gross Profit	1,40,000
Salaries	28,000
Administration expenses	10,000
Selling expenses	20,000
Maintenance expenses	5,000
Commission received	7,000
Sundry Office expenses	10,000

Solution:

Profit and Loss Account for the year ended of 29th Feb. 2011

Dr.		Cr.	
<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Salaries	28,000	By Gross Profit	1,40,000
To Administration expenses	10,000	By Commission received	7,000
To Selling expenses	20,000		
To Maintenance expenses	5,000		
To Sundry office expenses	10,000		
To Net Profit (Transfers to capital A/c)	74,000		
	1,47,000		1,47,000

Illustration - 4

Prepare the Profit and Loss Account from the following particulars relating to the year ending 30th April 2011

<i>Particulars</i>	<i>₹</i>
Office Salaries	40,000
Postage and Telegrams	20,000
Office Rent	7,000
Sundry Office expenses	10,000
Selling expenses	8,000
Gross Profit	2,00,000
Advertisement	12,000
Commission paid	9,000
Commission received	8,000
Prepaid Rent	1,000
Outstanding Salaries	15,000

Solution:**Profit and Loss Account for the year ended 30th April 2011**

Dr.		Cr.	
<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Office Salaries	40,000	By Gross Profit	2,00,000
To Postage and Telegrams	20,000	By Commission received	8,000
To Sundry Office Expenses	10,000		
To Selling Expenses	8,000		
To Advertisement	12,000		
To Commission Paid	9,000		
To Office Rent	7,000		
To Net Profit	1,02,000		
(Transfer to Capital A/c)			
	2,08,000		2,08,000

Note: Prepaid Rent & outstanding salary is as treated assets or liability respectively. So they are not entered into profit & loss account.

Illustration - 5

Prepare Trading and Profit and Loss Account for the year ended 31 March 2011 and a Balance Sheet as on that date:

	<i>₹</i>		<i>₹</i>
Capital	40,000	Depreciation	4,600
Bad debt	1,000	Bad debt provision	3,000
Salaries	8,000	Outstanding Salaries	1,000
Insurance	1,300	Debtors	50,000

Prepaid Insurance	300	Creditors	40,000
Purchases (Less Closing Stock)	1,50,000	Closing Stock	22,400
Furniture	5,400	Sales	2,10,000
Machinery	36,000	Opening Stock	15,000

Solution:**Trading and Profit & Loss Account for the ended 31st March 2011**

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Opening Stock	15,000	By Sales	2,10,000
To Purchase 1,50,000		By Closing Stock	22,400
Add: Closing Stock 22,400	1,72,400		
To Gross profit c/d	45,000		
	2,32,400		2,32,400
To Salaries	8,000	By Gross Profit b/d	45,000
To Insurance	1,300		
To Depreciation	4,600		
To Bad debts	1,000		
To Net profit	30,100		
	45,000		45,000

Balance Sheet as on 31 March 2000

<i>Liabilities</i>	<i>₹</i>	<i>Assets</i>	<i>₹</i>
Outstanding salaries	1,000	Prepaid Insurance	300
Bad debts provision	3,000	Closing Stock	22,400
Creditors	40,000	Machinery	36,000
Capital 40,000		Furniture	5,400
Add: Net profit 30,100	70,100	Debtors	50,000
	1,14,100		1,14,100

Illustration - 6

From the following Trial Balance of S. Saha prepare Trading and Profit & Loss Account for the year ending 31st March 2010 and the Balance Sheet as on that date:

<i>Particulars</i>	<i>Debit</i>	<i>Credit</i>
Purchase	21,750	
Discount allowed	1,300	
Wages	6,500	
Salaries	2,000	
Sales		35,000
Travelling expenses	400	
Commission	425	
Carriage inward	275	

Administration expenses	105	
Trade expenses	600	
Interest	250	
Buildings	5,000	
Furniture	200	
Debtors	4,250	
Capital		13,000
Creditors		2,100
Cash	7,045	
Total	50,100	50,100

Stock on 31st March, 2010 was ₹ 6,000, Depreciate Buildings by 20%, create a provision for bad debts 10% on debtors, outstanding wages ₹ 475.

Solution:

**Trading and Profit & Loss Account of S. Saha for the year
ended 31st March 2010**

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Purchase	21,750	By Sales	35,000
To Wages 6,500		By Closing Stock	6,000
Add: Outstanding 475	6,975		
To Carriage inward	275		
To Gross Profit c/d	12,000		
	41,000		41,000
To Salaries	2,000	By Gross Profit b/d	12,000
To Discount	1,300		
To Travelling expenses	400		
To Commission	425		
To Admin. expenses	105		
To Trade expenses	600		
To Interest	250		
To Depreciation on buildings	1,000		
To Provision for bad Debts	425		
To Net Profit	5,495		
(Transfer to capital account)			
	12,000		12,000

Balance Sheet of S. Saha for the ended March 31st 2010

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Creditors	2,100	Cash in hand	7,045
Outstanding wages	475	Debtors 4,250	
Capital 13,000		Less: Provision	
Add: Net Profit 5,495	18,495	for bad debts 425	3,825
		Closing Stock	6,000

		Furniture		200
		Building	5,000	
		Less: Depreciation	1,000	4,000
	21,070			21,070

Notes: Wages outstanding is an expenses of the current year, so it will be added to wages at the debit side of trading account. The amount is still payable, so it will also be posted at the liabilities side.

7.4 BALANCE SHEET

Balance Sheet is a statement which reflects the true position of assets and liabilities on a particular period. It is also known as financial statement.

In view of the fact that the assets and liabilities changes from day to day as a result of business transactions, the trader must necessarily feel anxious to find out what his true financial position is at the end of each trading period. In the first place, he would like to know whether the net profit as is disclosed by the profit and loss account is correctly arrived at, for, if so, his capital at the end of the period must necessarily increase by that amount. He is equally anxious to see for himself as to how such capital is made up, i.e., what the component assets and Liabilities of the business are. In order, therefore, to obtain this information at the end of the trading period, he has to set out his several assets and liabilities as at that date in the shape of a statement and this statement is called the Balance Sheet.

Balance sheet is prepared from the Trial balance, after all the balances on nominal account are transferred to the trading and profit and loss account and corresponding account in the ledger are closed. The balances now left in the trial balance and remaining one in the ledger represent either personal or real account. All assets and liabilities are set out in the balance sheet in a systematic manner. In the right side are shown the assets and on the left-hand side are shown the various liabilities.

Finally, Balance Sheet shows the true financial position of the business on a specific date i.e., at the end of an accounting period the total assets and total liabilities must be equal.

Definitions

According to **T.R. Batliboi**, “A Balance Sheet is a statement prepared with a view to measure the exact financial position of a business on a certain fixed date”.

In the words of **Free man**, ‘A Balance sheet is an itemwise lists of assets, liabilities and proprietorship of a business at a certain data.

According to **Palmer**, “The Balance sheet is a statement at a particular date showing on one side the trader’s property and possessions and on the other side the liabilities.

NOTES

Objectives of Balance Sheet

- (i) To find out the financial position of the business firm for a particular financial period.
- (ii) To know the sources and applications of the fund.
- (iii) To act as a effective communication tools for stake holder. (creditors, government, income tax authority's and general public) etc.
- (iv) To assists in decision making for future course of action.
- (v) To obtain the information about assets (economic resource control by the entity that are expected to provide further benefits) and liabilities.

Preparation of a Balance Sheet

While preparing a balance sheet the following steps must be considered. Balance sheet is known as liabilities on the **left** hand side, assets on the **right** hand side, instead there is no debit side or no credit side in the balance sheet.

In the balance sheet the debit balances of trial balances of personal and real accounts are to be shown on the assets side and the credit balances of personal accounts are to be shown on the liabilities side. It is prepared on a specific data i.e. at the end of accounting period. So use the word as on or as at..... in the heading of Balance sheet instead of "For the year ended.....". Finally, thus the word 'To' and 'By' are not shown in the balance sheet.

Structure of a Balance Sheet as on...

<i>Liabilities</i>	<i>Amount</i>	<i>Assets</i>	<i>Amount</i>
Current Liabilities:		Current Assets:	
Bank Overdraft	xxx	Cash in hand	xxx
Bills Payable	xxx	Cash at Bank	xxx
Outstanding expenses	xxx	Bills Receivable	xxx
Income received in advance	xxx	Prepaid expenses	xxx
Sundry Creditors	xxx	Accrued Income	xxx
Short term loans	xxx	Investment	xxx
Fixed Liabilities:		Sundry Debtors	xxx
Long term loan	xxx	Stock (closing)	xxx
Reserves	xxx	Loose Tools	xxx
Capital	xxx	Fixed Assets:	xxx
Add: Net profit	xxx	Goodwill	xxx
Add: Interest on Capital	xxx	Furniture & Fixture	xxx
	xxx	Plant & Machinery	xxx
Less: Drawings	xxx	Long term Investment	xxx
Less: Interest on Drawings	xxx		
	xxx		xxx

Alternative Structure of a Balance Sheet as on ...

<i>Liabilities</i>	<i>Amount</i>	<i>Assets</i>	<i>Amount</i>
Capital xxx		Fixed Assets: xxx	
Add: Net profit xxx		Goodwill xxx	
Add: Interest on capital xxx		Furniture & Fixture xxx	
xxx		Plant & Machinery xxx	
Less: Drawing xxx		Long term Investment xxx	
Less: Interest on Drawings xxx	xxx	Current Assets:	
Fixed Liabilities:		Cash in hand xxx	
Long term loan xxx		Cash at Bank xxx	
Reserves xxx		Bills Receivable xxx	
Current Liabilities:		Prepaid expenses xxx	
Bank Overdraft xxx	xxx	Accrued Income xxx	
Bills payable xxx	xxx	Investment xxx	
Outstanding expenses xxx	xxx	Sundry Debtors xxx	
Income received in advance xxx	xxx	Stock (closing) xxx	
Sundry Creditors xxx	xxx	Loose Tools xxx	
Loan xxx	xxx		
	XXXX		XXXX

Assets are classified in different types and they are as follows

- (i) Liquid assets/quick assets
- (ii) Fixed assets
- (iii) Current assets/Floating assets
- (iv) Fictitious assets/Nominal assets
- (v) Wasting assets
- (vi) Tangible assets
- (vii) Intangible assets

(i) Liquid/Quick Assets: Liquid assets are those assets, that is either cash or any other asset that can be easily turned in to cash, such as cash in hand, cash at bank, money owed by customers, shares that can be easily sold, bills receivables, short term investments, debtors, accrued income ... etc. In other words, within a short span of time the business concern can get cash from its liquid/quick assets.

(ii) Fixed Assets: Fixed assets are those assets which are tangible and relatively long-lived; that is used in order to produce goods, used in operation of business and not intended for sale. *Examples* of fixed assets are land and building, plant and machinery, motor vehicles, furniture ... etc. These assets increases profit earning capacity of the business and are valued at cost less depreciation method.

NOTES

(iii) Current or Floating Assets: Current assets are those assets which are convertible into cash through the normal course of business within a short span of time, say within one year. Current assets includes liquids assets, prepaid expenses and stock.

(iv) Fictitious assets/Nominal assets: Fictitious assets are those which have no real value. *Examples* of fictitious assets are preliminary expenses, debit balance of profit and loss account, deferred revenue expenditure ... etc.

(v) Wasting assets: Wasting assets falls under fixed assets category, but only the difference is wasting assets are depleted or exhausted gradually in the process of use. *Examples* are mines, oil wells, quarries, patents, properties taken on lease ...etc.

(vi) Tangible Assets: Tangible assets are those assets which can be see, and touch. *Examples* of such assets are building, plant and machinery, furniture etc. Tangible assets are physically visible and can be easily valued.

(vii) Intangible Assets: Intangible assets are exactly opposite to the tangible assets, where business concern has and can make money from it, but these assets are not something physical and so cannot easily be valued, *for example* technical knowledge, name of the product (Brand name), good will, copyright, patents, trademark etc.

Classification of Liabilities

Liabilities are obligations to outside parties arising from events that have already happened. In simple, liabilities are claims against the entities assets. Liabilities are broadly classified into three major categories. They are:

- (i) Long term Liabilities
 - (ii) Short term Liabilities
 - (iii) Contingent Liabilities
- (i) Long term liabilities:** Long term liabilities are those obligations which are going to meet after one year or more. *Examples* are term loans from banks and financial institutions, debentures, mortgage loans,etc.
- (ii) Short term liabilities:** Obligations which are going to meet in a short span of time (with in one year of the date of balance sheet), are called short term liabilities. *Examples* of such liabilities are Bank overdrafts, bills payable, unearned revenues, outstanding expenses.
- (iii) Contingent liabilities:** A contingency is an occurrence that might arise in the future. These liabilities will become repayable only on the happening of some event, otherwise not. Since these liabilities are uncertain, will not appear in balance sheet, however they are shown as a foot note below the balance sheet. *Examples* are

- (i) **Liability against a suit pending in a court of law:** This will become a liability when the firm loses the case in the court of law.
- (ii) **Liability in respect of a guarantee given:** In case the person or firm for whom guarantee is given by the firm fails to meet its obligations the firm would become liable for such guarantee.
- (iii) **Liability for bill discounts:** In case the acceptor dishonors a bill discounted on the due date the firm will become liable to the bank.

Points to be considered while preparing Balance Sheet:

Capital refers to the amount invested in a business by the proprietor or partner (in case of a partnership business). It is the excess of assets over external liabilities. Capital is increased by profit or introduce additional capital and is decreased by losses and withdraw by proprietor. It also known as proprietor's net assets or net equity.

Drawings: Drawings refer to the amount of cash or goods withdrawn by the proprietor for his personal or domestic use. Example withdraw cash for purchasing two-wheeler for his son, goods taken by the owner for his domestic use, cash withdraw for paying premium of life insurance.

Bills Payable: A bill of exchange is an order drawn by a creditor on a debtor, it will be a bill receivable to the drawer and a bill payable to the acceptor. Bills payable is an obligation to pay the amount to the supplier of goods, before the agreed period (normally 45 days to 90 days) by the trader.

Overdraft: A banker, on being satisfied as to the financial standing of his customer or after receiving proper securities, will allow the customer to over draw his current account, in which case, the over draft would be a sort of temporary advance by the banker and it is to be shown under short term liabilities.

Outstanding liabilities: There are several items, such as rent, salaries, wages, advertisement, ... etc. that belongs to the past and have accrued due, but have not been paid; since it is yet to be payable it will appear under short term liabilities.

Current assets: Current assets are such assets as are acquired either for the purpose of resale or held temporarily in course of a business for their subsequent conversion in to money, such as stock-in-trade, bad debts, bills value, Bills receivable... etc. Current assets are held for resale with a view to make profit or for immediate conversion in to cash, and are therefore, valued at the cost or the current market price whichever is lower at the date of balance sheet.

Stock-in-trade: This item should be very carefully valued and any over-valuation should be guarded. The basis accepted while valuation of stock-in-trade is cost or market price whichever is lower at the date of balance sheet.

NOTES

Bills Receivables: This item will represent bills receivable not matured at the date of the balance sheet.

Goodwill: It is the value of an establishment business over and above the value represented by the tangible or concrete assets, such as land, buildings, machinery, furniture, stock, book debts ... etc. It is an intangible assets it cannot be seen and touched. It can be realised only at the time of the dissolution of the concern along with other assets, but not independently.

The term goodwill can hardly be said to have any precise significance. It is generally used to denote the benefit arising from connection and reputation, and its value is what can be get for the chance of being able to keep that connection and improve it.

Fixed assets: Fixed assets are those which are acquired and intended to be retained permanently for the purpose of carrying on a business, such as land, building plant and machinery ... etc.

As fixed assets are acquired not for resale but by way of permanent equipment to serve as a medium to enable the business being carried on they should not be valued on the basis of price they would realize if sold (fair market value).

Working Capital: Working capital means the capital available for the working of a business after its fixed assets have been acquired.

Capital Expenditure: When an amount has been expended and the expenditure results in the acquisition of an assets or in addition to the value of any existing assets, such an expenditure is styled capital expenditure and will take its place in the Balance Sheet.

Revenue Expenditure: All ordinary expenses incurred in the course of running a business, such as salaries, wages, printing and stationary, advertisement, rent, postage, telegrams, etc., as well as any expenses incurred in keeping the existing assets in proper repairs and maintaining them in their original state efficiency, and which do not result in an addition to the value of exsisting assets, would be classed as revenue expenditure and would find their place in the revenue account, i.e., the profit and loss account.

Deferred Revenue Expenditure: Any expenditure which is the primarily of a revenue nature, but the benefits derived from which are not exhausted during the current period, would be carried forward and treated as an assets to the extent of the unexpired benefits. Such carrying forward is no doubt, permissible. provided it is not continued for such a length of time as to affect the profits of the years which it cannot be considered to have benefited. The most frequently occurring examples of deferred revenue expenditure are preliminary expenses, alternations to machinery or plant, special repairs and advertising.

Balance Sheet and Profit & Loss Account are Inter-dependent - As the balance of profit & loss account is transferred to the capital account and as the closing balance on the capital account is shown in the balance sheet, it is clear that the balance sheet shows the position inclusive of the profit or loss made during the trading period.

NOTES

Illustration - 7

From the following particulars prepare a Balance Sheet for the year ended 31st May, 2011.

<i>Particulars</i>	<i>₹</i>
Land and Building	80,000
Capital	1,90,000
Plant and Machinery	1,20,000
Net Profit	20,000
Sundry Creditors	48,000
Cash at Bank	10,000
Bills Payable	9,000
Sundry Debtors	20,000
Bills Receivable	7,000
Cash in hand	30,000

Solution:**Balance Sheet for the year ended 31st May, 2011**

<i>Liabilities</i>	<i>Amount</i>	<i>Assets</i>	<i>Amount</i>
Capital	1,90,000	Land & Building	80,000
Add: Net Profit	20,000	Plant & Machinery	1,20,000
Sundry Creditors	48,000	Bills Receivable	7,000
Bills Payable	9,000	Cash at Bank	10,000
		Cash in hand	30,000
		Sundry Debtors	20,000
	2,67,000		2,67,000

Illustration - 8

From the following Trial Balance of Supriya, Prepare the Balance Sheet for the year ended 31st December, 2010.

<i>Particulars</i>	<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Supriya's Capital		29,000
Supriya's Drawing		760
Purchase and Sales	8,900	15,000
Sales & Purchases Returns	280	450
Wages	800	

Stock (01-01-2010)	1,200	
Land & Building	22,000	
Carriage Inwards	200	
Advertisement	240	
Net Profit		2,750
Trade expenses	200	
Interest		350
Insurance	130	
Cash in hand	190	
Salaries	800	
Debtors and Creditors	6,500	1,200
Bills Receivable & Bills Payable	1,500	700
Cash at Bank	1,200	
Stock on 31st December, 2010 was valued ₹ 1,500		

Solution:**Balance Sheet as on 31st December, 2010**

<i>Liabilities</i>		<i>Amount</i>	<i>Assets</i>		<i>Amount</i>
Creditors		1,200	Cash in hand		190
Bills Payable		700	Cash at Bank		1,200
Capital	29,000		Bills Receivable		1,500
Add: Net Profit	2,750		Debtors		6,500
	31,750		Closing Stock		1,500
Less: Drawings	760	30,990	Land & Building		22,000
		32,890			32,890

Adjustments

The journal entries necessary to adjust the various accounts for the purpose of making provision for depreciation, reserve for doubtful debts, prepaid expenses, outstanding expenses or liabilities into an account etc, is known as adjusting entries. Adjustment entries are adjustment for such incomes and expenditures must be made in the current year itself, to reach at the accurate profit and loss account.

Generally, those items which have not been included in the trial balance of final account but bringing into record certain income and expenses of the current period are called adjustments. The certain expenses of current period which are incurred but not yet paid, and certain incomes of the current period which are earned but not yet received, appointment of the expenses paid during the current year and income received during the current year, between the current year and the next year and bringing into account. Income but not cash like interest of drawings, appreciation of fixed assets, etc. Expenses but not cash like depreciation of fixed

assets, interest on capital, anticipated income like reserve for discount on creditor, etc. Anticipated losses like reserve for bad debts, reserve for discount on debtors.

NOTES**Objectives of Adjustments**

The necessity and objective of making adjustments, including all expenses, losses, and income, gains related to the accounting period in the final account. The following main objectives are:

- (i) To bring out all prepaid and outstanding expenses.
- (ii) To provide for other reserve and provision, depreciation, interest on capital, doubtful debts, discount on debtor etc.
- (iii) To make adjustment of such income and expenses which have been paid in advance.
- (iv) To make a record of such income and expenditures which are due but have not been received.
- (v) To ascertain the free financial statement of a business firm.

7.5 COMMON ADJUSTMENTS IN FINAL ACCOUNTS

The following adjustments are usually used in the preparation of final account:

- Closing stock
- Prepaid expenses / expenses paid in advance.
- Outstanding expenses / unpaid expenses
- Accrued income / outstanding income.
- Unearned income / income received in advance.
- Bad debts
- Depreciation
- Interest on capital
- Interest on drawing
- Provision for bad and doubtful debts
- Provision or reserve for discount on debtors/creditors
- Capital expenditure treated as revenue expenditure
- Good distribute as free sample
- Loss by fire / accident
- Contingent liabilities.

NOTES

Closing Stock

Closing stock are those goods which remained unsold at the end of the trading period. Adjusting entry for closing stock:

Closing Stock Account Dr.
To Trading Account

Explanation: Closing stock account is debited because it is an asset.

Trading Account is credited because the trading account is a nominal account.

Treatment of Closing Stock in Final Accounts:

First, it should be entered on the credit side of the trading account and secondly entered on the assets side of the Balance Sheet.

Outstanding Expenses

The expenses (example. salary, wages, rent) which have been incurred during a particular trading period, but not paid by the closing date of that period are called “Outstanding expenses”. Adjustment entry for outstanding expenses :-

Various expenses Account Dr.
To Outstanding liabilities for expenses Account.

Explanation: The various expenses account is debited because all expenses and losses are nominal account. The outstanding expenses is liabilities so all liabilities should be credited.

Example - 1**How to treat outstanding expenses in final account?**

From the following prepare a Trading Account, Profit & Loss Account and Balance Sheet.

Salary	₹ 5,000
Wages	₹ 2,000
Rent	₹ 3,000

Adjustment: Outstanding Salary ₹ 1,000 Outstanding Wages ₹ 500 Outstanding Rent ₹ 1,500

Solution:**Trading Account**

Dr.		Cr.	
<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Wages	2,000		
Add: Outstanding	500		
	2,500		

Dr.		Profit & Loss Account		Cr.	
<i>Particulars</i>		<i>Amount</i>		<i>Particulars</i>	<i>Amount</i>
To Salary	5,000				
Add: Outstanding	1,000	6,000			
To Rent	3,000				
Add: Outstanding	1,500	4,500			
Balance Sheet					
<i>Liabilities</i>		₹		<i>Assets</i>	₹
Outstanding Wages		500			
Outstanding Salary		1,000			
Outstanding Rent		1,500			

Prepaid Expenses

Prepaid expenses are those expenses which are paid in current period but relates to the next period are known as prepaid expenses. Adjusting entry for prepaid expenses:

Prepaid Expenses Account Dr.
To Various Expenses Account

Outstanding Income

Incomes earned during a particular period but not received during that period are called “Outstanding incomes”. Adjustment entry for outstanding income:

Outstanding income Account Dr.
To Various income Account.

First, the outstanding income should be added to the respective incomes on the credit side of the profit & loss account. Secondly, total outstanding income should be entered on the assets side of the balance sheet.

Income Received in Advance or Unearned Incomes

Sometimes, certain income might have been received during the trading period even though they have not been earned. Adjusting entry for this is as follows:

Various incomes Account Dr.
To Income received in advance account

First, the income received in advance amount should be deducted from the respective income on the credit side of profit & Loss Account. Secondly total Advance income received should be entered on the liabilities side of balance sheet.

NOTES

Bad Debts

The amount due to us from our debtors are called ‘debts’. Debts which are definitely proved to be irrecoverable are called ‘bad debts’. Bad debts may be causes of insolvency of the debtors or willful non payment by the debtors, etc. Adjustment entry for Bad Debt is as follows:

Bad debts Accounts **Dr.**

To Sundry debtors Account.

Bad debts is a nominal account and it is a loss, Debtors is an assets account. Loss always should be debited and assets is reducing so it has been credited.

The bad debts are given in Trial balance, it will be entered only one time on the debit side of the profit & loss account, if the bad debts is given in adjustment then it will be entered on the debit side of profit & loss account and on the assets side it should be deducted from the debtors.

Provision for Doubtful Debts or Reserve for Doubtful Debts

In addition to the Bad debts. There may be some debts, the recovery of which is doubtful, such debts are called doubtful debts. Bad debts are definitely losses but doubtful debts are only expected loss. A provision should be made out of current year's profits for meeting the losses that may arise, this provision is called a reserve for doubtful debts. Adjusting entry for provision for doubtful debts:

Profit & Loss Account Dr.
To Provision for doubtful debts Account.

Reserve for Discount on Debtors

If a customer pays his dues promptly, the business concern allows cash discount to the debtors. This is loss to the business concern. The business concern can not know how much cash discount it will have to allow to its debtors at the end of the current trading period. For this the business concern has to make some provision to meet the loss arising on account of the discount that will have to be allowed to the debtors is known as Reserve for discount on debtors. Adjusting Entry for Reserve for discount on debtors.

Profit and Loss Account **Dr.**

To Reserve for discount on Debtors Account.

For creating the provision for discount on debtors, the profit and loss account should be debited because the provision made for discount is charged against profit.

Provision for Discount on Creditors**NOTES**

A trader can expect to get some cash discount from the creditors. But he does not know how much discount he will get so for the purpose of recording the expected discount from the creditors. The trader creates a "Reserve for discount on creditors".
Adjusting Entry for reserve for discount on creditors:

Reserve for discount on creditors Account Dr.
To Profit and Loss Account.

Accounting Treatment

If the discount received from creditors during the year and the Reserve for discount on creditors required at the end of that year (i.e., New reserve for discount received) is greater than the reserve for discount on creditor already existing (i.e, old reserve for discount on creditors), then, the difference will appear on the credit side of the Profit and Loss Account.

Depreciation

Depreciation means the decreasing value of an assets. Depreciation is a loss, it should be taken into account, while preparing the final accounts of a concern.

The depreciation is usually charged at a certain percentage on the book value of the assets for the period for which the asset is used. Entry for charging depreciation

Depreciation Account Dr.
To Concerned Assets Account

The Depreciation Account is a nominal account, it is a loss, so it should be debited. Whenever depreciation is charged on an asset the value of that assets goes down in order to reduce the balance of the assets account, which has a debit balance, the asset should be credited.

Interest on Capital

Capital is invested by the proprietor in the business is in the nature of a loan granted by him to the business.

Therefore it is desirable to allow a reasonable rate of interest on the proprietor capital before ascertaining the real Net Profit or Net Loss of the business. Adjusting Entry for interest on Capital:

Interest on capital Account Dr.
To Capital Account

NOTES

Interest on Drawings

The interest on drawings is not actually received from the proprietor. It is due from the proprietor in order to record the amount due from the proprietor, the proprietors capital account or drawings account is debited.

The interest on drawings is a gain to the business therefore the interest on drawings account is credited.

Interest on drawing is an income to the business, it should be entered on the credit side of Profit and Loss Account, and again it should be deducted from the liabilities side of balance sheet.

Goods distributed by a concern as free samples

Goods distributed by a concern as free samples, not already recorded in the books must be recorded at the time of preparation of final accounts by means of an adjusting entry. The entry will be:

Advertisement Account	Dr.
To Purchase Account	

First the goods distributed as free samples must be deducted from purchase on the debit side of the trading account. Secondly the advertisement, they must be entered on the debit side of the profit and loss account. (They must not appear in the Balance Sheet)

Goods destroyed by Fire, Accident, Floods etc.

(a) If the goods are destroyed and the loss is not recoverable, first an entry has to be passed, for recording the destroyed value:

Stock destroyed Account	Dr.
To Trading Account	

Secondly, as the loss is not recoverable, it has to be transferred to the Profit and Loss Account. The entry will be -

Profit and Loss Account	Dr.
To Stock destroyed Account.	

First the value of goods destroyed must be entered on the credit side of the trading account as by stock destroyed.

Secondly the entire Loss must be entered on debit side of the Profit and Loss Account as "To loss on goods destroyed".

(b) If the goods are destroyed and the loss is fully recoverable from the insurer (i.e., insurance company): First the entry for recording the value of goods destroyed will be-

Stock, destroyed Account

Dr.

NOTES

To Trading Account.

Secondly - The entry for recording the amount recoverable from the insurer will be:

Insurer Account

Dr.

To Stock Destroyed Account.

The value of goods destroyed must be entered on the credit side of the trading account as by Stock Destroyed.

The amount recoverable from the insurer must be entered on the assets side of the Balance Sheet as “Amount due from insurer”.

(c) If the goods are destroyed and the loss is partially recoverable from the insurer, the entry for recording the value of goods destroyed will be:

Stock destroyed Account

Dr.

To Trading Account

Secondly, the entry will be for the recoverable Amount:

Insurance Account

Dr.

(With the Amount of loss recoverable)

Profit and Loss Account

Dr.

(With the Balance of loss not recoverable)

To Stock destroyed Account

(With the total value of goods destroyed).

The treatment for goods destroyed in final account is - First the full value of goods destroyed must be entered on the credit side of trading account as “By Stock destroyed”.

Secondly, the amount of loss not recoverable must be entered on the debit side of the Profit and Loss Account as “To loss on stock destroyed”.

Thirdly, the amount of loss recoverable from the insurer must be entered on the assets side of the Balance Sheet as “Amount due from insurance Company”.

Contingent Liabilities

A contingency is an occurrence that might arise in the future. These liabilities will become repayable only on the happening of some event, otherwise not. Since these liabilities are uncertain, will not appear in balance sheet, however they are shown as a foot note below the balance sheet. Examples are

NOTES

- (i) **Liability against a suit pending in a court of law:** This will become a liability when the firm loses the case in the court of law.
- (ii) **Liability in respect of a guarantee given:** In case the person or firm for whom guarantee is given by the firm fails to meet its obligations the firm would become liable for such guarantee.
- (iii) **Liability for bill discounts:** In case the acceptor dishonors a bill discounted on the due date the firm will become liable to the bank.

The Usual Closing Entries are as follows:**For transferring Opening Stock, Purchases, Wages, Carriage Inwards, etc., to Trading Account:**

Trading Account	Dr.
To Stock Account	
To Purchases Account	
To Wages Account	
To Carriage Inwards Account.	

(The effect of this entry will be to close Stock, Purchases, Wages and such other Accounts as are transferred to Trading Account).

For transferring Sales to the Trading Account:

Sales Account	Dr.
To Trading Account	

(This entry will close the Sales Account)

For transferring all the Expenses or Losses to the Profit and Loss Account:

Profit and Loss Account	Dr.
To each of the various Nominal Accounts which represent expenses or losses.	

(This entry closes all the expenses accounts).

For transferring all the items of Gain to the Profit and Loss Account:

Various Nominal Account	Dr.
(representing difference sources of gain)	
To Profit and Loss Account	

(This entry closes all the remaining Nominal Accounts)

NOTES

(This entry closes the Profit and Loss Account)

For transferring the Proprietor's Drawings to his capital Account:

(This entry closes the Drawings Account)

7.6 PRACTICAL PROBLEMS ON FINAL ACCOUNTS

From the following Trial Balance, show the journal entries and Amount of Profit and Loss Account, Balance sheet as on 31st Dec. 2010

<i>Particulars</i>	<i>Debit</i>	<i>Credit</i>
Capital Account		2,03,000
Drawings Account	15,000	
Freehold Land and Premises	90,000	
Plant and Machinery	40,000	
Loose Tools	3,000	
Bills Receivable	3,000	
Stock	40,000	
Materials Purchased	51,000	
Wages	20,000	
Carriage Inwards	1,000	
Carriage Outwards	500	
Coal and Coke	5,000	
Salaries	5,000	
Rent, Rates and Taxes	2,800	
Discounts and Allowances	1,500	
Bills Payable		3,800
National Bank	25,000	
Cash in hand	400	
Sundry Debtors	45,000	

Sundry Creditors		40,000
Repairs and Replacements	1,800	
Purchases Returns		2,650
Works Extensions Account	7,500	
Bad Debts	1,200	
Advertisements	500	
Goods Sold		1,15,00
Sales Returns	2,000	
Gas and Water	200	
Oil, Grease, and Waste	600	
Furniture and Fixtures	1,200	
General Expenses	800	
Printing and Stationery	450	
	3,64,450	3,64,450

Write depreciation of Plant and Machinery at 5%, Loose Tools at 15% and Furniture at 5%. The Stock on hand on 31st December, 2010 amounted to ₹ 60,000. Provide for 5% discount on sundry debtors and 5% for doubtful debts. ₹ 1,500 were due for wages and ₹ 450 for salaries for the month of December 2010. The last bill of ₹ 400 for taxes was for the half-year ending 31st March 2011.

Solution:

Journal Entries

<i>Particulars</i>	<i>LF</i>	<i>Debit</i>	<i>Credit</i>
Depreciation Account Dr.		2,510	
To Plant & Machinery			2,000
To Furniture and Fixtures			60
To Loose Tools			450
(Being 5 per cent Depreciation on Plant, Machinery, Furniture and Fixtures and 15 per cent on Loose Tools written off)			
Profit and Loss Account Dr.		2,250	
To Reserve for Doubtful Debts			2,250
(Being 5 per cent provision or Doubtful Debts on Sundry Debtors)			
Discounts and Allowances Dr.		2,137	
To Reserve for Discounts			2,137
(Being 5 per cent provision for Discounts on Debtors).			
Wages Account Dr.		1,500	
Salaries Account Dr.		450	
To Outstanding Creditors			1,950
(Being the outstanding liability in respect of Wages and Salaries brought into account)			

Expenses Prepaid	Dr.	200	
To Taxes			200
(Being the amount of Prepaid Taxes carried forward)			
Trading Account	Dr.	1,21,300	
To Stock in Trade			40,000
To Materials Purchased			51,000
To Returns Inwards			2,000
To Wages			21,500
To Coal and Coke			5,000
To Carriage Inwards			1,000
To Oil, Grease and Waste			600
To Gas and Water			200
(Being the transfer of the above items to Trading Account).			
Sales Account	Dr.	1,15,000	
Returns Outwards	Dr.	2,650	
To Trading Account			1,17,650
(Being the transfer of the above items to Trading Account)			
Stock-in-Trade	Dr.	60,000	
To Trading Account			60,000
(Being the incorporation of Closing Stock)			
Profit and Loss Account	Dr.	18,947	
To Salaries			5,450
To Rent, Rates and Taxes			2,600
To Repairs and Replacements			1,800
To General Expenses			800
To Carriage Outwards			500
To Advertisements			500
To Printing and Stationery			450
To Discounts and Allowances			3,137
To Bad Debts			1,200
To Depreciation			2,510
(Being the transfer of the above items to Profit and Loss Account)			
Profit and Loss Account	Dr.	22,653	
To Capital Account			22,653
(Being the transfer of Net Profit)			

Trading and Profit & Loss Account for the year ended 31st December, 2010

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Opening Stock	40,000	By Sales	1,15,000
To Purchases	51,000	Less: Returns	2,000
Less: Returns	2,650	By Closing Stock	60,000
To wages	20,000		

Add: Outstanding wages	1,500	21,500		
To Coal and Coke		5,000		
To Carriage Inwards		1,000		
To Oil, Grease and Waste		600		
To Gas and Water		200		
To Gross Profit c/d		56,350		
		1,73,000		1,73,000
To Salaries		5,450	By Gross Profit b/d	56,350
To Rent, Rate and Taxes		2,600		
To Repairs and Replacements		1,800		
To General Expenses		800		
To Carriage Outwards		500		
To Advertisements		500		
To Printing & Allowances		450		
To Discounts and Allowances		1,500		
To Bad Debts		1,200		
To Reserve for Doubtful Debts		2,250		
To Depreciation :				
Plant & Machinery 5%		2,000		
Discount on debtors		2,137		
Furniture & Fixtures 5%		60		
Loose Tools 15%		450		
To Net Profit		34,653		
		56,350		56,350

Balance Sheet for the year ended 31st Dec. 2010

<i>Liabilities</i>		₹	<i>Assets</i>		₹
Capital	2,03,000		Freehold land & premisses		90,000
Add: Net profit	34,653		Plant & machinery	40,000	
	2,37,653		Less: Depreciation	2,000	38,000
Less: Drawings	15,000	2,22,653	Loose Tools	3,000	
Outstanding expenses:			Less: Depreciation	450	2,550
Salary	450		Furniture & Fixtures	1,200	
Wages	1,500	1,950	Less: Depreciation	60	1,140
Bills payable		3,800	Closing stock		60,000
Sundry creditors		40,000	Work extension		7,500
			National Bank		25,000
			Bills receivable		3,000
			Cash in hand		400
			Sundry debtors	45,000	
			Less: Reserve forbad debts	2,250	
				42,750	

		Less: Discount	2137	4,0613
		Advance Tax paid		200
	2,68,403			2,68,403

Illustration - 2

From the following Trial Balance of M/s Medicament as at 31st December, 2003. Prepare the Final Accounts after considering the necessary adjustment.

Trial Balance

<i>Particulars</i>	<i>Debit</i>	<i>Credit</i>
Capital Account		30,000
Drawings Account	2,600	
Plant and Machinery	12,000	
Stock on 1st Jan 2003	5,000	
Creditors		6,000
Purchases	35,000	
Sales		50,000
Return inwards	2,000	
Return outwards		1,000
Sundry Debtors	8,000	
Carriage inwards	500	
Carriage outwards	500	
Wages	3,000	
Salaries	2,000	
Factory Rent	200	
Office Rent	500	
Insurance	500	
Discount received		600
Discount allowed	300	
Furniture	2,000	
Bad debts	400	
Commission	300	
Building	8,000	
Bills Payable		2,000
Cash in hand	200	
Cash at Bank	600	
Bills Receivable	6,000	
	89,600	89,600

Adjustments:

- (a) Closing stock ₹ 20,000
- (b) Prepaid Insurance ₹ 200

- (c) Interest on Capital at 5%
- (d) Office Rent Outstanding ₹ 400
- (e) Depreciation is to be provided at 10% on Furniture and Plant & Machinery.

Solution:

**Trading and Profit & Loss Account of M/s Medicament
as on 31st December, 2003.**

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Opening Stock	5,000	By Sales	50,000
To Purchases	35,000	Less: Returns	2,000
Less: Returns	1,000	By Closing Stock	20,000
To Carriage Inwards	500		
To Wages	3,000		
To Factory Rent	200		
To Gross Profit c/d	25,300		
	68,000		68,000
To Salaries	2,000	By Gross Profit c/d	25,300
To Carriage Outwards	500	By Discount	600
To Office Rent	500		
Add: Outstanding	400		
To Insurance	500		
Less: Prepaid	200		
To Discount	300		
To Bad Debts	400		
To Commission	300		
To Interest on Capital	1,500		
To Depreciation on:			
Furniture	200		
Plant & Machinery	1,200		
To Net Profit	18,300		
	25,900		25,900

Balance Sheet for the year ended 31st Dec. 2003

<i>Liabilities</i>	<i>₹</i>	<i>Assets</i>	<i>₹</i>
Bills Payable	2,000	Cash in hand	200
Outstanding Rent	400	Insurance prepaid	200
Creditors	6,000	Bank balance	600
Capital	30,000	Bills Receivable	6,000
Add: Interest	1,500	Debtors	8,000
Add: Net Profit	18,300	Furniture	2,000
	49,800	Less: Depreciation	200
			1,800

Less: Drawing	2,600	47,200	Buildings		8,000
			Plant & Machinery	12,000	
			Less: Depreciation	1,200	10,800
			Stock (on 31 dec.03)		20,000
		55,600			55,600

Illustration - 3

From the following Trial Balance of Sri. Manoj, prepare Trading and Profit & Loss Account for the year ended 31-12-2005 and Balance Sheet as on that date

Trial Balance

<i>Particulars</i>	<i>Debit</i>	<i>Credit</i>
Capital	—	20,000
Drawings	5,000	—
Machinery	20,000	—
Furniture	5,000	—
Debtors	16,000	—
Creditors	—	35,000
Insurance	3,000	—
Salaries	5,000	—
Land and Buildings	15,000	—
Stock on 1-1-2005	7,000	—
Purchases	30,000	—
Sales	—	50,000
Discount Received	—	1,000
Rent	2,000	—
Bills Payable	—	5,000
Cash in hand	5,000	—
Bank Overdraft	—	2,000
Total	1,13,000	1,13,000

Adjustments:

- Closing Stock- ₹ 8,000
- Insurance Prepaid - ₹ 500
- Rent Outstanding - ₹ 1,000
- Reserve for doubtful debts at 5% on debtors
- Depreciate Land and Building at 10%

Solution:**Trading and Profit & Loss Account of M/s Manoj as on 31-12-2005**

Dr.		Cr.	
<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Opening Stock	7,000	By Sales	50,000
To Purchases	30,000	By Closing Stock	8,000
To Gross Profit c/d (Transferred to Profit & Loss A/c)	21,000		
	58,000		58,000
To Salaries	5,000	By Gross Profit b/d	21,000
To Reserve for doubt full debts	800		
To Insurance	3,000	By Discount Received	1,000
Less: Prepaid Insurance	500		
	2,500		
To Rent	2,000		
Add: Outstanding rent	1,000		
	3,000		
To Depreciation on Land & Building	1,500		
To Net Profit (Transferred to Balance Sheet)	9,200		
	22,000		22,000

Balance Sheet as on 31-12-2005

<i>Liabilities</i>		<i>₹</i>	<i>Assets</i>		<i>₹</i>
Capital	20,000		Land & Building	15,000	
Add: Net Profit	9,200		Less: Depreciation	1,500	13,500
	29,200		Machinery		20,000
Less: Drawings	5,000	24,200	Furnitures		5,000
Creditors		35,000	Debtors	16,000	
			Less: RDD	800	15,200
Bills Payable		5,000	Prepaid Insurance		500
Outstanding Rent		1,000	Closing Stock		8,000
Bank Overdraft		2,000	Cash in hand		5,000
		67,200			67,200

Illustration - 4

From the following information of Chandrashekar, prepare Final Accounts for the year 31st March 2006.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
Drawings	4,500	Trade expenses	300
Purchases	20,000	Printing	150
Returns Inwards	1,500	Furniture	2,000
Stock (1-4-2005)	8,000	Machinery	5,000
Salaries	4,200	Bad debts	400
Wages	1,200	Discounts	700
Rent	350	Sundry Debtors	14,000
Cash in hand	260	Insurance	400
Cash at Bank	5,940	Sales	30,500
Capital	24,000	Discounts	1,900
Sundry Creditors	10,000	Bills payable	2,500

Adjustment:

- Closing stock ₹ 7,000
- Insurance prepaid ₹ 60
- Outstanding liabilities: salaries ₹ 200, wages ₹ 200
- Make provision for doubtful debts at 5% on debtors
- Calculate interest on capital at 5% p.a.
- Depreciate Machinery at 5% and Furniture at 10%
- Reserve for discount on creditors at 1%.

Solution:

**Trading and Profit & Loss Account of Chandrashekar
for the year ended 31st Mar. 2006**

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Opening Stock	8,000	By Sales	30,500
To Purchases	20,000	<i>Less:</i> RIW	1,500
To Wages	1,200	By Closing stock	7,000
<i>Add:</i> O/s wages	200		
To Gross profit c/d	6,600		
	36,000		36,000
To Salaries	4,200	By Gross profit b/d	6,600
<i>Add:</i> O/s salaries	200	By Discount	1,900
To Rent	350	By Reserve for Dist. on creditors	100
To Insurance	400	By Net loss (transferred to capital)	390
<i>Less:</i> Prepaid	60		
To Trade expenses	300		
To Printing	150		
To Discount	700		

To Interest on capital	1,200		
To Depreciation on			
a) Machinery	250		
b) Furniture	200		
To Bad debts	400		
Add: Provision for DD	700	1,100	
		8,990	8,990

Chandrashekar's Balance Sheet as on 31st March 2006

<i>Liabilities</i>		₹	<i>Assets</i>		₹
Sundry creditors	10,000		Land & Building		260
Less Reserve for Dist.	100	9,900	Cash at bank		5,940
Bills payable		2,500	Sundry debtors	14,000	
O/s expenses:			Less: Provision for DD	700	13,300
Salary	200				
Wages	200	400	Closing stock		7,000
Capital	24,000		Prepaid insurance		60
Add: Int. on capital	1,200		Machinery	5,000	
	25,200		Less: Dept.	250	
Less: Net loss	390				4750
	24,810		Furniture	2,000	
Less: Drawings	4,500	20,310	Less: Dept.	200	1,800
		33,110			33,110

Illustration - 5

Prepare final accounts from the following. Trial Balance and other adjustments.

<i>Particulars</i>	<i>Dr.</i>	<i>Cr.</i>
Machinery	78,000	
Furniture	2,000	
Capital	-	1,00,000
Purchases and Sales	60,000	1,27,000
Return	1,000	750
Stock	30,000	-
Discount	425	800
Debtors and Creditors	45,000	25,000
Salaries	7,550	
Wages	10,000	
Carriage outwards	1,200	
Provision for bad debts	-	525
Rent	10,000	

Advertisement	2,000	
Cash	6,900	
	2,54,075	2,54,075

Adjustments:

- (1) Closing stock ₹ 34,220.
- (2) Provision for bad debts is to be kept at ₹ 500.
- (3) Allow interest on capital at 10% p.a.
- (4) Depreciate machinery by 10% and furniture by 5%.
- (5) Outstanding salary ₹ 550.

Solution:**Trading and P & L A/c for year ended.....**

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Opening Stock	30,000	By Sales	1,27,000
To Purchases	60,000	Less: Return	1,000
Less: Returns	750	By Closing stock	34,220
To Wages	10,000		
To Gross profit c/d	60,970		
	1,60,220		1,60,220
To Salaries	7,550	By Gross profit	60,970
Add: Outstanding	550	By Discount	800
To Discount	425	By Excess provision for	
To Carriage	1,200	doubtful debt	25
To Rent	10,000		
To Advertisement	2,000		
To Int. on capital	10,000		
To Depn. on machinery	7,800		
To Depn. on furniture	100		
To Net profit	22,170		
	61,795		61,795

Balance Sheet..... as on

<i>Liabilities</i>	<i>Amount</i>	<i>Assets</i>	<i>Amount</i>
Creditors	25,000	Machinery (78,000-7,800)	70,200
Capital	1,00,000	Furniture (2,000-100)	1,900
Add: Int on cap.	10,000	Debtors (45,000-500)	44,500
Add: Net profit	22,170	Cash	6,900
Outstanding Salary	550	Closing stock	34,220
	1,57,720		1,57,720

Illustration – 6

From the following Trial balance of Ramesh as on 31-12-2007 prepare Final accounts as on the above date:

<i>Particulars</i>	<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Capital Account		1,20,000
Drawings	15,000	
Bills Receivable	22,000	
Machinery	20,000	
Debtors and Creditors	60,000	58,000
Wages	39,000	
Purchase and Sales	2,52,000	3,55,000
Commission		5,500
Rent and Taxes	6,000	
Stock on 1-1-2007	90,000	
Salaries	10,500	
Travelling Expenses	2,000	
Insurance	600	
Repairs	3,400	
Bad debts	3,500	
Furniture	9,000	
Returns	5,000	2,000
Cash in hand and Bank	2,500	
	5,40,500	5,40,500

Adjustments:

- (1) Stock on hand 31-12-2007 was ₹ 1,00,000
- (2) Create 5% provision on debtors for doubtful debts.
- (3) Prepaid insurance amounted to ₹ 100
- (4) Wages outstanding was ₹ 1,000
- (5) Depreciate Machinery by 5% and Furniture by 10% p.a.

Solution:**Trading and Profit & Loss Account of Mr. Ramesh as on 31-12-2007**

Dr.		Cr.	
<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Opening Stock	90,000	By Sales	3,55,000
To Purchase	2,52,000	Less: Returns	5,000
Less: Returns	2,000	By Closing Stock	1,00,000
To Wages	39,000		
Add: Outstanding	1,000		
To Gross Profit	70,000		
	4,50,000		4,50,000

To Salaries	10,500	By Gross Profit	70,000
To Travelling expenses	2,000	By Commission	5,500
To Repairs	3,400		
To Rent & Taxes	6,000		
To Insurance	600		
Less: Prepaid	100		
To Depreciation:			
Machinery	1,000		
Furniture	900		
To Bad debts	3,500		
Add: New bad debts	3,000		
To Net Profit	44,700		
	75,500		75,500

Balance Sheet for the year ended 31st Dec. 2007

<i>Liabilities</i>	<i>Amount</i>	<i>Assets</i>	<i>Amount</i>
Outstanding wages	1,000	Cash in hand & Bank	2,500
Creditors	58,000	Bills Receivable	22,000
Capital	1,20,000	Prepaid Insurance	100
Add: Net profit	44,700	Debtors	60,000
	1,64,700	Less: Bad debts	3,000
Less: Drawings	15,000		57,000
	1,49,700	Closing Stock	1,00,000
		Furniture	9,000
		Less: Depreciation	900
			8,100
		Machinery	20,000
		Less: Depreciation	1,000
			19,000
	2,08,700		2,08,700

Illustration - 7

From the following Trial Balance and other adjustment, prepare Final accounts as on 31-12-08

<i>Particulars</i>	<i>Dr.</i>	<i>Cr.</i>
Drawings and Capital	6,000	75,000
Purchases and Sales	2,25,000	4,20,750
Stock	45,000	—
Plant and Machinery	75,000	—
Trade expenses	10,000	—
Carriage inwards	2,500	—
Carriage outwards	1,500	—
Discount	350	—
Factory Rent	1,500	—
Insurance	700	—
Debtors and Creditors	60,000	15,000

Office rent	3,000	—
Bad debts provision	—	200
Stationery	600	—
General expenses	2,800	—
Advertising	15,000	—
Bills Receivables and Bills Payable	3,000	2,000
Salaries	18,000	—
Wages	20,000	—
Furniture	7,500	—
Coal & Gas	1,000	—
Cash	14,500	—
	5,12,950	5,12,950

Adjustments:

- (i) Closing Stock amounted to ₹ 35000
- (ii) Plant and Machinery depreciated by 10% & Furniture at 5%
- (iii) Bad debts reserve to be raised to 2.5% on debtors
- (iv) Outstanding Factory Rent ₹ 300 and Office Rent ₹ 600
- (v) Insurance included ₹ 100 in respect of 2008.

Solution:**Trading and Profit & Loss Account for the year ended 31-12-2008**

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Opening stock	45,000	By Sales	4,20,750
To Purchases	2,25,000	By Closing stock	35,000
To Carriage inwards	2,500		
To Factory Rent 1,500			
Add: Outstanding 300	1,800		
To Wages	20,000		
To Coal & Gas	1,000		
To Gross Profit c/d	1,60,450		
	4,55,750		4,55,750
To Salaries	18,000	By Gross Profit b/d	1,60,450
To Trade expenses	10,000		
To Carriage outwards	1500		
To Discount	350		
To Insurance 700			
Less : Prepaid 100	600		
To Office rent	3600		
To R.B.D 1,500			

Less : Old reserve	200	1,300		
To Stationery		600		
To General expenses		2,800		
To Advertising		15,000		
To Depreciation:				
Plant & Machinery	7,500			
Furniture	375	7875		
To Net Profit		98,825		
		1,60,450		1,60,450

Balance Sheet for the year ended 31-12-08

<i>Liabilities</i>		₹	<i>Assets</i>		₹
Creditors		15,000	Cash		14,500
Bills Payable		2,000	Bills Receivable		3,000
Outstanding Rent		900	Debtors	60,000	
Capital	75,000		Less: R.B.D	1,500	58,500
Add: Net Profit	98,825		Prepaid insurance		100
	1,73,825		Closing Stock		35,000
Less : Drawings	6000	1,67,825	Furniture	7,500	
			Less: Depreciation	375	7,125
			Plant & Machinery	75,000	
			Less: Depreciation	7,500	67,500
		1,85,725			1,85,725

Illustration - 8

From the following Balances, prepare final accounts of Rajeev, on 31st Dec 2009 after considering the adjustments given below:

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
Capital	35,000	Taxes & Insurance	2,000
Drawings	6,000	General expenses	4,000
Furniture	2,600	Salaries	12,000
Bank loan	4,200	Commission(Dr.)	1,600
Creditors	13,800	Carriage outwards	2,000
Buildings	24,000	Discount(Dr.)	2,000
Stock on(1-1-2009)	20,000	Discount(Cr.)	2,000
Debtors	15,000	Bad debts	800
Rent received	1,000	Sales Returns	2,000
Purchases	1,12,000	Sales	1,50,000

Adjustments:

- Stock on hand on 31-12-2009 ₹ 20,000
- Write off depreciation: Buildings ₹ 1,000, Furniture ₹ 600

(c) Make Reserve of 5% on Debtors for Bad debts.

(d) Carry forward ₹ 200 for unexpired insurance.

Solution:

Trading and Profit & Loss Account of Rajeev

Dr.		as on 31st Dec, 2009		Cr.	
<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Opening stock	20,000	By Sales	1,50,000		
To Purchases	1,12,000	Less: Returns	2,000		1,48,000
To Gross Profit c/d	36,000	By Closing stock			20,000
	1,68,000				1,68,000
To Salaries	12,000	By Gross Profit b/d			36,000
To Commission	1,600	By Discount (Cr.)			2,000
To Taxes & Insurance	2,000	By Rent received			1,000
Less: Prepaid	200				
	1,800				
To General Exps	4,000				
To Carriage outwards	2,000				
To Discount(Dr.)	2,000				
To Bad debts	800				
Add: New reserve	750				
	1,550				
To Depreciation					
Building	1,000				
Furniture	600				
	1,600				
To Net Profit	12,450				
	39,000				39,000

Balance Sheet for the year ended 31-12-2009

<i>Liabilities</i>	<i>₹</i>	<i>Assets</i>	<i>₹</i>
Capital	35,000	Furniture	2,600
Add: Net Profit	12,450	Less: Depreciation	600
	47,450	Buildings	24,000
Less: Drawings	6,000	Less: Depreciation	1,000
	41,450		23,000
Bank loan	4,200	Debtors	15,000
Creditors	13,800	Less: Reserve	750
			14,250
		Stock	20,000
		Prepaid Insurance	200
	59,450		59,450

7.7 SUMMARY

NOTES

Trading account is the outcome of Trial Balance. The debit balances of Trial Balance would represent either Assets or Losses, and the credit balances either Liabilities or Gains. Trading account is prepared to know the trading results, how much Gross Profit or Gross Loss derived in business concern for a given particular period. Opening stock consists of raw materials, work-in-progress and finished goods.

Purchase includes cash and credit purchases of all goods brought for resale during the trading period. The gross purchase will appear in the inner column of trading account. Purchase returns or return outwards deducted from purchases and the net amount will be shown on outer column of trading account.

Direct expenses include expenses incurred in purchasing the goods, bringing goods to godown and manufacturing of goods and making the goods for sale. Profit and loss account is the outcome of both trial balance and trading account.

7.8 GLOSSARY

- (a) **Trading account:** Trading account is the outcome of Trial Balance. The debit balances of Trial Balance would represent either Assets or Losses, and the credit balances either Liabilities or Gains. Trading account is prepared to know the trading results, how much Gross Profit or Gross Loss derived in business concern for a given particular period.
- (b) **Opening Stock:** Generally the closing stock of the previous year is known as the opening stock for the current year. In the case of the newly started business there will be no opening stock. Opening stock consists of raw materials, work-in-progress and finished goods.
- (c) **Purchases:** Purchase includes cash and credit purchases of all goods brought for resale during the trading period. The gross purchase will appear in the inner column of trading account. Purchase returns or return outwards deducted from purchases and the net amount will be shown on outer column of trading account.
- (d) **Direct Expenses:** Direct expenses include expenses incurred in purchasing the goods, bringing goods to godown and manufacturing of goods and making the goods for sale.
- (e) **Profit and loss account:** Profit and loss account is the outcome of both trial balance and trading account. Profit and loss account is prepared to know the business results, how much net profit or net loss derived in the business concern for a given financial year.

NOTES

- (f) **Balance Sheet:** Balance Sheet is a statement which reflects the true position of assets and liabilities on a particular period. It is also known as financial statement.

7.9 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What do you mean by final account?
2. Give the meaning of trading account.
3. What do you mean by profit and loss account?
4. What do you mean by adjustment?
5. Give the meaning of closing entry.
6. What is balance sheet?
7. What do you mean by depreciation?
8. Give the meaning of intangible assets.
9. Define Goodwill.
10. Explain outstanding expenses.
11. What is depreciation?
12. What do you mean by fictitious of assets?
13. What do you mean by prepaid expenses?

(B) Extended Answer Questions

1. How are the assets and liabilities set out in balance sheets?
2. Distinguish between trading account and profit and loss account.
3. How does profit and loss account differ from a balance sheet?
4. Distinguish between capital expenditure and revenue expenditure.
5. Why is it necessary to make a provision for bad debts?
6. What are the points to be considered while preparing balance sheet?
7. State the objectives of trading account and profit & loss account.

(C) True or False

1. Trading account is the outcome of Trial Balance.
2. Closing stock consists of raw materials, work-in-progress and finished goods.

3. Direct expenses include expenses incurred in purchasing the goods, bringing goods to godown and manufacturing of goods and making the goods for sale.
4. Profit and loss account is the outcome of both trial balance and trading account.
5. Balance Sheet is a statement which reflects the true position of assets and liabilities on a particular period. It is also known as financial statement.

NOTES**(D) Multiple Choice Questions**

1. Trading account is the outcome of.....
 - (a) Journal
 - (b) Ledger
 - (c) Trial Balance
 - (d) All the above
2. Opening stock consists of
 - (a) Raw materials
 - (b) work-in-progress
 - (c) Finished goods
 - (d) All the above

(E) Fill in the Blanks

1. Trading account is the outcome of.....
2.consists of raw materials, work-in-progress and finished goods.
3.include expenses incurred in purchasing the goods, bringing goods to godown and manufacturing of goods and making the goods for sale.
4. Profit and loss account is the outcome of both trial balance and.....

7.10 KEY TO CHECK YOUR ANSWER

- (C) 1. True, 2. False, 3 True, 4. True, 5. True
- (D) 1. (c), 2. (d)
- (E) 1. Trial Balance, 2. Opening stock, 3. Direct expenses, 4. Trading account

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NOTES

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7.13 TERMINAL QUESTIONS

1. Prepare proforma of trading account, profit and loss account and balance sheet.

2. Explain the usual adjustments in final account.

NOTES

PRACTICAL QUESTIONS

Q-1. On December 31, 2010 the following information was available from the books of Sri Mukul Rao.

Stock (01-01-2010)	1,20,000	
Purchase made during the year	2,50,000	
Sales	3,00,000	
Carriage inwards		10,000
Return inwards		20,000
Return outwards		30,000
Wages		8,000
Import duty		12,000
Stock (31-12-2010)		1,70,000
Motive power		3,000

Prepare the Trading account for the year 2005.

Q-2. From the following Trial balance of M/s Ranga & Sons co., Prepare Trading and Profit & Loss account for the year ended 31st March 2011.

<i>Particulars</i>	<i>Debit</i>	<i>Credit</i>
Ranga & Sons capital		62,000
Stock (01-04-2010)	23,000	
Purchases & Sales	32,000	53,700
Sales and Purchase Returns	2,000	1,500
Wages	1,800	
Land & Building	52,000	
Freight & Carriage	2,700	
Trade expenses	1,300	
Advertisement	1,500	
Interest		800
Debtors and Creditors	28,000	32,000
Cash in hand	1,200	

Salaries	2,500	
Office expenses	2,000	
	1,50,000	1,50,000

Adjustments:

Stock on 31st March 2011 was valued at ₹ 30,000

Q-3. From the following particulars, prepare a Balance Sheet on 31st December 2010.

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
Capital	1,25,000	Closing Stock	43,000
Drawing	20,000	Net Profit	75,000
Long term loan (cr.)	2,00,000	Sundry Creditors	80,000
Machinery	75,000	Bills Receivable	15,000
Land & Building	1,56,000	Bank Overdraft	35,000
Sundry Debtor	55,000	Cash in hand	21,000
Bills Payable	10,000	Cash in Bank	50,000
Investment	90,000		

Q-4. From the following balances of Mr. Sajal Kumar prepare Trading Account, Profit & Loss Account for the year ending 31st December 2010 and Balance Sheets as on that date.

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
Purchases	14,000	Commission received	1,000
Sales	28,800	Debtors	5,000
Opening Stock	3,000	Salaries	4,800
Machinery	8,000	Insurance	1,200
Cash	2,000	Buildings	15,000
Creditors	1,500	Bills Payable	2,000
Wages	3,000	Furniture	500
Printing & Stationery	1,700	Interest received	800
Capital	25,000	Patents	4,000
Factory Rent	300	Bank Overdraft	3,400

Adjustments:

- (i) Closing Stock ₹ 5,500
- (ii) Outstanding Printing charges ₹ 300
- (iii) Insurance paid in advance ₹ 200
- (iv) Unpaid Wages ₹ 500
- (v) Commission received in advance ₹ 100
- (vi) Interest accrued but not received ₹ 200

Q-5. From the following Trial balance of M/s Sheema Enterprises prepare the Final Account for the year ended 31st March 2010. and the Balance Sheet as at the date.

<i>Particulars</i>	<i>Debit</i>	<i>Credit</i>
Land & Buildings	50,000	
Purchase	1,10,000	
Stock	40,000	
Returns	1,500	2,500
Wages	10,000	
Salaries	9,000	
Office expenses	2,400	
Carriage Inwards	1,200	
Carriage Outwards	2,000	
Discounts	750	1,200
Bad Debts	1,200	
Sales		2,05,000
Capital Account		1,30,000
Insurance	1,500	
Commission		1,500
Plant & Machinery	50,000	
Furniture & Fixtures	10,000	
Bills Receivable	20,000	
Sundry Debtors	40,000	
Sundry Creditors		25,000
Cash in hand	1,500	
Cash at bank	4,500	
Office Equipment	12,000	
Bills Payable		2,350

The following adjustments are required:

- (i) Closing Stock amounted to ₹ 60,000
- (ii) Outstanding Liabilities: Wages ₹ 2,000 Rent ₹ 3,000
- (iii) Depreciate Land & Buildings at 5% , Plant & Machinery at 10%, Office Equipments and Furniture and Fixtures at 10%.
- (iv) Raise a Bad and doubtful Debts reserve at 5% on sundry Debtor.
- (v) Insurance premiums prepaid ₹ 200.
- (vi) Provide Interest on Capital at 5%.

Q-6. The following is the Trial balance of Mr. Gobinda as at 30th June 2006. You are asked to pass the necessary Adjusting and Closing Entries and to prepare the Trading and Profit & Loss Account and Balance Sheet as at that date.

<i>Particulars</i>	<i>Dr.(₹)</i>	<i>Cr.(₹)</i>
Mr. Gobinda s Capital Account		1,08,090
Stock on 1st July 2005	46,800	
Sales and Sales Returns	8,600	2,89,600
Purchases and Purchases Returns	2,43,100	5,800
Frieght and Carriage	18,600	
Rent and Taxes	5,700	
Salaries and Wages	9,300	
Sundry Debtors	24,000	
Creditors		14,800
Bank loan at 6 %		20,000
Bank Interest	900	
Printing and Advertising	14,600	
Income from Investments		250
Cash at Bank	8,200	
Discounts Receivable		3,690
Investments	5,000	
Furniture and Fittings	1,800	
Discounts Payable	7,340	
General Expenses	3,160	
Audit Fees	500	
Insurance	800	
Travelling Expenses	2,130	
Postage and Telegrams	870	
Cash in hand	830	
Deposit with Mr. Amio at 5 %	30,000	
Drawings Account	10,000	
	4,42,230	4,42,230

Stock on 30th June 2006 was ₹ 78,600. 50% of Printing and Advertising is to be carried forward as a charge in the following year. Depreciate Furniture and Fittings by 10%. Create 5% Reserve on Debtors ₹ Reserve 2% for Discount on Debtors and Creditors ₹ Insurance prepaid amounts to ₹ 200, Salaries outstanding ₹ 500 and Carriage outstanding ₹ 100. Charge full year's interest on deposit with Mr. Amio.

Q-7. From the following balances extracted from the books of Mr. Abbas on 30th June 2010, prepare Final Accounts after making entries in regard to the following adjustments and the closing of accounts.

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
Stock on 1st July 2009	96,000	Returns Inwards	
Wages	28,000	Sundry Debtors	35,000

Salaries	4,000	Office Expenses	5,000
Purchases	5,000	Income Tax	500
Purchases	1,20,000	Drawings	6,500
Interest on Overdraft	200	J.Jehangir's Capital	50,000
Bills Receivable	6,000	Bills Payable	5,000
Rent	2,000	Bank Loan (Cr.)	4,000
Plant & Machinery	20,000	Sales	2,50,000
Travelling Expenses	5,000	Reserve for Bad Debts	5,000
Repairs to Plant	1,600	Discount on Purchases	4,000
Cash in hand	200	Sundry Creditors	23,300
Cash at Bank	1,800	Returns Outwards	1,500
Buildings	5,000		

Stock on 30th June 2010 was ₹ 35,000. Write off ₹ 3,000 Bad Debts and maintain a Reserve of 5% on Debtors. Depreciate Plant and Machinery by 10%. Allow interest on Capital at 5% per annum. Wages and Salaries are unpaid to the extent of ₹ 1,500 and ₹ 450. Rent at ₹ 200 per month for the last two months is unpaid.

Q-8. From the following balance of M^{rs} Shantibala prepare Trading and Profit & Loss Account and Balance Sheet as at 31st December 2010

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
Shantibala's Capital	20,500	Cash in hand	55
Creditors	15,000	Drawings	2,500
Creditor- expenses	3,400	Purchases	85,500
Rent Received	300	Carriage Inwards	750
Purchases Returns	2,000	Wages (Manufacturing)	11,500
Sales	1,44,800	Power	4,500
Bad debts reserve (1 Jan. 2010)	300	Rent and Insurance	9,950
Advertising developments	4,000	Salaries and Wages	17,200
Goodwill	2,500	Discount Received	900
Plant and Machinery	10,000	General charges	4,500
Travellers Samples	1,350	Sales Returns	300
Stock on (1st January 2010)	16,000	Travellers Commission	1,445
Debtors	7,500	Travellers Salaries	4,550
Cash at Bank	1,000	Discounts allowed	2,500

The Closing Stock was ₹ 11,500, but there has been a loss by fire on December 20th 2010, to the extent of ₹ 10,000, not covered by Insurance. Depreciate Plant and Machinery by 10% and Travellers samples by 2.5% increase the Bad debts Reserve to ₹ 1,000. Write 50% off advertising Development Account. Annual premium on insurance expiring 1st March 2010 was ₹ 600

Q-9. From the following Trial balance of Mr. Apurba prepare Trading and Profit & Loss Account (after passing the required adjusting and closing entries), for the year ended 31st December 2010 and a Balance Sheet as on that date

Trial Balance

<i>Debits</i>	<i>Amount</i>	<i>Credits</i>	<i>Amount</i>
Plant and Machinery	19,000	Apurba's Capital Account	80,000
Manufacturing Wages	34,000	Sundry Creditors	67,700
Salaries	15,000	Bank Loan	10,000
Fixtures and Fittings	9,000	Purchases Returns	1,000
Carriage inwards	1,000	Sales	2,46,000
Carriage outwards	2,000	Reserve for Bad & Doubtful Debts	2,000
Freehold works	25,000		
Manufacturing expenses	9,000		
Insurance and Taxes	4,000		
Goodwill	50,000		
General expenses	8,000		
Factory Fuel & Power	1,000		
Sundry Debtors	78,000		
Lighting - Factory	900		
Stable Expenses for distribution	2,000		
Stock, (1st January 2010)	34,000		
Horses and Carts	5,000		
Purchases	97,000		
Sales Returns	3,000		
Discount	900		
Bad debts	1,000		
Interest on Bank	400		
Cash at Bank	7,000		
Cash in hand	500		
	4,06,700		4,06,700

Adjustments:

- (i) Stock on 31st December 2010 was ₹ 29,000
- (ii) Depreciation: - Plant and Machinery, 10 % Fixtures and Fittings, 5 %; Horses and Carts, ₹ 1,000
- (iii) Bring reserve for Bad and doubtful debts to 5 %.
- (iv) Unexpected insurance ₹ 300 and Taxes ₹ 200
- (v) A commission of 1% on the Gross Profit to be provided for works Manager.
- (vi) A Commission of 5 % on Net Profit (after charging the works Manager commission) to be credited to the General Manager.

BLOCK III: Cost Accounting

UNIT 8

INTRODUCTION TO COST ACCOUNTING

Structure:

- 8.1 Introduction
- 8.2 Concept of Cost Accounting
- 8.3 Objectives of Cost Accounting
- 8.4 Advantages of Cost Accounting
- 8.5 Limitations of Cost Accounting
- 8.6 Cost Concepts
- 8.7 Summary
- 8.8 Glossary
- 8.9 Check Your Progress (Multiple Choice/Objective Type Questions)
- 8.10 Key to Check Your Answer
- 8.11 Bibliography
- 8.12 Suggested Readings
- 8.13 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Meaning of Cost Accounting
- Significance of Cost Accounting
- Elements of Cost
- Distinction between Cost and Financial Accounting

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8.1 INTRODUCTION

Cost accounting is a process of collecting, recording, classifying, analyzing, summarizing, allocating and evaluating various alternative courses of action & control of costs. Its goal is to advise the management on the most appropriate course of action based on the cost efficiency and capability. Cost accounting provides the detailed cost information that management needs to control current operations and plan for the future.

8.2 CONCEPT OF COST ACCOUNTING

In the earlier times, the concept of costing was defined as the technique and process of ascertaining costs of a given thing. In **sixties**, the definition of cost accounting was modified as, “the application of costing and cost accounting principles, methods and techniques to the science, art and practice of cost control and ascertainment of profitability of goods or services”. It includes the presentation of information derived therefore for the purpose of managerial decision-making. Today, the scope of cost accounting has widened enormously to help the organisations to achieve its goals. Modern cost accounting is being termed as management accounting, since managers being the primary user of accounting information are increasingly using the data provided by the accounts, setting objectives and controlling the operations of the business.

Meaning of Cost

The simple word ‘cost’ has a variety of meanings according to the context. For a common man, the word cost means the price. But in management terminology, the term cost refers to the amount of expenditure incurred or attributed to manufacture a product and service.

Meaning of Costing

According to CIMA terminology, the term costing means, “The techniques and process of ascertaining costs. As a technique costing follows certain principles in ascertaining the cost such as classifying, identifying, of cost into cost unit and cost centre. As a process, it follows a definite procedure in ascertaining the costs.

Meaning of Cost Accounting

According to CIMA technology, cost accounting means the process of accounting for cost. It starts recording of income and expenditure and ends with periodical cost reports to management for the purpose of cost control.

Definition of Cost Accounting**NOTES**

Mr. Wheldon defines cost accounting as “The classifying, recording and appropriate allocation of expenditure for the determination of cost of products or services. The relation of these cost to sale value and the ascertainment of profitability”.

According to **Kohler**, “Cost accounting deals with the classification, recording, allocation, summarization and reporting of current and prospective costs”.

Meaning of Cost Accountancy

Cost accountancy is defined by CIMA of UK as “the application of costing and cost accounting principles, methods and techniques to the science, art and practice of cost control and the ascertainment of profitability. It includes the presentation of information derived therefrom for the purposes of managerial decision-making”.

Similarities between Financial Accounts and Cost Accounts

1. The fundamental principles of double entry is applicable in both the system of accounts.
2. Both financial accounting and cost accounting are concerned with the accumulation and presentation of information to serve the needs of management.
3. The source of the two accounts for recording the transaction is the same.
4. Both are in monetary terms.
5. Accuracy of accounts is maintained under both the systems.

8.3 OBJECTIVES OF COST ACCOUNTING

Cost accounting serves number of purposes. The following are considered to be most important objectives:

1. Ascertaining Costs: The first objective of cost accounting is to find out cost of a product, process or service. The other objectives which have been mentioned hereafter can be achieved only when the costs have been ascertained.

2. Determining Selling Price: After ascertaining the cost of product add certain percentage of profit to cost to determine selling price. Thus it is necessary that the revenue should be greater than the costs incurred in producing goods and services from which the revenue is to be derived.

3. Measuring and Increasing Efficiency: Cost accounting involves a study of the various operations used in manufacturing a product or providing service. The study facilitates measuring of the efficiency of the organization as a whole as well as of the departments besides devising means of increasing the efficiency.

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4. Cost Control and Cost Reduction: Cost accounting assists in cost control as it uses techniques such as budgetary control, standard costing etc. for controlling costs. Cost is required to be reduced also constant research and development activities help in reduction of costs without compromising with the quality of goods or services.

5. Ascertaining Profits: Cost accounting also aims at ascertaining the profits of each and every activity. It produces statements at such intervals as the management may require.

7. Providing Basis for Managerial Decision–Making: Costs accounting helps the management in formulation of operative policies.

Scope of Cost Accounting

1. Cost Ascertainment: It includes collection, analysis of expenses and measurement of production at different stages of manufacture. The collection, analysis and measurement requires different methods of costing for different types of production such as Historical Costs, Standard Costs, Actual Cost, Process Cost, Operation Cost etc. After this, cost accountant will use any method of costing like specific order costing, operation costing, and direct costing technique. These techniques and methods may be used for calculating different nature of products in the same organization.

2. Cost Records: In this part of cost accounting, cost accountant maintains cost books, vouchers, ledgers, reports and other cost related documents for future comparison and reference. It will also be under the scope of cost accounting. It is also the process of accounting for cost which begins with the recording of expenditure and ends with the preparation of statistical data. It is a formal mechanism by means of which cost of product or services are ascertained and controlled.

3. Cost Control: Cost control is the guidance and regulation by executive action. In this division, cost accountant used different techniques and methods for controlling the cost. Cost accountant uses budgetary control, standard costing, break even point analysis and many other techniques for controlling the cost. This is the end boundary of cost accounting scope.

Significance of Cost Accounting

Cost accounting has wider application. It is useful for the internal working of an organization. It helps in detecting the profitable and unprofitable activities of the business concern. It enables to measure the qualitative aspects of a business concern. It gives information on which estimates and tenders are based. It helps in detecting the wastages or losses involved in the usage of stock. The exact cause of a decrease

or increase in profit or loss can be detected. The efficient workers can be distinguished from that of inefficient workers.

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Cost accounting is applicable to the outsiders also. It helps the creditors and the investors to know the financial position of the organization. Cost accounting helps the government in the assessment of tax and the formulation of policies regarding the export trade or import trade. It is helpful to the consumers in knowing the price levels of the products or services. Costing plays an important role to the public at large. It measures the efficiency and profitability of the concern in specific and the interest of the public at large. Thus, cost accounting has a wider application in the modern society.

Differences between Financial Accounting and Cost Accounting

<i>Basis</i>	<i>Financial Accounting</i>	<i>Cost Accounting</i>
1. Purpose	It serves the interest of business and other interested parties by providing suitable information in the financial statements.	It renders information on for the guidance of the management for the proper planning control and decision making.
2. Options	Financial Accounting are required to be kept as per the requirements of the company act and income tax act.	Cost Accounting are voluntary kept to serve the management in the discharge of its functions.
3. Analysis	Financial Accounting reveal the profit of the business as a whole.	Cost Accounting shows the profit result of each operation process and product.
4. Recording	It consists of classification recording and analysis of transactions in a subjective manner i.e., according to the nature of expenditure.	It records in an objective manner i.e., according to which cost are incurred.
5. Control	It lays emphasis on the recording aspect, no consideration is given to control aspect.	It provides for a detailed system of control with the help of standard costing and budgetary control.
6. Reporting	It involves reporting of business performance at the end of the accounting year.	There is a continuous flow of data information of cost report to management.
7. Obligation	This is to be maintained compulsorily.	This is to be maintained voluntarily.
8. Audit	Audit of Financial Accounting is statutory.	Audit of Cost Accounting is not compulsory.

9. Duration of	Financial Accounting provides financial information once a year.	Cost Accounting furnishes reporting cost data at frequent intervals.
10. Pricing	It fails to guide the formulation of pricing policy.	It provides adequate data for formulating pricing policy.
11. Valuation of stock	Stock is valued at cost or marked price which ever is less.	Stock is always valued at cost price.

8.4 ADVANTAGES OF COST ACCOUNTING

A sound system of cost accounting provides the following advantages:

1. Profitable and Unprofitable activities are disclosed.
2. Costing provides such information upon which estimates and tenders may be based.
3. It reveals losses on inefficiency occurring in any form such as idle time, idle capacity, spoilage etc.
4. Costing guides future production policies.
5. It helps in the preparation of interium final accounts with the help of perpetual inventory system.
6. It helps in controlling the cost with the application of standard costing and budgetary control.
7. It provides an independent and reliable check on the accuracy of Financial Accounting with the help of the reconciliation of the two at the end of the year.
8. The exact cause of a decrease or increase in the profit and loss of business can be located.
9. Costing information helps the management in taking the decisions, such as a make or buy, whether to accept orders below cost etc.
10. Costing system helps the government, wage boards and trade unions in providing data for price fixation and price control tariff protection and wage fixation.

8.5 LIMITATIONS OF COST ACCOUNTING

Despite several benefits offered by cost accounting, there are certain limitations also:

1. **It is expensive:** The system of cost accounting involves additional expenditure to be incurred in installing it and maintaining it.

2. **The system is more complex:** As the cost accounting system involve number of steps in ascertaining cost, it is considered to be complicated system of accounting.
3. **Inapplicability:** All business cannot make use of a single method and technique of costing. It all depends upon the nature of business and type of product manufactured by it.
4. **Not suitable for small organisations:** A cost accounting system is applicable only to a large organisation but not suitable for small organisation.
5. **Get distorted national and items.**
6. **Lack of social accounting:** Cost account fails to take into account the social obligation of the business. In other words, social accounting is outside the preview of cost accounting.

Methods or Techniques of Costing

The choice of a particular method of costing depends on the nature of business of the concern. There are two basic methods of costing namely:

(a) Specific or Job Order Costing

Job costing is the basic costing method applicable to those industries where the work consist of separate contracts, jobs or batches each of which is authorized by a specific order or contract.

(i) Contract Costing: Contract costing is a variant of job costing system applicable particularly in the case of organizations doing construction work. It is also known as Terminal costing. Each contract, short term or long-term, is treated as a job. It is understood that construction work involves massive investment and labour employment. So it may take much time to complete the work and may extend more than year period.

(ii) Batch Costing: Batch Costing is defined as that form of specific order costing which applies where similar articles are manufactured in batches either for sale or for use within the undertaking. Batch Costing is used where articles are produced in batches and held in stock for assembly of components to produce finished products or for sale to customers. Costs are collected against each batch. When the batch is completed cost per unit is computed by dividing total cost by the number of units in each batch.

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(b) Process Costing

Process costing method is applicable where goods result from a sequence of continuous or repetitive operations or processes and products are identical and cannot be segregated. *For example*, Chemical Manufacturing Industries.

(c) Service or Operating Costing

The cost of operating a service is known as the operating cost and the method of ascertaining the operating cost is known as “Process Costing and Operating Costing”.

(d) Unit and Output Costing

In this method, cost per unit of output or production is ascertained and the amount of each element constituting such cost is determined. In case where the products can be expressed in identical quantitative units and where manufacture is continuous, this type of costing is applied. Cost statements or cost sheets are prepared in which various items of expense are classified and the total expenditure is divided by the total quantity produced in order to arrive at per unit cost of production. The method is suitable in industries like brick making, collieries, flour mills, paper mills, cement manufacturing etc.

(e) Multiple Costing

Under this system, the costs of different sections of production are combined after finding out the cost of each and every part manufactured. The system of ascertaining cost in this way is applicable where a product comprises of many parts, e.g., motor cars, engines or machine tools, typewriters, radios, cycles etc.

8.6 COST CONCEPTS

The word ‘cost’ has a variety of meanings according to the context. For a common man, the word cost means the price. But in management terminology, the term cost refers to the amount of expenditure incurred or attributed to manufacture a product and service.

Classification of Costs

Grouping of cost on the basis of related characteristics is known as classification of cost. The important ways characteristics classifications are:

1. Classification of Cost on the basis of Nature

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(a) Material: Material include both the direct and indirect materials. Direct materials are those materials which enter into and form part of the product. *For example*, Wood used in making furniture.

Indirect materials are those which cannot be traced as a part of the product such as nails or success used in making furniture.

(b) Labour: Labour cost may be classified into direct and indirect labour. Direct labour refers to the time spent in altering the construction. Composition conformations of the products manufactured. *For example*, Time spent by a worker at the factory at the time of production.

The labour hours which cannot be directly identified with a job or process are treated as indirect labour. *For example*, Salaries and wages paid.

(c) Expenses: Expenses can be broadly classified into direct expenses and indirect expenses.

Direct expenses are those expenses which can be identified with production. *For example*, Direct expenses involved in production.

Indirect expenses are those which can not be identified with production. All indirect materials, indirect labour and indirect expenses are known as overhead. *For example*, administration overhead, factory overhead and selling and distribution overhead.

2. Classification of Cost on the basis of Function

Function cost can be classified into:

(a) Production Cost: It starts with the process of supplying material, labour and services and ends with primary parking of the finished product.

(b) Administration Cost: Administration cost is the cost incurred for formulating the policy, directing the organization and controlling the operation of an organization. *For example*, All office expenses like salary paid to staff, office maintenance charges etc.

(c) Selling Cost: It refers to the expenditure incurred in promoting sales and retaining customers. *For example*, Salesman commission.

(d) Distribution Cost: Distribution cost starts with the process of making and parked goods available for dispatch. *For example*, Parking charges.

(e) Research and Development: It relates to the cost of research for new or improved products, new application of materials or new or improved methods. *For example*, Research charges for launching a new product.

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3. Classification of Cost on the basis of Variability

Based on variability cost are classified into fixed variable and semi-fixed or semi-variable cost according to their tendency to vary with the volume of output.

(a) Fixed Costs: Fixed cost remains unaffected by the variation or change in the volume of output. *For example*, Rent, Taxes etc.

(b) Variable Costs: It varies directly with volume of output. *For example*, Direct expenses, direct labour.

(c) Semi-fixed/Semi-Variable Costs: Costs which are partly fixed and partly variable are called semi-variable costs. *For example*, Telephone expenses, electricity charges etc.

4. Classification of Cost on the basis of Controllability

According to controllability cost can be classified as:

(a) Controllable Cost: Controllable cost can be influenced by the action of a specified member of an undertaking. *For example*, Purchase of materials.

(b) Uncontrollable Cost: Uncontrollable cost can not be influenced by the action of a specified member of an undertaking. *For example*, Loss incurred due to fire.

5. Classification of Cost on the basis of Normality

Cost can be divided into:

(a) Normal Cost: Normal cost refers to the cost which are normally attained at a given level by conditions. *For example*, Cost of effective labour hours.

(b) Abnormal Cost: Abnormal cost refers to the cost which are not normally increased at a given level of output in the conditions in which that level of output is normally attained.

6. Classification of Cost on the basis of Time

On the basis of time cost can be classified into:

(a) Historical Cost/Actual Cost: Historical cost relates to the usual method of determined actual cost of operations based on actual expenses increased during the period. Historical cost is the cost which has already been incurred. *For example*, Rent paid.

(b) Pre-determined Cost/Future Cost: Pre-determined cost is the cost which is determined in advance before the actual operation starts. It may be either estimated or standard.

(c) Estimated Cost: Estimated cost is prepared before accepting an order for submitting price quotation. It is also used for comparing actual performance.

(d) Standard Cost: Standard cost is a pre-determined cost of a product a service applicable during a specific period of immediate future under current or anticipated operating conditions.

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7. Classification of Cost on the basis of in Relation to the Product

Cost may be classified into follows:

(a) Direct Cost: Direct costs are those which are incurred for a particular cost unit and can be conveniently linked with that cost unit. Direct costs are termed as product cost.

(b) Indirect Cost: Indirect costs are those which are incurred for a number of cost units. Since such costs are incurred over a period and the benefit is mostly derived within the same period they are called period costs.

8. Classification of Cost on the basis of Cost Analysis for Decision-making

Here the costs are classified as:

(a) Relevant Cost: Costs that are affected by decisions are relevant costs. These are expected future costs that will differ between alternatives. *For example*, Marginal cost, Incremental cost, Opportunity costs.

(b) Marginal Costing: Marginal cost refers to a principle whereby variable costs are charged to cost units and the fixed costs attributable to the relevant period is written off in full against the contribution for that period. *For example*, Product pricing.

(c) Incremental Costing: Incremental costing techniques considers incremental costs and incremental revenue arising out of a decision to change the level of nature of activity.

(d) Opportunity Cost: Opportunity cost is the value of a benefit scarified in favour of an alternative course of action. It is the measurable advantage foregone as a result of the rejection of best alternative uses of resources whether of materials, labour or facilities.

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8.7 SUMMARY

Cost accounting means the process of accounting for cost. It starts recording of income and expenditure and ends with periodical cost reports to management for the purpose of cost control.

Cost accountancy is defined by CIMA of UK as “the application of costing and cost accounting principles, methods and techniques to the science, art and practice of cost control and the ascertainment of profitability. It includes the presentation of information derived there from for the purposes of managerial decision-making”.

Cost control is the guidance and regulation by executive action. In this division, cost accountant used different techniques and methods for controlling the cost. Cost accountant uses budgetary control, standard costing, breakeven point analysis and many other techniques for controlling the cost. This is the end boundary of cost accounting scope.

Material includes both the direct and indirect materials. Direct materials are those materials which enter into and form part of the product. Indirect materials are those which cannot be traced as a part of the product such as nails or success used in making furniture.

Labour cost may be classified into direct and indirect labour. Direct labour refers to the time spent in altering the construction. Composition conformations of the products manufactured. For example, Time spent by a worker at the factory at the time of production.

Expenses can be broadly classified into direct expenses and indirect expenses. Direct expenses are those expenses which can be identified with production. Indirect expenses are those which cannot be identified with production. All indirect materials, indirect labour and indirect expenses are known as overhead.

Cost centers is defined as a location, a person or an item of equipment or group of them in respect of which costs may be ascertained and related to cost units for the purpose of cost control. It is the smallest segment of activity or area of responsibility for which costs are accumulated.

8.8 GLOSSARY

- (a) **Cost accounting:** Cost accounting means the process of accounting for cost. It starts recording of income and expenditure and ends with periodical cost reports to management for the purpose of cost control.
- (b) **Cost control:** Cost control is the guidance and regulation by executive action. In this division, cost accountant used different techniques and methods for controlling the cost. Cost accountant uses budgetary control,

standard costing, breakeven point analysis and many other techniques for controlling the cost. This is the end boundary of cost accounting scope.

NOTES

- (c) **Material:** Material includes both the direct and indirect materials. Direct materials are those materials which enter into and form part of the product. Indirect materials are those which cannot be traced as a part of the product such as nails or success used in making furniture.
- (d) **Labour Cost:** Labour cost may be classified into direct and indirect labour. Direct labour refers to the time spent in altering the construction. Composition conformations of the products manufactured. For example, Time spent by a worker at the factory at the time of production.
- (e) **Cost Center:** Cost centers is defined as a location, a person or an item of equipment or group of them in respect of which costs may be ascertained and related to cost units for the purpose of cost control. It is the smallest segment of activity or area of responsibility for which costs are accumulated.

8.9 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What do you mean by cost?
2. Define the term cost.
3. What do you mean by cost accounting?
4. Define cost accounting.
5. What do you mean by costing?
6. Define the term costing.
7. Define cost accountancy.
8. What do mean by cost accountancy.
9. Define cost centre.
10. What are the types of cost centres?
11. What is cost unit?
12. What is cost object?
13. What do you mean by classification of costs?
14. What are direct costs?
15. What are indirect costs?

NOTES

(B) Extended answer questions

1. State the objectives of cost accounting.
2. Mention the advantages of cost accounting?
3. What are the limitations of cost accounting?
4. Distinguish between cost accounting and financial accounting.
5. Explain the classification of costs.
6. What is a cost sheet? What are its advantages?

(C) True or False

1. Cost accounting means the process of accounting for cost.
2. Cost control is the guidance and regulation by executive action.
3. Direct materials are those materials which enter into and form part of the product.
4. Indirect materials are those which cannot be traced as a part of the product such as nails or success used in making furniture.
5. Cost centers is defined as a location, a person or an item of equipment or group of them in respect of which costs may be ascertained and related to cost units for the purpose of cost control.

(D) Multiple Choice Questions

1. Cost accounting means the process of accounting for.....
 - (a) Cost
 - (b) Materials
 - (c) Labour
 - (d) None of the above
2. What is the guidance and regulation by executive action?
 - (a) Cost center
 - (b) Cost control
 - (c) Material cost
 - (d) All the above
3. What are those materials which enter into and form part of the product?
 - (a) Direct materials
 - (b) Indirect materials
 - (c) Labours
 - (d) None of the above

(E) Fill in the Blanks**NOTES**

1.means the process of accounting for cost.
2.is the guidance and regulation by executive action.
3. Direct materials are those materials which enter into and form part of the.....
4.is defined as a location, a person or an item of equipment or group of them in respect of which costs may be ascertained and related to cost units for the purpose of cost control.

8.10 KEY TO CHECK YOUR ANSWER

- (C) 1. True, 2. True, 3. True, 4. True, 5. True
- (D) 1. (a) 2. (b) 3. (a)
- (E) 1. Cost accounting 2. Cost control 3. Product 4. Cost center

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NOTES

8.12 SUGGESTED READINGS

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8.13 TERMINAL QUESTIONS

1. State the steps involved in the installation of costing system.

UNIT 9

STANDARDS COSTING AND VARIANCE ANALYSIS

Structure:

- 9.1 Introduction
- 9.2 Meaning of Standard Costing
- 9.3 Advantages of Standard Costing
- 9.4 Limitations of Standard Costing
- 9.5 Determination of Standard Costs
- 9.6 Variance Analysis
- 9.7 Types of Variances
- 9.8 Advantages of Variance analysis
- 9.9 Practical Problems on Variance
- 9.10 Summary
- 9.11 Glossary
- 9.12 Check Your Progress (Multiple Choice/Objective Type Questions)
- 9.13 Key to Check Your Answer
- 9.14 Bibliography
- 9.15 Suggested Readings
- 9.16 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Standard Costing
- Variance Analysis

NOTES

9.1 INTRODUCTION

Standard costing is the establishment of cost standards for activities and their periodic analysis to determine the reasons for any variances. Standard costing is a tool that helps management accountant in controlling costs.

9.2 MEANING OF STANDARD COSTING

Standard Costing is a concept of accounting for determination of standard for each element of costs. These predetermined costs are compared with actual costs to find out the deviations known as “Variances.” Identification and analysis of causes for such variances and remedial measures should be taken in order to overcome the reasons for Variances

Chartered Institute of Management Accountants England defines Standard Costing as “the Preparation and use of standard costs, their comparison with actual costs and the analysis of variances to their causes and points of incidence.”

From the above definition, the technique of Standard Costing may be summarized as follows:

- (1) Determination of appropriate standards for each element of cost.
- (2) Ascertainment of information about actual and use of Standard Costs.
- (3) Comparison of actual costs with Standard Costs, the differences known as Variances.
- (4) Analysis of Variances to find out the causes of Variances.
- (5) Reporting to the responsible authority for taking remedial measures.

9.3 ADVANTAGES OF STANDARD COSTING

The following are the important advantages of standard costing:

- (1) It guides the management to evaluate the production performance.
- (2) It helps the management in fixing standards.
- (3) Standard costing is useful in formulating production planning and price policies.
- (4) It guides as a measuring rod for determination of variances.
- (5) It facilitates eliminating inefficiencies by taking corrective measures.
- (6) It acts as an effective tool of cost control.
- (7) It helps the management in taking important decisions.

(8) It facilitates the principle of “Management by Exception.”

(9) Effective cost reporting system is possible.

NOTES

9.4 LIMITATIONS OF STANDARD COSTING

Besides all the benefits derived from this system, it has a number of limitations which are given below:

- (1) Standard costing is expensive and a small concern may not meet the cost.
- (2) Due to lack of technical aspects, it is difficult to establish standards.
- (3) Standard costing cannot be applied in the case of a- concern where non-standardized products are produced.
- (4) Fixing of responsibility is difficult. Responsibility cannot be fixed in the case of uncontrollable variances.
- (5) Frequent revisions are required when insufficient staff is incapable of operating this system.
- (6) Adverse psychological effects and frequent technological changes will not be suitable for standard costing system.

9.5 DETERMINATION OF STANDARD COSTS

The following preliminary steps must be taken before determination of standard cost:

(1) Establishment of Cost Centres.

It is the first step required before setting of Standards. According to CIMA London Cost Centre is “a location, person or item of equipment for which costs may be ascertained and used for the purpose of cost control.” Cost centre is necessary for the determination of standard costs for each product and comparison of actual cost with the predetermined standards to ascertain the deviations to take corrective measures.

(2) Classification and Codification of Accounts

Classification of Accounts and Codification of different items of expenses and incomes help quick ascertainment and analysis of cost information.

(3) Types of Standards to be applied

Determination of the type of standard to be used is one of the important steps before setting up of standard cost. The different types of standards are given below:

NOTES

- (a) Ideal Standard
- (b) Basic Standard
- (c) Current Standard
- (d) Expected Standard
- (e) Normal Standard

(a) Ideal Standard: The term “Ideal Standard” refers to the standard which can be attained under the most favourable conditions possible. In other words, ideal standard is based on high degree of efficiency. It assumes that there is no wastage, no machine breakdown, no power failure, no labour ideal time in the production process. In practice it is difficult to attain this ideal standard.

(b) Basic Standard: This standard is otherwise known as Bogey Standard. Basic Standard which is established for use is unaltered over a long period of time. In other words this standard is fixed in relation to a base year and is not changed in response to changes in material costs, labour costs and other expenses as the case may be. The application of this standard has no practical importance from cost control and cost ascertainment point of view.

(c) Current Standard: The term “Current Standard” refers to “a standard established for use over a short period of time related to current conditions which reflects the performance that should be attained during the period.” These standards are more suitable and realistic for control purposes.

(d) Expected Standard: Expected Standard may be defined as “the standard which may be anticipated to be attained during a future specified budget period.” These standards set targets which can be achieved in a normal situation. As such it is more realistic than the Ideal Standard.

(e) Normal Standard: This standard represents an average standard in past which, it is anticipated, can be attained over a future period of time, preferably long enough to cover one trade cycle. The usefulness of such standards is very limited for the purpose of cost control.

(4) Organization for Standard Costing

The success of the standard costing system depends upon the reliability of standards. Hence the responsibility for setting standard is vested with the Standard Committee. It consists of

- (a) Purchase Manager
- (b) Production Manager
- (c) Personnel Manager

- (d) Time and Motion Study Engineers
- (e) Marketing Manager and Cost Accountant

NOTES

(5) Setting of Standard

The Standard Committee is responsible for setting standards for each element of costs as given below:

- I. Direct Material
- II. Direct Labour
- III. Overheads
 - (a) Fixed Overheads
 - (b) Variable Overheads

I. Standard for Direct Material Cost

The following are the standard involved in direct materials cost:

(i) Material Usage Standard: Material Usage Standard is prepared on the basis of material specifications and quality of materials required to manufacture a product. While setting of standards proper allowance should be provided for normal losses due to unavoidable occurrence of evaporation, breakage etc.

(ii) Material Price Standard: Material Price Standard is calculated by the Cost Accountant and the Purchase Manager for each type of materials. When this type of standard is used, it is essential to consider the important factors such as market conditions, forecasting relating to the trends of prices, discount etc.

II. Standard for Direct Labour Cost

The following standards are established:

- (i) Fixation of Standard Labour Time
- (ii) Fixation of Standard Rate

(i) Fixation of Standard Labour Time: Labour Standard time is fixed and it depends upon the nature of cost unit, nature of operations performed, Time and Motion Study etc. While determining the standard time normal ideal time is allowed for fatigue and other contingencies.

(ii) Fixation of Standard Rates: The standard rate fixed for each job will be determined on the basis of methods of wage payment such as Time Wage System, Piece Wage System, Differential Piece Rate System and Premium Plan etc.

NOTES

III. Setting Standards for Overheads

The following problems are involved while setting standards for overheads:

- (1) Determination of standard overhead cost
- (2) Estimating the production level of activity to be measured in terms of common base like machine hours, units of production and labour hours.

9.6 VARIANCE ANALYSIS

Standard Costing guides as a measuring rod to the management for determination of “Variances” in order to evaluate the production performance. The term “Variances” may be defined as the difference between Standard Cost and actual cost for each element of cost incurred during a particular period. The term “Variance Analysis” may be defined as the process of analyzing variance by subdividing the total variance in such a way that management can assign responsibility for off-Standard Performance.

The variance may be favourable variance or unfavorable variance. When the actual performance is better than the Standard, it presents “Favourable Variance.” Similarly, where actual performance is below the standard it is called as “Unfavourable Variance.”

9.7 TYPES OF VARIANCES

Variances may be broadly classified into the following categories:

1. Material Cost Variance: It is the difference between actual cost of materials used and the standard cost for the actual output.

2. Labour Cost Variance: It is the difference between the actual direct wages paid and the direct labour cost allowed for the actual output to be achieved.

3. Overhead Variance: Overhead variance is the difference between the standard cost of overhead allowed for actual output (in terms of production units or labour hours) and the actual overhead cost incurred.

4. Controllable Variance: A variance is controllable whenever an individual or a department or section or division may be held responsible for that variance.

According to ICMA, London, “Controllable cost variance is a cost variance which can be identified as primary responsibility of a specified person”.

5. Uncontrollable Variance: External factors are responsible for uncontrollable variances. The management has no power or is unable to control the external factors. Variances for which a particular person or a specific department or section or division cannot be held responsible are known as uncontrollable variances.

NOTES

6. Favourable Variances: Whenever the actual costs are lower than the standard costs at per-determined level of activity, such variances termed as favorable variances. The management is concentrating to get actual results at costs lower than the standard costs. It shows the efficiency of business operation.

7. Unfavorable Variances: Whenever the actual costs are more than the standard costs at predetermined level of activity, such variances termed as unfavorable variances. These variances indicate the inefficiency of business operation and need deeper analysis of these variances.

8. Basic Variances: Basic variances are those variances which arise on account of monetary rates (i.e. price of raw materials or labour rate) and also on account of non-monetary factors (such as physical units in quantity or time). Basic variances due to monetary factors are material price variance, labour rate variance and expenditure variance. Similarly, basic variance due to non-monetary factors are material quantity variance, labour efficiency variance and volume variance.

9. Sub Variance: Basic variances arising due to non-monetary factors are further analyzed and classified into sub-variances taking into account the factors responsible for them. Such sub variances are material usage variance and material mix variance of material quantity variance. Likewise, labour efficiency variance is subdivided into labour mix variance and labour yield variance. At the same time, variable overhead variance is sub-divided into variable overhead efficiency variance and variable overhead expenditure variance.

9.8 ADVANTAGES OF VARIANCE ANALYSIS

The following are the merits of variance analysis.

1. The reasons for the overall variances can be easily find out for taking remedial action.
2. The sub-division of variance analysis discloses the relationship prevailing between different variances.
3. It is highly useful for fixing responsibility of an individual or department or section for each variance separately.
4. It highlights all inefficient performances and the extent of inefficiency.
5. It is used for cost control.
6. The top management can follow the principle of management by exception. Only unfavorable variances are reporting to management.
7. Sometimes, the variances can be classified as controllable and uncontrollable variances. In this case, controllable variances are taken into consideration for further action.

NOTES

8. Profit planning work can be properly carried on by the top management.
9. The results of managerial action can be a cost reduction.
10. It creates cost consciousness in the minds of the every employee of business organization.

9.9 PRACTICAL PROBLEMS ON VARIANCE

Material Price Variance

Material Price Variance may be defined as the difference between the actual price and the standard price.

Material Price Variance = Actual Quantity \times (Standard Price – Actual Price)

$$\text{MPV} = \text{AQ} \times (\text{SP} - \text{AP})$$

Material Usage Variance

It is the difference between the actual quantity for material consumed and the standard quantity which should have been consumed.

Material Usage Variance = Standard Price \times (Standard Quantity – Actual Quantity)

$$\text{MUV} = \text{SP} \times (\text{SQ} - \text{AQ})$$

Material Cost Variance

Material Cost Variance = Standard Cost – Actual Cost

$$\text{MCV} = (\text{SQ} \times \text{SP}) - (\text{AQ} \times \text{AP})$$

Where, Standard Cost = Standard Quantity \times Standard Price

Actual Cost = Actual Quantity \times Actual Price

Illustration – 1

From the following information calculate. Material Cost Variance separately for P & Q

Material	Standard Quantity Kg	Standard Price ₹	Actual Quantity Kg	Actual Price ₹
P	20	2	25	2.5
Q	30	3	35	2.75

Solution:

Material Cost Variance = Standard Cost – Actual Cost

Where, Standard Cost = Standard Quantity \times Standard Price.

Actual Cost = Actual Quantity \times Actual Price.

Material Cost Variance = $(\text{SQ} \times \text{SP}) - (\text{AQ} \times \text{AP})$

Material P = $(20 \times 2) - (25 \times 2.5)$

= $40 - 62.50 = ₹ 22.50$ (Adverse)

$$\begin{aligned}\text{Material } Q &= (30 \times 3) - (35 \times 2.75) \\ &= 90 - 96.25 = ₹ 6.25 \text{ (Adverse)}\end{aligned}$$

NOTES

Illustration – 2

A product Z requires 25 units of standard materials at the rate of ₹ 5 per unit. The actual consumption of material for the manufacturing of product Z came to 20 units of material at the rate of ₹ 4 per unit. Calculate Material Price Variance.

Solution:

$$\begin{aligned}\text{Material Price Variance} &= \text{Actual Quantity} \times (\text{Standard Price} - \text{Actual Price}) \\ &= AQ \times (SP - AP)\end{aligned}$$

$$\begin{aligned}\text{Material Price Variance for Z} \\ &= 20 (5 - 4) = ₹ 20 \text{ (Favourable)}.\end{aligned}$$

Illustration – 3

The standard quantity and standard price of raw material required for one unit of product Z are given as follows.

	<i>Quantity</i>	<i>Standard Price</i>
Material A	2 Kgs	₹ 2 per unit
Material B	6 Kgs	₹ 4 per unit

The actual production and relevant data are as follows: Output 500 units of product Z.

	<i>Quantity</i>	<i>Total Cost</i>
Material A	1,200 Kgs	₹ 3,400
Material B	1,600 Kgs	₹ 3,900

Calculate Material Usage Variance.

Solution:

$$\text{Material Usage Variance} = \text{Standard Price} \times (\text{Standard Quantity} - \text{Actual Quantity})$$

$$\text{Standard Quantity for A} = 500 \text{ units} \times 2 = 1000 \text{ units.}$$

$$\text{Standard Quantity for B} = 500 \text{ units} \times 6 = 3000 \text{ units.}$$

$$\text{Material Usage Variance} = SP \times (SQ - AQ)$$

$$A = 2(1000 - 1200) = ₹ 400 \text{ (Adverse)}$$

$$B = 4(3000 - 1600)$$

$$= 4 \times 1400 = ₹ 5,600 \text{ (Favourable).}$$

Causes of Material Price Variance

The causes for material price variance are listed below:

- (1) Changes in the market conditions.
- (2) Buying in smaller quantities at frequent intervals.

NOTES

- (3) Cash discount not taken by the customers.
- (4) Transportation charges absorbed instead of being charged to the suppliers.

Causes of Material Usage Variance

- | | | |
|-------------------|-------------|---------------------------|
| 1. Due to wastage | 2. Spoilage | 3. Carelessness |
| 4. Pilferage | 5. Wastage | 6. Sub-standard materials |

Thus it may be noted that depending on the method of accounting employed by an organisation materials may be issued from the stores either at actual price or at standard price.

Illustration – 4

The standard material and standard cost per Kg of material required for the production of one unit of product *R* is as follows.

Material 10 Kgs

Standard price – ₹ 4 per Kg.

The actual production and related material data are as follows:

500 units of product *R*

Material used 3000 Kgs.

Price of material ₹ 5 per Kg.

- Calculate:
- (a) Material Cost Variance
 - (b) Material Usage Variance
 - (c) Material Price Variance.

Solution:

$$(a) \text{ Material Cost Variance} = (SQ \times SP) - (AQ \times AP)$$

$$\text{Standard Quantity} = 10 \text{ Kgs} \times 500 \text{ units} = 5000 \text{ units.}$$

$$\begin{aligned} \text{Material Cost Variance} &= (5000 \times 4) - (3000 \times 5) \\ &= 20,000 - 15,000 = ₹ 5,000 \text{ (favourable)} \end{aligned}$$

$$\begin{aligned} (b) \text{ Material Usage Variance} &= SP (SQ - AQ) \\ &= 4(5,000 - 3,000) \\ &= 4 \times 2,000 = ₹ 8,000 \text{ (favourable).} \end{aligned}$$

$$\begin{aligned} (c) \text{ Material Price Variance} &= AQ \times (SP - AP) \\ &= 3,000 \times (4 - 5) = ₹ 3,000 \text{ (Adverse).} \end{aligned}$$

The Material Usage Variance can be sub-divided into two component namely –

- (1) Material Mix Variance and
- (2) Material Yield Variance

Material Mix Variance

Material Mix Variance is that portion of the direct material usage variance which is the difference between the actual quantities of ingredients used when

mixed at standard price and the total quantity of ingredients used at the weighted average price per unit of ingredients as shown by the standard cost sheets.

NOTES

The mix variance arises because of changing the proportion in which the different ingredients in the mixture are combined to produce a given product. Scarcity of one ingredient for example may necessitate using a different ingredient in larger quantities.

$$\text{Material Mix Variance} = \text{Standard Price} \times (\text{Revised Standard Proportion of Actual Input} - \text{Actual Proportion})$$

Illustration – 5

Calculate the material mix variance from the following data:

<i>Particulars</i>	<i>Standard</i>	<i>Actual</i>
Material A	50 Kgs @ ₹ 5	40 Kgs @ ₹ 6
Material B	30 Kgs @ ₹ 6	40 Kgs @ ₹ 5
	80 Kgs	80 Kgs

Solution:

The material mix variance can be determined by computing the material usage variances for each of the ingredients at standard rates and adding them up. Thus:

$$\text{Material A} - ₹ 5 (50 - 40) = ₹ 50 \text{ (Favourable).}$$

$$\text{Material B} - ₹ 6 (30 - 40) = ₹ 60 \text{ (Adverse)}$$

$$\text{Material Mix Variance} = ₹ 10 \text{ (Adverse)}$$

Illustration – 6

From the information given below, compute the material mix variance

<i>Particulars</i>	<i>Standard</i>	<i>Actual</i>
R 40 Kgs @ ₹ 50 per kg		50 Kgs @ ₹ 50 per kg
S 60 Kgs @ ₹ 40 per kg		60 Kgs @ ₹ 45 per kg
	100 Kgs	110 Kgs

Solution:

$$\text{Material Mix Variance} = \text{Standard Price} \times (\text{Revised Standard Proportion of actual input} - \text{Actual Proportion})$$

Revised Standard proportion of actual input is calculated as follows:

Revised Standard proportion =

$$\frac{\text{Standard Mix}}{\text{Total Standard input}} \times \text{Total Actual Input}$$

$$R = \frac{40}{100} \times 110 = 44 \text{ units}$$

$$S = \frac{60}{100} \times 110 = 66 \text{ units}$$

NOTES

Material Mix Variance of

$$R = (44 - 50) \times 50 = ₹ 300 \text{ (Adverse)}$$

$$S = (66 - 60) \times 40 = ₹ 240 \text{ (Favourable)}$$

$$\text{Total Material Mix Variance} = ₹ 60 \text{ (Adverse)}$$

Material Yield Variance

It is that portion of the direct material usage which is the difference between the standard cost of the production achieved whether completed or not and the actual cost of that production arrived at by multiplying the actual cost of that production, arrived at by the weighted average price per unit as shown by the standard cost sheet.

The yield variance arises because of the difference between the standard yield specified and the actual yield obtained. This is generally due to abnormal losses in production, qualitative difference in input such as dampness in the material.

$$\text{Material Yield Variance} = (\text{Actual Loss on Actual Input} - \text{Standard Loss on Actual Input}) \times \text{Average Standard Price per Unit.}$$

$$\text{Where Average Standard Price Per Unit} = \frac{\text{Total Cost}}{\text{Standard Output}}$$

Illustration – 7

Calculate material yield variance from the information given below:

<i>Particulars</i>	<i>Standard</i>	<i>Actual</i>
Material X	200 Kgs @ $\times 5 = ₹ 1000$	200 Kgs @ $\times 5 = ₹ 1000$
Material Y	500 Kgs @ $\times 3 = ₹ 1500$	500 Kgs @ $\times 3 = ₹ 1500$
	700 Kgs	700 Kgs
Less: Wastage	75 Kgs	100 Kgs
	625 Kgs	600 Kgs
	₹ 2,500	₹ 2,500

Solution:

$$\text{Material Yield Variance} = (\text{Actual Loss on Actual Input} - \text{Standard Loss on Actual Input}) \times \text{Average Standard Price Per Unit}$$

$$\text{Average Standard Price Per Unit} = \frac{\text{Total Cost}}{\text{Standard Output}} = \frac{2500}{625} = ₹ 4 \text{ per unit}$$

$$\text{Material Yield Variance} = (100 - 75) \times 4 = ₹ 100 \text{ (Adverse)}$$

Illustration – 8

Given the following information calculate –

- | | |
|------------------------------|---------------------------------|
| (1) Material Cost Variance | (2) Material Price Variance |
| (3) Material Mix Variance | (4) Material Usage Variance and |
| (5) Material Yield Variance. | |

<i>Material</i>	<i>Standard</i>			<i>Actual</i>		
	<i>Qty</i>	<i>Rate</i>	<i>Amt</i>	<i>Qty</i>	<i>Rate</i>	<i>Amt</i>
<i>X</i>	500	5	2,500	300	5	1,500
<i>Y</i>	400	4	1,600	600	4	2,400
<i>Z</i>	300	3	900	400	3	1,200
	1,200			1,300		
Less: 10% Normal Loss	120		Actual Loss	220		
	1,080		5,000	1,080		5,100

Solution:

(1) Material Cost Variance = Standard Cost – Actual Cost

$$= SQ \times SP - (AQ \times AP)$$

$$\text{Material } X = (500 \times 5) - (300 \times 5)$$

$$= 2,500 - 1,500 = ₹ 1000 \text{ (favourable)}$$

$$Y = 1,600 - 2,400 = ₹ 800 \text{ (adverse)}$$

$$Z = 900 - 1,200 = ₹ 300 \text{ (adverse)}$$

$$\text{Total Material Cost Variance} = ₹ 100 \text{ (Adverse)}$$

(2) Material Price Variance = $AQ (SP - AP)$

$$\text{Material } X = 300 (5 - 5) = 0$$

$$Y = 600 (4 - 4) = 0$$

$$Z = 400 (3 - 3) = 0$$

$$\text{Total material price variance} = 0$$

(3) Material Mix Variance = Standard Price (Revised Standard Mix of actual input – Actual Mix)

$$\text{Revised Standard Mix of actual input} = \frac{\text{Standard Mix}}{\text{Total Standard input}} \times \text{Total actual input}$$

$$X = \frac{500}{1200} \times 1,300 = 541.67 \text{ Kgs}$$

$$Y = \frac{400}{1200} \times 1,300 = 433.33 \text{ Kgs}$$

$$Z = \frac{300}{1200} \times 1,300 = 325 \text{ Kgs}$$

Material Mix Variance

$$\text{Material } X = 5 (541.67 - 300) = ₹ 1208.35 \text{ (Favourable)}$$

$$Y = 4 (433.33 - 600) = ₹ 666.68 \text{ (Adverse)}$$

$$Z = 3 (325 - 400) = ₹ 225 \text{ (Adverse)}$$

$$\text{Total} = ₹ 316.67 \text{ (favourable.)}$$

NOTES

(4) Material Usage Variance = Standard Price (Standard Quantity – Actual Quantity)

$$\text{Material } X = 5 (500 - 300) = ₹ 1000 \text{ (Favourable)}$$

$$Y = 4 (400 - 600) = ₹ 800 \text{ (Adverse)}$$

$$Z = 3 (300 - 400) = ₹ 300 \text{ (Adverse).}$$

$$\text{Total} = ₹ 100 \text{ (Adverse).}$$

(5) Material Yield Variance = Average Standard price per unit × (Standard Loss on Actual Input – Actual Loss)

$$\begin{aligned} \text{Average Standard Price} &= \frac{\text{Total Standard Cost}}{\text{Total Standard Output}} \\ &= \frac{5000}{1080} = ₹ 4.63 \text{ per unit} \end{aligned}$$

$$\text{Material Yield Variance} = 4.63 (130 - 220) = ₹ 416.70 \text{ (Adverse)}$$

Direct Wages Cost Variance

The *ICMA* terminology defines direct labour Cost variance as “the difference between the standard direct wages specified for the production achieved whether completed or not and actual direct wages incurred.

$$\text{Labour Cost Variance} = \text{Standard Labour Cost of actual Output} - \text{Actual Labour Cost}$$

$$\text{or Labour Cost Variance} = SC - AC$$

$$SC = \text{Standard Cost}$$

$$AC = \text{Actual Cost}$$

$$\text{or Labour Cost Variance} = (SH \times SR) - (AH \times AR)$$

$$SH = \text{Standard Hours}$$

$$SR = \text{Standard Rate}$$

$$AH = \text{Actual Hours}$$

$$AR = \text{Actual Rate.}$$

Illustration – 9

Calculate Labour Cost Variance with the information given below:

Actual Rate – ₹ 4 per hour

Actual Hours – 16,000 hours

Actual Production – 1,200 units

Standard Rate – ₹ 4.60 per hour

Standard hours per unit – 20.

Solution:

$$\begin{aligned} \text{Labour Cost Variance} &= (\text{Standard Hours for actual output} \times \\ &\quad \text{Standard Rate}) - (\text{Actual Hours} \times \text{Actual Rate}) \\ &= (1,200 \times 20) \times 4.60 - (16,000 \times 4) \end{aligned}$$

$$= 1,10,400 - 64,000$$

$$= ₹ 46,400 \text{ (Favourable)}$$

NOTES

Direct Wages Cost Variance is broken down into two components namely-

- (a) Direct Wages Rate Variance and
- (b) Direct Wages Efficiency Variance.

Direct Wages Rate Variance

The *ICMA* terminology defines the direct wages rate variance as “that portion of the Direct Wages Cost Variance, which is due to the difference between the standard rate of pay specified and the actual rate paid”.

$$\text{Direct Actual Rate} = \text{Actual Hours} \times (\text{Standard Rate} - \text{Actual Rate})$$

Illustration – 10

M/S Anandi Ltd manufactures a particular article, the standard direct labour cost of which is ₹ 120 per unit as given below:

<i>Type of workers</i>	<i>Hours</i>	<i>Rate</i>	<i>Amount Rate</i>
X	20	3	60
Y	30	2	60
	50		120

During a period, 110 units of the article were manufactured, the actual labour cost of which was as follows:

<i>Type of workers</i>	<i>Hours</i>	<i>Rate</i>	<i>Amount (₹)</i>
X	4,000	2	8,000
Y	2,000	3	6,000
	6,000		14,000

Calculate Labour Rate Variance.

Solution:

$$X = 4,000 (3 - 2) = ₹ 4,000 \text{ (Favourable)}$$

$$Y = 2,000 (2 - 3) = ₹ 2,000 \text{ (Adverse)}$$

$$\text{Total Labour Rate Variance} = ₹ 2,000 \text{ (Favourable)}$$

Direct Wages Efficiency Variance

The *ICMA* terminology defines the Direct Wages Efficiency Variance as “that portion of the direct wages cost variance which is the difference between the standard direct wages cost for the production achieved, whether completed or not, and the actual hours at standard rates (plus incentive bonus if any)”.

$$\text{Direct Wages Efficiency Variance} = \text{Standard Rate} \times (\text{Standard Time for actual output} - \text{Actual Time})$$

$$\text{Or, Direct Wages Efficiency Variance} = SR (ST - AT)$$

NOTES

Illustration – 11

Sri Shanmugam & Sons Furnishes you the following data Compute Labour Efficiency Variance.

Standard labour hours unit	50 hours
Standard labour rate per hour	₹ 4
Actual production	100 units
Actual labour rate per unit	₹ 5
Actual labour for production	4,000 hours

Solution:

$$\text{Standard Time} = 100 \text{ units} \times 50 = 5,000 \text{ hours}$$

$$\text{Labour Efficiency Variance} = SR (ST - AT) = 4 (5,000 - 4,000) = ₹ 4,000 \text{ (favourable)}$$

Causes of wage rate variance may be due to the following factors:

- (1) Change in basic wage rate
- (2) Employing people of different grades than anticipated.
- (3) Excessive Overtime

Causes of Labour Efficiency Variances

- (1) Defective equipments, tools and material
- (2) Bad Supervision
- (3) Poor working conditions
- (4) Dissatisfaction among the workers
- (5) Production Delays
- (6) Instruction not available at appropriate times
- (7) Bad workmanship

Classification of Labour Efficiency Variance

It can be further divided into following:

- (i) Idle Time Variance
- (ii) Labour Mix Variance
- (iii) Labour Yield Variance

(i) Idle Time Variance

This variance arises whenever there is an abnormal idle time caused by power failure, machine breakdown etc. This variance will always be unfavourable. It is calculated as follows:

$$\text{Idle Time Variance} = \text{Idle hours} \times \text{Standard Rate per hour}$$

Illustration – 12

100 workers are working in a factory at a standard wage rate of ₹ 4.80 per hour. The standard performance is set at 360 units per hour. The actual production

was 56,000 units. There was a power failure which stopped production for 2 hours. Calculate idle time variance.

NOTES

Solution:

Idle time variance = Idle hours x Standard Rate per hour

Idle hours = 100 workers @ 2 hrs = 200 hrs

Idle time variance = 200 hrs x 4.80 = ₹ 960 Adverse

(ii) Labour Mix Variance or Gang Composition Variance

This is similar to the material mix variance and arises because of a change in the composition of the work force. This may arise when skilled labour is made to do the job normally done by unskilled labour.

Labour Mix Variance = Standard Rate x (Revised Standard hours – Actual Hours)

Where Revised standard hour = $\frac{\text{Std. hours of the grade}}{\text{Total Standard hours}} \times \text{Total actual hours}$

Illustration – 13

A reputed firm gives the detail of grade A & B worker the standard direct labour cost of which is ₹ 100 per unit. The details are given below:

Grade of workers	Hours	Rate (₹)	Amount(₹)
A	25	2.5	62.50
B	20	2	40.00
	45		102.50

During a period 80 unit of the product were produced, the actual labour cost of which are as follows.

Grade of workers	Hours	Rate (₹)	Amount(₹)
A	3,000	2	6,000
B	1,600	3	4,800
	4,600		10,800

Calculate Labour Mix Variance.

Solution:

Labour Mix Variance = Standard Rate x (Revised Standard Hours – Actual Hours)

Revised Standard Hours = $\frac{\text{Standard hours of the grade}}{\text{Total Standard hours}} \times \text{Total Actual Hours}$

Standard hours of the Grade

A = 25 x 80 = 2,000

B = 20 x 80 = 1,600

Total = 3,600

NOTES

$$\text{Revised Standard hours: Grade A} = \frac{2000}{3600} \times 4600 = \mathbf{2,556 \text{ hrs.}}$$

$$\text{Grade B} = \frac{1600}{3600} \times 4600 = \mathbf{2,044 \text{ hrs.}}$$

Labour Mix Variance

$$\text{Grade A} = 2.5 (2,556 - 3,000) = 1110 \text{ (Adverse)}$$

$$\text{B} = 2 (2,044 - 1,600) = 888 \text{ (Favourable)}$$

$$\text{Total Labour Mix Variance} = \mathbf{₹ 222 \text{ (Adverse)}}$$

Labour Yield Variance

This variance is similar to Material Yield Variance. This Variance reveals the effect on labour Cost of actual output or yield being more or less than the standard yield.

$$\text{Labour Yield Variance} = (\text{Actual Yield} - \text{Standard yield from actual input}) \times \text{Standard labour Cost per unit of output}$$

Illustration – 14

Standard Time	1,500 hours
Standard Rate	₹ 15 per hour
Actual Output	450 units
Standard Output	500 units.
Calculate Labour Yield Variance.	

Solution:

$$\text{Standard Time per unit} = 1,500 \text{ hours, } 500 \text{ units} = 3 \text{ hours}$$

$$\text{Standard Cost per unit} = 3 \text{ hours @ } ₹ 15 = ₹ 45$$

$$\begin{aligned} \text{Labour Yield Variance} &= (\text{Actual Yield} - \text{Standard Yield}) \times \text{Standard Output Rate} \\ &= (450 - 500) \times 45 = ₹ 2,250 \text{ (Adverse)} \end{aligned}$$

Illustration – 15

The details regarding the composition and the weekly wages rates of labour force engaged on a job scheduled to be completed in 30 weeks are as follows.

<i>Category of workers</i>	Standard		Actual	
	<i>No. of Labourers</i>	<i>weekly wage Rate per labourer</i>	<i>No. of Labourers</i>	<i>weekly wage rate per labourer</i>
Skilled	75	60	70	70
Semi-Skilled	45	40	30	50
Unskilled	60	30	80	20

The work is actually completed in 32 weeks calculate the various labour variances.

Solution:**NOTES**

(1) Labour Cost Variance = Standard Cost of Labour – Actual Cost of Labour

$$\begin{aligned}\text{Skilled} &= (75 \times 30 \times 60) - (70 \times 32 \times 70) \\ &= 1,35,000 - 1,56,800 = ₹ 21,800 \text{ (Adverse)}\end{aligned}$$

$$\begin{aligned}\text{Semi-Skilled} &= (45 \times 30 \times 40) - (30 \times 32 \times 50) \\ &= 54,000 - 48,000 = ₹ 6,000 \text{ (Favourable)}\end{aligned}$$

$$\begin{aligned}\text{Unskilled} &= (60 \times 30 \times 30) - (80 \times 32 \times 20) \\ &= 54,000 - 51,200 = ₹ 2,800 \text{ (Favourable)}\end{aligned}$$

$$\text{Total Labour Cost Variance} = ₹ 13,000 \text{ (Adverse)}$$

(2) Labour Rate Variance = Actual Hours x (Standard Rate – Actual Rates)

$$\text{Skilled} = 70 \times 32 \times (60 - 70) = ₹ 22,400 \text{ (Adverse)}$$

$$\text{Semi-Skilled} = 30 \times 32 \times (40 - 50) = ₹ 9,600 \text{ (Adverse)}$$

$$\text{Unskilled} = 80 \times 32 \times (30 - 20) = ₹ 25,600 \text{ (Favourable)}$$

$$\text{Total Labour Rate Variance} = ₹ 6,400 \text{ (Adverse)}$$

(3) Labour Efficiency Variance = Standard Rate x (Standard Hours – Actual Hours)

$$\text{Skilled} = 60 [(75 \times 30) - (70 \times 32)] = ₹ 600 \text{ (Favorable)}$$

$$\begin{aligned}\text{Semi-Skilled} &= 40[(45 \times 30) - (30 \times 32)] = ₹ 15,600 \\ &\text{(Favourable)}\end{aligned}$$

$$\begin{aligned}\text{Un-skilled} &= 30 [(60 \times 30) - (80 \times 32)] = ₹ 22,800 \\ &\text{(Adverse)}.\end{aligned}$$

$$\text{Total Labour Efficiency Variance} = ₹ 6,600 \text{ (Adverse)}$$

Verification:

Labour Cost Variance = Labour Rate Variance + Labour Efficiency Variance

$$₹ 13,000 \text{ Adverse} = ₹ 6,400 \text{ Adverse} + ₹ 6,600 \text{ Adverse}$$

$$L.H.S. = R.H.S.$$

(4) Labour Mix Variance = Standard Rate x (Revised Standard Time – Actual Time)

Revised Standard Time is calculated as follows:

Revised Standard Time =

$$\frac{\text{Standard hours of the Grade}}{\text{Total Standard Hours}} \times \text{Total Actual Hours}$$

$$\text{Skilled} = \frac{2250}{5400} \times 5,760 = 2,400 \text{ hours}$$

$$\text{Semi-Skilled} = \frac{1,350}{5,400} \times 5,760 = 1,440 \text{ hours}$$

$$\text{Un-skilled} = \frac{1,800}{5,400} \times 5,760 = 1,920 \text{ hours}$$

NOTES

Calculation of Standard Weeks and Actual Weeks

	Standard	Actual
Skilled	$75 \times 30 = 2,250$	$70 \times 32 = 2,240$
Semi-Skilled	$45 \times 30 = 1,350$	$30 \times 32 = 960$
Unskilled	$60 \times 30 = 1,800$	$80 \times 32 = 2,560$
Total	5,400	5,760

Labour Mix Variance = (Revised Standard Time – Actual Time) × Std Rate

Skilled = $(2,400 - 2,240) \times 60 = ₹ 9,600$ (Favourable)

Semi-Skilled = $(1,440 - 960) \times 40 = ₹ 19,200$ (Favourable)

Unskilled = $(1,920 - 2,560) \times 30 = ₹ 19,200$ (Adverse)

Total Material Mix Variance = **₹ 9,600** (Favourable)

Illustration – 16

The standard material required to manufacture 1 unit of product 'X' is 10 kgs and the standard price per Kg of material is ₹ 25. The cost accounts records however reveal that 11,500 kgs materials costing ₹ 2,75,000 were used for manufacturing 1,000 units of product 'X'. Calculate Material variances.

Solution:

Standard wages = 1,000 units × 10 kgs = 10,000 kgs

Actual Rate = $\frac{2,76,000}{11,500} = ₹ 24$

- (1) Material Cost Variance = Standard Cost – Actual Cost
 $= (SQ \times SR) - (AQ \times AR)$
 $= (10,000 \times 25) - (11,500 \times 24) = 2,50,000 - 2,76,000$
 $= \mathbf{26,000}$ (Adverse)
- (2) Material Price Variance = Actual Quantity × (Std Rate – Actual Rate)
 $= 11,500 (25 - 24) = 11,500 \times 1 = 11,500$ (Favourable)
 $= \mathbf{11,500}$ (Favourable)
- (3) Material usage Variance = Standard Price × (Standard Quantity – Actual Quantity)
 $= 25(10,000 - 11,500)$
 $= 25 \times (-1,500)$
 $= \mathbf{37,500}$ (Adverse)

Illustration – 17

The standard materials required for producing 200 units is 250 Kgs. The standard price of 0.60 paise per Kg 2,50,000 units were produced during the period. Actual materials purchased were 3,20,000 Kgs at a cost of ₹ 1,95,200.

From the above Calculate

- (a) Material Cost Variance
- (b) Material Price Variance
- (c) Material Usage Variance.

NOTES

Solution:

Actual Quantity = 3,20,000 Kgs

Actual Rate = $\frac{1,95,200}{3,20,000} = 0.61$ paise

Standard Quantity –

For 200 units – 250 Kgs

For 2,50,000 units = $\frac{2,50,000 \times 250}{200} = 3,12,500$ Kgs

Standard Rate = 0.60 paise.

- (1) Material Cost Variance = Standard Cost – Actual Cost
 $= (SQ \times SR) - (AQ \times AR)$
 $= (3,12,500 \times 0.60) - (3,20,000 \times 0.61)$
 $= 1,87,500 - 1,95,200$
 $= ₹ 7,700$ (Adverse)
- (2) Material Price Variance = Actual Quantity × (Std Rate – Actual Rate)
 $= 3,20,000 (0.60 - 0.61)$
 $= ₹ 3,200$ (Adverse)
- (3) Material usage Variance = Standard Price × (Standard Quantity – Actual Quantity)
 $= 0.60(3,12,500 - 3,20,000)$
 $= 0.60 \times 7,500$
 $= ₹ 4,500$ (Adverse)

Illustration – 18

The following information is obtained from a standard Cost Card.

Labour Rate = ₹ 1.80 per hour

Hours – 4 hours per unit

Actual production data are: Units produced – 400 units

Labour Rate – ₹ 1.90 per hour

Hour worked – 1,500

- Calculate: (a) Labour Cost Variance
 (b) Labour Rate Variance
 (c) Labour Efficiency Variance.

Solution:

Standard Rate = ₹ 1.80

Standard Time = 4 hrs @ 400 units = 1,600 hrs

NOTES

Actual Time = 1,500 hrs.

Actual Rate = ₹ 1.9.

- (1) Labour Cost Variance = Standard Cost – Actual Cost
 $= (1,600 \times 1.80) - (1,500 \times 1.9)$
 $= 2,880 - 2,850 = ₹ 30$ (Favourable)
- (2) Labour Rate Variance = Actual Time (Standard Rate – Actual Rate)
 $= 1,500 (1.80 - 1.90) = ₹ 150$ (Adverse)
- (3) Labour Efficiency Variance = Standard Rate x (Standard Time – Actual Time)
 $= 1.80 \times (1,600 - 1,500) = ₹ 180$ (Favourable)

Illustration – 19

From the following information compute:

- (a) Material Cost Variance
 (b) Material Price Variance
 (c) Material Usage Variance

Standard Quantity of materials per unit 4 Kgs. standard price per Kg of Materials ₹ 50.

Actual Production 1,000 units

Materials actually used 4,300 Kgs

Actual Purchase price of material per Kg ₹ 55

Solution:

Standard Quantity = 1,000 units @ x 4 Kgs per unit = 4,000 Kgs

Standard Rate = ₹ 50

Actual Quantity = 4,300 Kgs

Actual Rate = ₹ 55

- (1) Material Cost Variance = Standard Cost – Actual Cost
 $= (SQ \times SR) - (AQ \times AR)$
 $= (4,000 \times 50) - (4,300 \times 55)$
 $= 2,00,000 - 2,36,500 = ₹ 36,500$ (Adverse)
- (2) Material Price Variance = Actual Quantity x (Standard Rate – Actual Rate)
 $= 4,300 \times (50 - 55) = ₹ 21,500$ (Adverse)
- (3) Material Usage Variance = Standard Rate x (Standard Quantity – Actual Quantity)
 $= 50 \times (4,000 - 4,300) = ₹ 15,000$ (Adverse)

Illustration – 20

The Standard Material cost to prepare a ton of chemical X is

200 Kgs. of material A @ ₹ 10 per Kg

300 Kgs of material B @ ₹ 5 per Kg

400 Kgs of material C @ ₹ 7 per Kg

During a year 100 tons of material *X* were produced from the usage of
 30 tons of material A at a Cost of ₹ 9 per ton
 40 tons of material B at a Cost of ₹ 6 per ton
 50 tons of material C at a Cost of ₹ 7 per ton.

NOTES

Calculate: (a) Material Cost Variance
 (b) Material Price Variance
 (c) Material Usage Variance.

Solution:**Computation of Standard Qty and Actual Qty**

<i>Std Qty</i>	<i>Std Rate</i>	<i>Std Amt</i>	<i>Actual Qty</i>	<i>Actual Rate</i>	<i>Actual Amt</i>
20,000	10	2,00,000	30,000	9	2,70,000
30,000	5	1,50,000	40,000	6	2,40,000
40,000	7	2,80,000	50,000	7	3,50,000
Kgs. 90,000		₹ 6,30,000	Kgs. 1,20,000		₹ 8,60,000

- (1) Material Cost Variance = Standard Cost – Actual Cost
 = 6,30,000 – 8,60,000 = 2,30,000 (Adverse)
- (2) Material Price Variance = Actual Quantity x (Std Rate – Actual Rate)
 = 30,000 (10-9) = 30,000 (Favourable)
 = 40,000 (5 -6) = 40,000 (Adverse)
 = 50,000 (7 – 7) = _____

Total Material Price Variance = ₹ 10,000 (Adverse)

- (3) Material Usage Variance = Standard Rate x (Standard Quantity – Actual Quantity)
 = 10 (20,000 – 30,000) = ₹ 1,00,000 (Adverse)
 = 5 (30,000 – 40,000) = ₹ 50,000 (Adverse)
 = 7 (40,000 – 50,000) = ₹ 70,000 (Adverse)

Total Material Usage Variance = ₹ 2,20,000 (Adverse)

Illustration – 21

The following information is obtained from a standard cost card.

Labour rate - ₹ 1.80 per hour

Hours - 4 hour per unit

Actual production data are:

Units produced - 400 units

Labour rate - ₹ 1.90 per hour

Hour worked - 1,500

Calculate: (a) Labour cost variance
 (b) Labour rate variance and
 (c) Labour efficiency variance

NOTES

Solution:

Given, Standard labour rate ₹ 1.80 per hour

Standard time 4 hours per unit

∴ for 400 units = $4 \times 400 = 1,600$ hours

Actual rate 1.90 per hours

Actual time = 1,500 hours

(a) Labour cost variance:

= (Standard rate \times Standard time – Actual time \times actual rate)

= $(1,600 \times 1.80 - 1,500 \times 1.90)$

= $(2,880 - 2,850) = ₹ 30$ (Favourable)

(b) Labour rate variance

= Actual time (Standard rate – Actual rate)

= $1,500 (1.80 - 1.90)$

= $1,500 \times (-0.1) = ₹ 150$ (unfavourable)

(c) Labour efficiency variances

= Standard rate (Standard – Actual time)

= $1.80 (1,600 - 1,500)$

= $1.80 \times 100 = ₹ 180$ (favourable)

9.10 SUMMARY

Standard costing is the establishment of cost standards for activities and their periodic analysis to determine the reasons for any variances. Standard costing is a tool that helps management accountant in controlling costs.

Standard Costing is a concept of accounting for determination of standard for each element of costs. These predetermined costs are compared with actual costs to find out the deviations known as “Variances.” Identification and analysis of causes for such variances and remedial measures should be taken in order to overcome the reasons for Variances

The term “Ideal Standard” refers to the standard which can be attained under the most favourable conditions possible. In other words, ideal standard is based on high degree of efficiency. It assumes that there is no wastage, no machine breakdown, no power failure, no labour ideal time in the production process. In practice it is difficult to attain this ideal standard.

The term “Current Standard” refers to “a standard established for use over a short period of time related to current conditions which reflects the performance that should be attained during the period.” These standards are more suitable and realistic for control purposes.

NOTES

Expected Standard may be defined as “the standard which may be anticipated to be attained during a future specified budget period.” These standards set targets which can be achieved in a normal situation. As such it is more realistic than the Ideal Standard.

This standard represents an average standard in past which, it is anticipated, can be attained over a future period of time, preferably long enough to cover one trade cycle. The usefulness of such standards is very limited for the purpose of cost control.

Material Usage Standard is prepared on the basis of material specifications and quality of materials required to manufacture a product. While setting of standards proper allowance should be provided for normal losses due to unavoidable occurrence of evaporation, breakage etc.

Labour Standard time is fixed and it depends upon the nature of cost unit, nature of operations performed, Time and Motion Study etc. While determining the standard time normal ideal time is allowed for fatigue and other contingencies.

The term “Variance Analysis” may be defined as the process of analyzing variance by subdividing the total variance in such a way that management can assign responsibility for off-Standard Performance.

A variance is controllable whenever an individual or a department or section or division may be held responsible for that variance.

According to ICMA, London, “Controllable cost variance is a cost variance which can be identified as primary responsibility of a specified person”.

External factors are responsible for uncontrollable variances. The management has no power or is unable to control the external factors. Variances for which a particular person or a specific department or section or division cannot be held responsible are known as uncontrollable variances.

9.11 GLOSSARY

- (a) **Standard costing:** Standard costing is the establishment of cost standards for activities and their periodic analysis to determine the reasons for any variances. Standard costing is a tool that helps management account in controlling costs.
- (b) **Ideal Standard:** The term “Ideal Standard” refers to the standard which can be attained under the most favourable conditions possible. In other words, ideal standard is based on high degree of efficiency. It assumes that there is no wastage, no machine breakdown, no power failure, no labour ideal time in the production process. In practice it is difficult to attain this ideal standard.

NOTES

- (c) **Basic Standard:** This standard is otherwise known as Bogey Standard. Basic Standard which is established for use is unaltered over a long period of time.
- (d) **Current Standard:** The term “Current Standard” refers to “a standard established for use over a short period of time related to current conditions which reflects the performance that should be attained during the period.” These standards are more suitable and realistic for control purposes.
- (e) **Normal Standard:** This standard resents an average standard in past which, it is anticipated, can be attained over a future period of time, preferably long enough to cover one trade cycle. The usefulness of such standards is very

9.12 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. Give the meaning of Standard Costing.
2. What is Direct Material?
3. What is Direct Labour?
4. What is Variance Analysis?
5. What is Material Cost Variance?
6. What is Labour Cost Variance?
7. What is Overhead Variance?

(B) Extended Answer Questions

1. Discuss various advantages of Standard Costing.
2. Explain limitations of Standard Costing.
3. Explain the determination of Standard Costs.
4. Discuss various types of Variances.
5. Explain advantages of Variance analysis.

(C) True or False

1. Standard costing is the establishment of cost standards for activities and their periodic analysis to determine the reasons for any variances.
2. Basic Standard is established for use is unaltered over a long period of time.

3. Material Usage Standard is prepared on the basis of material specifications and quality of materials required to manufacture a product.
4. Labour Standard time is fixed and it depends upon the nature of cost unit, nature of operations performed, Time and Motion Study etc.
5. The term “Variance Analysis” may be defined as the process of analyzing variance by subdividing the total variance in such a way that management can assign responsibility for off-Standard Performance.

NOTES

(D) Multiple Choice Questions

1. What is the establishment of cost standards for activities and their periodic analysis to determine the reasons for any variances?
 - (a) Labour Cost
 - (b) Standard costing
 - (c) Material Cost
 - (d) All the above
2. What is defined as the process of analyzing variance by subdividing the total variance in such a way that management can assign responsibility for off-Standard Performance?
 - (a) Variance Analysis
 - (b) Standard Costing
 - (c) Material Cost
 - (d) None of the above

(E) Fill in the Blanks

1.is the establishment of cost standards for activities and their periodic analysis to determine the reasons for any variances.
2.which is established for use is unaltered over a long period of time.
3. Material Usage Standard is prepared on the basis of material specifications and quality of materials required to.....
4. Labour Standard time is fixed and it depends upon the nature of cost unit, nature of operations performed
5.may be defined as the process of analyzing variance by subdividing the total variance in such a way that management can assign responsibility for off-Standard Performance.

9.13 KEY TO CHECK YOUR ANSWER

- (C) 1. True, 2. True, 3. True, 4. True, 5. True
- (D) 1. (b), 2. (a)
- (E) 1. Standard costing, 2. Basic Standard, 3. Manufacture a product, 4. Time and Motion Study, 5. “Variance Analysis”

NOTES

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9.15 SUGGESTED READINGS

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9.16 TERMINAL QUESTIONS

1. Why "Basic Standard" is known as "Bogey Standard"? Discuss.

UNIT 10

PROCESS COSTING AND SINGLE AND OUTPUT COSTING

Structure:

- 10.1 Introduction
- 10.2 Meaning and definition of Process Costing
- 10.3 Characteristics of Process Costing
- 10.4 Advantages of Process Costing
- 10.5 Disadvantages of Process Costing
- 10.6 Procedure of Process Costing
- 10.7 Practical Problems on Process Costing
- 10.8 Single and Output Costing
- 10.9 Summary
- 10.10 Glossary
- 10.11 Check Your Progress (Multiple Choice/Objective Type Questions)
- 10.12 Key to Check Your Answer
- 10.13 Bibliography
- 10.14 Suggested Readings
- 10.15 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Process Costing
- Single and Output Costing

NOTES

10.1 INTRODUCTION

Process costing is a term used in cost accounting to describe one method for collecting and assigning manufacturing costs to the units produced. Processing cost is used when nearly identical units are mass produced. Process Costing is a method of costing. It is employed where each similar units of production involved in different series of process from conversion of raw materials into finished output. Thus, unit cost is determined on the basis of accumulated costs of each operation or at each stage of manufacturing a product. The application of process costing where industries adopting costing procedure for continuous or mass production. Textiles, chemical works, cement industries, food processing industries etc. are the few examples of industries where process costing is applied.

10.2 MEANING AND DEFINITION OF PROCESS COSTING

Charles T. Horngren defines Process Costing as "a method of costing deals with the mass production of the like units that usually pass the continuous fashion through a number of operations called process costing."

Definition of Process Costing**ICMA London**

Process costing is that form of operating costing, which applies where standardized goods are produced.

Meaning of Process Costing

Process costing is a method of costing under which, costs are accumulated or collection for each process separately for a period of time.

This method is useful in industries where mass production of standard products is done in standard processes. This method is usefully adopted in the following industries:

- | | |
|---------------------------|--------------------------|
| (i) Iron & Steel Industry | (ii) Automobile Industry |
| (iii) Cement Industry | (iv) Chemical Industry |
| (v) Fertilizer Industry | (vi) Sugar Industry |
| (vii) Textile Industry | (viii) Paper Industry |
| (ix) Oil Industry etc. | |

10.3 CHARACTERISTICS OF PROCESS COSTING

NOTES

The characteristics of process costing are as follows:

- (i) The production of goods is continuous, until the final product is obtained.
- (ii) The finished product is the result of two or more processes.
- (iii) Each process is distinct and is pre-determined.
- (iv) The finished product of one process becomes the raw material for the immediate next process until its completion.
- (v) All the units produced in a process are identical and distinguishable from one another, but units of one process differ from the units of the other.
- (vi) The main objective of this costing is to ascertain separately the cost of production at the end of each process and in total.
- (vii) Processing of raw materials may give rise to production of several products, which may be termed as joint products or by-products, depending upon their commercial value.

Features of Process Costing

1. In this production is continuous.
2. In this product is homogeneous.
3. The product is standardized.
4. Output of one process become raw material of another process.
5. Costs are collected process-wise.
6. The total cost of each process is divided by the normal output of that process to find out cost per unit of that process.

Various Types of Processes

The following are the various types or processes:

- (a) **Sequential Processes:** When the finished product of Process I becomes the raw material for Process II, and the finished product of Process II becomes the raw material for Process III, and so on, the processes are called Sequential Processes. The flow of product, in this case, is known as Sequential Product Flow.
- (b) **Parallel Processes:** When each process is independent of the other so that the finished product of one process does not become the raw material for the next process, the processes are known as *Parallel Processes*. Two parallel processes may supply their finished products as raw material for a third process; but, in that case, there is a sequential relationship

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between the third process and each of the parallel processes. If X and Y are two parallel processes supplying their finished products to process Z as raw material, each of X and Y has sequential relationship with Z .

Similarly, the finished product of say, process A may be used as the raw material for processes X , Y and Z . Here, X , Y and Z are parallel processes each of which has sequential relationship with process A .

The flow of products from parallel processes are known as Parallel Production Flow.

- (c) **Joint Processes:** When different products are obtained from a common process, the process is known as Joint Process. Flow of products from joint process may be called Joint Product Flow.
- (d) **Selective Processes:** In this case, finished product of a process becomes raw material for a number of processes in the same plant, depending upon the final products to be obtained. Let there be four processes A , B , C and D . A receives raw materials from stores. Finished product of A goes as raw material to B , C and D . Finished product of B also goes as raw material to D ; finished product of C partly forms final output and partly goes as raw material to D [i.e., each of A , B and C feeds D]. C and D give out the final outputs. These processes are called selective processes. The flow may vary depending upon the final product or products to be obtained. Product flow, in this case, is known as Selective Product Flow.

10.4 ADVANTAGES OF PROCESS COSTING

The following advantages of process costing:

- (i) Process costing involves less expense and less effort on accounting, owing to its simple nature.
- (ii) It gives detailed cost of each process, operation or department, budgeted and actual, enabling the management to employ effective control on performance.
- (iii) Overheads may be allocated to departments or process accurately on definite bases of allocation.
- (iv) Since the production is continuous (or since mass production is of repetitive nature) fairly stable standard may be set for production activities.
- (v) Process cost can be determined for short periods. The unit cost can be ascertained by dividing the process cost of the period by the number of units produced in that period. Thus, it is possible to ascertain unit cost weekly or even daily, provided overhead recovery rates are predetermined.

- (vi) Price quotation is very easy in process costing, because there is standard material consumption and standard expenses of operations.

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10.5 DISADVANTAGES OF PROCESS COSTING

The following disadvantages of process costing have been pointed out:

- (i) Since cost is ascertained only at the end of a cost period, effective control on activities cannot be exercised unless standard process costs are used.
- (ii) In case of joint products (i.e., more than one product coming from the same process), the total costs are apportioned to the various products. Thus, the cost of each product cannot be very much reliable.
- (iii) The cost available, under process costing are historical costs, which are not of much use for managerial control.
- (iv) This method provides the average cost per unit, which is not always accurate. Therefore, it is not much useful, for the purpose of detailed analysis and operating efficiency.
- (v) The unit cost, under process costing, represents average cost over a period. So, day-to-day individual efficiency of performance cannot be judged.

Comparison between Job Costing and Process Costing

The points of distinction between Job Costing and Process Costing are presented in the following table:

<i>Job Costing</i>	<i>Process Costing</i>
1. Production is carried on against specific orders.	1. Production is carried on continuously for stock purpose with a view to selling in the market.
2. Each job is quite distinct from the other and products of one job cannot mix up with that of another.	2. Since the production is in a continuous flow, products are mixed up in such a way that they are not separable.
3. No transfer of product usually takes place from one job to another, except in case of over production.	3. Products normally pass from one process to another before they reach the final shape. Usually finished products of one process becomes the raw materials for the next process.
4. Costs are ascertained for each job separately.	4. Costs are ascertained process wise or department wise.
5. After each job is completed costs are ascertained for the job.	5. Costs are ascertained for each process or department at the end of a cost period.
6. There may or may not be any work-in-progress in respect of a job on any closing date.	6. At the end of a cost period there is every possibility of having work-in-progress which is regarded as the opening work-in-progress in the next cost period.

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>7. Total cost being divided by the number of units produced in the lot or batch, gives the unit cost.</p> <p>8. Job costing requires more attention from the management as the production is neither continuous nor standardised.</p> | <p>7. Total cost of a period after adjustment for opening and closing work-in-progress being divided by the output of the process during that period, gives the unit cost.</p> <p>8. Process costing requires less managerial attention as compared to that in case of job costing, as the products are standardised.</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

10.6 PROCEDURE OF PROCESS COSTING

For each process a separate account is opened. All direct expenses and indirect expenses relating to the product are debited to the process account concerned. If one process completes the manufacture, the units produced are transferred to finished stock. If finished product of one process is required by the next process as raw material, the units produced are transferred to the next process account.

The total cost of each process, after adjusting the value of work-in-progress (opening and closing) for each cost period, being divided by the number of units produced by that process during the same period, gives the unit cost. The process account may be ruled with an additional column to show the unit cost.

Routine of Process Accounting

Since most of the items of expenditure can be departmentalised, they can be treated as the direct cost of the process or department. Only a few items of expenditure remain common, which are to be apportioned. Thus, process accounting is much simpler than job accounting.

Meaning of Process Account

It is a separate account prepared for each process, to ascertain the quantity and amount, to be transferred to the next process and also cost per unit.

The direct side of this account, consists of cost of materials, labour, direct expenses and proportionate share of overheads. On the credit side, the amount realized from the sale of residue or by-product or wastage arising from the process and also the output of the process.

10.7 PRACTICAL PROBLEMS ON PROCESS COSTING

Illustration – 1

A product passes through three distinct process to completion. The cost book shows the following information.

<i>Particulars</i>	<i>A (₹)</i>	<i>B (₹)</i>	<i>C (₹)</i>	<i>NOTES</i>
Material	6,000	3,000	2,000	
Labour	5,000	4,000	3,000	
Direct expenses	1,000	4,320	1,810	

The indirect expenses for the period were ₹ 4,800 apportioned on the basis of labour.

The by product of B and C process are sold for ₹ 290 and ₹ 330 respectively. Prepare the process account showing the cost of each process.

Solution:**Process A Account**

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Material	6,000	By Transfer to Process B	14,000
To Labour	5,000		
To Direct expenses	1,000		
To Indirect expenses $\left(4,800 \times \frac{5}{12}\right)$	2,000		
	14,000		14,000

Process B Account

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Material	3,000	By Sale of by Product	290
To Labour	4,000	By Transfer to Process C	26,630
To Direct expenses	4,320		
To Indirect expenses $\left(4,800 \times \frac{4}{12}\right)$	1,600		
To Transfer from Process A	14,000		
	26,920		26,920

Note: The amount of indirect expenses of 4,800 apportioned to process in the ratio of labour i.e., 5 : 4 : 3

Process C Account

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Transfer from Process B	26,630	By Sale of by Product	330
To Material	2,000	By Finished stock account	34,310
To Labour	3,000		
To Direct expenses	1,810		
To Indirect expenses $\left(4,800 \times \frac{3}{12}\right)$	1,200		
	34,640		34,640

Illustration – 2

Deepak Ltd. produces a standard article through three successive processes. The following data relate to October, 2016, Prepare Process Accounts, each showing unit cost. The output produced in October, 2016 is 200 units.

	Process I (₹)	Process II (₹)	Process III (₹)
Materials consumed	20,000	8,000	3,000
Wages booked	16,000	28,000	18,000
Other direct charges	4,000	10,000	5,000

Overhead amounts to ₹ 15,550 for the period. Overhead is recovered on the basis of direct wages.

Solution:**Working notes:**

Overhead recovered on the basis of direct wages

Direct wages 16,000 : 28,000 : 18,000 = 16 : 28 : 18 = 8 : 14 : 9 = 31

$$\text{Process I} \quad \frac{15,500 \times 8}{31} = 4,000$$

$$\text{Process II} \quad \frac{15,500 \times 14}{31} = 7,000$$

$$\text{Process III} \quad \frac{15,500 \times 9}{31} = 4,500$$

$$\text{Total} = 15,500$$

Output – 200 Units

Dr.			Process I Account			Cr.
Particulars	Per unit (₹)	Total (₹)	Particulars	Per Unit (₹)	Total (₹)	
To Materials	100.00	20,000	By Process II A/c	220.00	44,000	
To Wages	80.00	16,000				
To Direct Expenses	20.00	4,000				
To Overhead	20.00	4,000				
	220.00	44,000		220.00	44,000	

Dr.			Cr.		
Process II Account					
Particular	Per unit (₹)	Total (₹)	Particulars	Per unit (₹)	Total (₹)
To Process I Accounts	220.00	44,000	By Process III A/c	485.00	97,000
To Materials	40.00	8,000			
To Wages	140.00	28,000			
To Direct Expenses	50.00	10,000			
To Overhead	35.00	7,000			
	485.00	97,000		485.00	97,000

Dr.			Process III Account			Cr.
Particulars	Per unit	Total (₹)	Particulars	Per unit	Total (₹)	
To Process II Account	485.00	97,000	By Finished Goods			
To Materials	15.00	3,000	Account	637.50	1,27,500	

To Wages	90.00	18,000		
To Direct Expenses	25.00	5,000		
To Overhead	22.50	4,500		
	637.50	1,27,500	637.50	1,27,500

Besides preparing Process Accounts as shown above, Process Cost Sheet can also be prepared as below:

Process Cost Sheet

Period: October 2016

Units produced: 200

Particulars	Process I		Process II		Process III		Total Cost	
	Per unit	Total	Per Unit	Total	Per Unit	Total	Amount	Per Unit
	₹	₹	₹	₹	₹	₹	₹	₹
Transfer from								
Previous Process	—	—	220.00	44,000	485.00	97,000	—	—
Materials	100.00	20,000	40.00	8,000	15.00	3,000	31,000	155.00
Wages	80.00	16,000	140.00	28,000	90.00	18,000	62,000	310.00
Direct Expenses	20.00	4,000	50.00	10,000	25.00	5,000	19,000	95.00
Overhead	20.00	4,000	35.00	7,000	22.50	4,500	15,500	77.50
	220.00	44,000	485.00	97,000	637.50	1,27,500	1,27,500	637.00

Note: In the above illustration finished product of one process becomes raw materials for the next process, each process having no work-in-progress.

Illustration – 3

An article passes through three processes of manufacture. From the following details, show the cost of each of the three processes and the cost per article produced during the month of January, 2016:

	Process No.1	Process No.2	Process No.3
Materials used	75,000	27,000	9,000
Labour	45,000	90,000	30,000
Direct expenses	12,000	36,000	12,600

The indirect expenses amounted to ₹ 42,900 and may be apportioned on the basis of wages. No account need be taken of stocks in hand and work-in-progress at the beginning and at the end of the month. The number of articles produced during the month was 1,200.

Solution:

Process No. 1 Account

Production: 1,200 units

Period: January, 2016

	Dr.		Cr.	
	Per Unit ₹	Total ₹	Per Unit ₹	Total ₹
To Materials	62.50	75,000		
To Labour	37.50	45,000		
To Direct expenses	10.00	12,000		

To Indirect expenses			By Transfer to		
$\left(42,900 \times \frac{3}{11}\right)$	9.75	11,700	Process No. 2	119.75	1,43,700
	119.75	1,43,700		119.75	1,43,700

Process No. 2 Account**Production: 1,200 units****Period: January, 2016**

Dr.	Per Unit ₹	Total ₹		Per Unit ₹	Total ₹	Cr.
To Transfer from						
Process No. 1	119.75	1,43,700				
To Materials	22.50	27,000				
To Labour	75.00	90,000				
To Direct expenses	30.00	36,000				
To Indirect expenses			By Transfer to			
$\left(42,900 \times \frac{6}{11}\right)$	19.50	23,400	Process No. 3	266.75	3,20,100	
	266.75	3,20,100		266.75	3,20,100	

Process No. 3 Account**Production: 1,200 units****Period: January, 2016**

Dr.	Per Unit ₹	Total ₹		Per Unit ₹	Total ₹	Cr.
To Transfer form						
Process No. 2	266.75	3,20,100				
To Materials	7.50	9,000				
To Labour	25.00	30,000				
To Direct expenses	10.50	12,600	By Transfer to			
To Indirect expenses	6.50	7,800	Finished Stock	316.25	3,79,500	
$\left(42,900 \times \frac{2}{11}\right)$						
	316.25	3,79,500		316.25	3,79,500	

Working Notes:

- (i) The cost per unit is ascertained by using the formula:

$$= \frac{\text{Cost incurred during the period}}{\text{Number of units produced during the period}}$$

- (ii) The amount of indirect expenses ₹ 42,900 has been apportioned to processes in the ratio of labour i.e., 3:6:2

Process loss or Process wastage**NOTES**

When the output of a process is not equal to the input, introduced into that process, there is said to be some loss or wastage. The process loss means, loss in weight, which is invisible. The loss may be; normal loss or abnormal loss.

Normal Loss

It is a loss, or wastage which is unavoidable in manufacturing process. Therefore it is called normal loss. It is expected in normal conditions and arises due to evaporation, shrinkage, cutting chemical reaction etc.

Accounting Treatment for Normal Loss

The normal loss should be treated as a part of cost of production so that, it is absorbed by the good units produced in the process. The normal wastage in units should be entered on the credit side of process account in the quantity column, and if there is any scrap value for the same, then it should be entered in the amount column along with the quantity.

Illustration – 4

Find the cost of the 3 processes separately, if the production of each process is passed on to the next process immediately after completion.

<i>Particulars</i>		<i>X</i>	<i>Y</i>	<i>Z</i>
Materials	₹	4,600	8,000	20,000
Wages	₹	2,400	6,000	9,000
Works overhead	₹	5,600	2,350	4,200
Production (units)		36,000	37,500	48,000
Stock [1/01/16]		—	4,000	16,500
Stock [31/12/16]		—	1,000	5,500

The finished stock obtained at the end of the process Z was sold at cost plus 25%, incurring ₹ 5,000 as selling and distribution expenses.

Show the cost per unit at the end of each process and also net profit for the month.

Solution:

Dr.	Process “X” Account				Cr.
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>
To Raw materials	36,000	4,600	By Process Account	36,000	12,600
To Wages	—	2,400	[output transferred]		
To Works overhead	—	5,600			
	36,000	12,600		36,000	12,600

$$\text{Cost per unit (X)} = \frac{12,600}{36,000} = 0.35$$

$$\text{Cost per unit (Y)} = \frac{30,350}{37,500} = 0.8$$

$$\text{Cost per unit (Z)} = \frac{72,000}{48,000} = 1.5$$

Dr. Process "Y" Account			Cr.		
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>
To Opening stock [4,000 × 0.35]	4,000	1,400	To Process 'Z' A/c [output transferred]	37,500	30,000 (bal)
To Process 'X' A/c	36,000	12,600	By Normal loss (bal)	1,500	–
To Materials	–	8,000	By Closing stock [1,000 × 0.35]	1,000	350
To Wages	–	6,000			
To Works overhead	–	2,350			
	40,000	30,350		40,000	30,350

Dr. Process 'Z' Account			Cr.		
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>
To Opening stock [16,500 × 0.8]	16,500	13,200	By Closing stock [5,500 × 0.8]	5,500	4,400
To Process "Y" A/c	37,500	30,000	By Finished goods A/c	48,000	72,000 (bal)
To Wages	–	9,000	By Normal loss (bal)	500	
To Materials	–	20,000			
To Works overhead	–	4,200			
	54,000	76,400		54,000	76,400

Calculation of Profit and Selling Price:

Cost of production	72,000
Add: Selling & distribution expenses	5,000
Total cost	77,000
Add: Profit $\left[77,000 \times \frac{25}{100} \right]$	19,250
Selling Price	96,250

Illustration – 5

The following details are extracted from the costing records of an Oil Mill, for the period ending 31st December 2016. Purchase of 500 tons costed ₹ 2,00,000 [copra]-Production being 300, 250 and 248 respectively (tons)

<i>Particulars</i>	<i>Process</i>		
	<i>Crushing</i>	<i>Refining</i>	<i>Finishing</i>
Direct labour	2,500	1,000	1,500
Electric power	600	360	240
Sundry materials	100	2,000	–
Repairs	280	330	140

Steam	600	450	450
Factory expenses	1,320	660	220
Cost of casks	—	—	7,500
Sacks sold	400	—	—

175 tons of Copra residue sold for 11,000. Loss of weight in crushing process is 25 tons. 45 tons of by product was got in refining process, value at 6,750. Prepare all process Accounts and show cost per unit.

Solution:

Dr.			Cr.		
Crushing Process Account					
Particulars	Qty	Amount	Particulars	Qty	Amount
To Copra purchased	500	2,00,000	By Sacks		400
To Direct labour		2,500	By Residue sold [Co]	175	11,000
To Electric power		600	By Normal loss	25	—
To Sundry material		100	By Refining		
To Repairs		280	By Process Account	300	1,94,000
To Steam		600			(bal)
To Factory expenses		1,320			
	500	2,05,400		500	2,05,400

Dr.			Refining Process Account			Cr.		
Particulars		Qty	Amount	Particulars		Qty	Amount	
To Crushing p. A/c.		300	1,94,000	By Product A/c		45	6,750	
To Direct labour			1,000	By Normal loss		5	–	
To Electric power			360	By Finished		(bal)		
To Sundry material			2,000	Process Account		250	1,92,050	
To Repairs			330	(balance)				
To Steam			450					
To Factory expenses			660					
		300	1,98,800			300	1,98,800	

Dr.			Cr.		
Finished Process Account					
Particulars	Qty	Amount.	Particulars	Qty	Amount.
To Refining p. A/c	250	1,92,050	By Normal loss (balance)	2	—
To Direct labour		1,500	By Finished goods		
To Electric power		240	Account	248	2,02,100
To Sundry material		—			(bal)
To Repairs		140			
To Steam		450			
To Factory expenses		220			
To Cost of casks		7,500			
	250	2,02,100		250	2,02,100

Illustration – 6

A Fertilizer Manufacturer, manufactures 2 brands of fertilizers, obtained from 2 processes M & N. In each process, 5% of total weight is lost and 10% is scrap. No profit is added in the course of processing.

Prepare Process Account and ascertain cost per ton, from the information, related to Jan 2016, given below:

<i>Particulars</i>	<i>M</i>	<i>N</i>
Raw materials used (tons)	200	70
Cost per ton (₹)	100	300
Direct wages (₹)	8,000	3,500
Finished goods sent to warehouse for sale	30%	100%
Finished product passed on to next process	70%	–
Sale of scrap (tons & ₹)	80	120

Solution:

Dr.		Process “M” Account		Cr.	
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>
To Direct wages		8,000	By Loss of weight	10	–
To Raw materials	200	20,000	[5% of 200]		
			By Sale of scrap	20	1,600
			[10% of 200]		
			By Warehouse 30%	51	7,920
			By Process ‘N’ a/c	119	18,480
	200	28,000		200	28,000

$$\text{Cost per ton} = \frac{26,400}{170} = ₹ 155.29$$

Dr.		Process “N” Account		Cr.	
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>
To Process “M”	119	18,480	By Loss of weight	9	–
To Raw materials	70	21,000	[5% of 189]		
To Direct wages		3,500	By Sale of scrap	19	2,280
			[10% of 189]		
			By Finished goods	161	40,700
	189	42,980		189	42,980

$$\text{Cost per tonne} = \frac{40,700}{161} = ₹ 252.8$$

Illustration – 7

A Company produces a material used in building, the manufacturing of which involves 3 processes. The materials produced in 3 consecutive grades, namely – soft, medium and hard.

The following information is related to production for the period ended 31st December 2016.

<i>Particulars</i>	<i>A</i>	<i>B</i>	<i>C</i>
Raw materials used [tons]	1,000		
Cost per ton	200		
Manufacturing wages & exp	72,500	40,800	10,710
Loss in weight	5%	10%	20%
Scrap (tons) [Sold at ₹ 50/t]	50	30	51

$\frac{2}{3}$ of process A and $\frac{1}{2}$ of process B are passed on to the next process and the balances are sent to warehouse, for sale.

Prepare process Accounts and find cost per ton of each process.

Solution:

Dr. Process 'A' Account Cr.					
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>
To Raw materials	1,000	2,00,000	By Loss in weight	50	–
To Manufacturing wages & expenses		72,500	[5% of 1,000]		
			By Scrap Sold	50	2,500
			By Warehouse [1/3]	300	90,000
			By Process "B" [2/3]	600	1,80,000
	1,000	2,72,500		1,000	2,72,500

$$\text{Output} = \text{Input} - \text{Loss} - \text{Scrap} = 1,000 - 50 - 50 = 900 \text{ tons}$$

$$\text{Cost per ton} = \frac{\text{Total Cost}}{\text{Total Output}} = \frac{2,70,000}{900} = ₹ 300.$$

Dr. Process 'B' Account Cr.					
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Qty</i>	<i>Amount</i>	
To Process 'A' A/c	600	1,80,000	By Loss in weight	60	–
To Manufacturing wages & expenses		40,800	[10% of 600]		
			By Sale of scrap	30	1,500
			By Warehouse(1/2)	255	1,09,650
			By Process "C"(1/2)	255	1,09,650
	600	2,20,800		600	2,20,800

$$\text{Output} = 600 - 60 - 30 = 510$$

$$\text{Cost per ton} = \frac{2,19,300}{510} = ₹ 430$$

Dr.		Process 'C' Account		Cr.	
Particulars	Qty	Amount	Particulars	Qty	Amount
To Process 'B' A/c	255	1,09,650	By Loss in weight	51	–
To Manufacturing expenses & wages		10,710	[20% of 255]		
			By Sale of scrap	51	2,550
			By Finished goods	153	1,17,810
	255	1,20,360		255	1,20,360

$$\text{Cost per ton} = \frac{1,17,810}{153} = ₹ 770$$

Abnormal Loss

It arises due to some unforeseen or abnormal conditions or factors such as machine breakdown, negligence of workers, fire, inefficient management, bad designs etc. It is valued at the same rate, as like goods are valued. It can be calculated with the following formula:

$$\text{Abnormal loss} = \frac{\text{Normal cost of normal O/p (Rs.)}}{\text{Normal output (Qty.)}} \times \text{Abnormal loss (Qty.)}$$

or

$$\text{Value of Abnormal loss} = \frac{\text{Total cost} - (\text{Normal loss})}{\text{Total input units} - (\text{Normal loss in units})} \times \text{Abnormal loss units}$$

Accounting Treatment

The value of abnormal loss, as calculated, with the above formula, has to be debited, to the separate Account called the abnormal loss Account, and credited to concerned process Account.

If the abnormal loss has any scrap value realized, it should be credited to the Abnormal Loss Account and balance if any, in the Account, is transferred to "Costing Profit & Loss Account". The abnormal loss is not to be borne by good units, in the process.

Illustration – 8

In manufacture of a product 1,000 kgs of raw materials at ₹ 8 per kg were supplied to a process. Other expenses on this process were as follows: Labour Cost ₹ 2,000, production expenses ₹ 1,000. normal loss has been estimated at 10%, the scrap was sold at ₹ 2 per kg.

The actual output in this process was 880 kgs. Calculate the value of abnormal loss.

Solution:

Dr.		Process Account		Cr.	
Particulars	Units	Amount	Particulars	Units	Amount
To Raw materials	1,000	8,000	By Normal Loss	100	200
To Labour		2,000	By Abnormal Loss	20	240
To Production expenses		1,000	By Actual output	880	10,560
			@ ₹ 12 each		
	1,000	11,000		1,000	11,000

Working Note:**NOTES**

$$\begin{aligned}\text{Cost per unit} &= \frac{\text{Total Cost} - \text{Value of Normal Loss}}{\text{Unit Introduced} - \text{Normal Loss Units}} \\ &= \frac{11,000 - 200}{1,000 - 100} = \frac{10,800}{900} = 12 \text{ per unit}\end{aligned}$$

$$\text{Value of abnormal loss} = 20 \text{ units} \times ₹ 12 = 240$$

Illustration – 9

The product of a Co, passes through two processes A and B and then to finished stock. In process A, 5% and in process B, 10% of the units entering the process, is considered as normal loss. The scrap value of the loss in process A is ₹ 8, for 100 units and ₹ 10 for 100 units in process B.

<i>Particulars</i>	<i>A</i>	<i>B</i>
Materials (in ₹)	3,000	1,500
Wages	3,500	2,000
Manufacturing expenses	1,000	1,000

5,000 units were bought into process A at ₹ 2,500. The output was 4,700 units in process A and 4,150 in process B. Prepare process Accounts.

Solution:

Dr.			Process 'A' Account			Cr.	
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>		
			By Normal				
To Raw materials	5,000	2,500	Loss $\left(\frac{5}{100} \times 5,000\right)$	250	20		
To Materials	–	3,000	By Process B A/c	4,700	9,875		
To Manufacturing exp.		1,000	By Abnormal loss	50	105		
To Wages		3,500	Account	(bal)	(bal)		
	5,000	10,000		5,000	10,000		

Working Notes:**Calculation of abnormal loss:**

Input	–	5,000
Less: Normal loss	–	250
Normal output	–	4,750
Less: Actual output	–	4,700
Abnormal loss	–	50

Calculation of normal cost of normal output:

Total debit	=	10,000
Less: Total credit	=	20
		9,980

$$\text{Abnormal loss} = \frac{9,980}{4,750} \times 50 = 105$$

Dr. <i>Process "B" Account</i>			Cr.		
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>
To Raw material			By Normal Loss		
(process A)	4,700	9,875	$\left[\frac{10}{100} \times 4,700 \right]$	470	47
To Materials		1,500	By Finished Goods A/c	4,150	14,057
To Wages		2,000	By Abnormal loss A/c	80	271
To Manufacturing exp.		1,000			
	4,700	14,375		4,700	14,375

Calculation of Abnormal loss

Input	4,700
Less: Normal Loss	470
Normal output	4,230
Less: Actual output	4,150
Abnormal Output	80

Calculation of Normal cost of normal output

Total debit	14,375
Less: Total credit	47
	14,328

$$\text{Abnormal Loss} = \frac{14,328}{4,230} \times 80 = 271$$

Illustration – 10

The standard processing loss in refining certain basic material into an industrial cleaning compound is 15%, the scrap being saleable for ₹ 0.50 per kg. At the beginning of January, 2016, 8,000 kg. of basic material was put into a process, the output of which was 7,000 kg. of cleaning compound. The basic material cost ₹ 0.80 per kg., wages of process operators amounted to ₹ 1,200 and overhead applied to the process was ₹ 480.

Prepare the necessary accounts to show the results of the process.

Solution:

Dr. <i>Process 'A' Account</i>			Cr.		
	<i>Kg.</i>	<i>₹</i>		<i>Kg.</i>	<i>₹</i>
To Materials			By Normal Loss		
@ ₹ 0.80	8,000	6,400	(15%) @ ₹ 0.50	1,200	600
To Wages	–	1,200	By Balance c/d		
To Overhead	–	480	@ ₹ 1.10	6,800	7,480
	8,000	8,080		8,000	8,080

To Balance b/d @ ₹ 1.10	6,800	7,480	By Transfer to Finished Stock @ ₹ 1.10	7,000	7,700
To Abnormal Gain @ ₹ 1.10	200	220			
	7,000	7,700		7,000	7,700

NOTES

Dr.	Normal Loss Account				Cr.
	Kg.	₹		Kg.	₹
To Proces Account	1,200	600	By Abnormal Gain Account @ ₹ 0.50	200	100
			By Scrap Sales @ ₹ 0.50	1,000	500
	1,200	600		1,200	600

Dr.	Abnormal Loss Account				Cr.
	Kg.	₹		Kg.	₹
To Normal Loss A/c. @ ` 0.50	200	100	By Process Account @ ₹ 1.10	200	220
To Costing Profit & Loss Account	–	120			
	200	220		200	220

Abnormal Gain

It is the excess of actual output over normal output. It is also known as 'abnormal' efficiency'.

Abnormal Gain = Actual Output – Normal Output

Accounting Treatment: It has to be taken, on the debit side of process Account and the value for the abnormal gain to be calculated, with the following formula.

$$\text{Abnormal gain} = \frac{\text{Normal cost of normal output}}{\text{Normal output}} \times \text{Units of abnormal gain}$$

or

$$\text{Value of abnormal gain} = \frac{\text{Total cost} - (\text{Normal loss})}{\text{Total input units} - (\text{Normal loss in units})} \times \text{Abnormal gain units}$$

The abnormal gain of all the processes, finally is transferred to costing Profit & Loss Account.

Illustration – 11

A product passes through 3 processes A, B and C to completion. It is ascertained that wastage incurred in each process are as under-process A – 10%; process B – 5%; process C – 10%; of units introduced.

The wastage of process A is sold at ₹ 20 per unit and of B ₹ 30 per unit and of C 40 per unit. The following information is also obtained –

	<i>A</i>	<i>B</i>	<i>C</i>
Materials consumed (₹)	15,000	20,000	17,000
Direct labour	20,000	25,000	40,000
Manufacturing expenses	15,000	12,000	15,000

1,000 units have been issued to process A, at the cost of ₹ 30 per unit. The output of each process has been: A – 920 units; B – 870 units; C – 800 units. Prepare Process Accounts.

Solution:

Dr.		Process “A” Account		Cr.	
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>
To Raw materials	1,000	30,000	By Loss (10%)	100	2,000
To Materials consumed		15,000	By Process B A/c	920	79,733
To Direct labour		20,000			(bal)
To Manufacturing exp.		15,000			
To Abnormal gain A/c	20	1,733			
	1,020	81,733		1,020	81,733

Working Note:**Calculation of abnormal gain:**

Input	–	1,000
Less: Normal loss	–	100
Normal output	–	900
Less: Actual output	–	920
Abnormal gain		20

Calculation of normal cost of normal output:

Total Debit	–	80,000
Less: Total Credit	–	2,000
		78,000

$$\text{Calculation of abnormal gain} = \frac{78,000}{900} \times 20 = 1,733$$

Dr.		Process “B” Account		Cr.	
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>
To Process A Account	920	79,733	By Normal loss (5%)	46	1,380
To Material consumed		20,000	By Process ‘C’ A/c	870	1,34,734

To Direct labour	25,000	By Abnormal		
To Manufacturing exp.	12,000	Loss Account	4	619
	920	1,36,733	920	1,36,733

Calculation of abnormal loss:

Input	–	920
Less: Normal loss	–	46
Normal output	–	874
Less: Actual output	–	870
Abnormal loss	–	4

Calculation of normal cost of normal output:

Total Debit	–	1,36,733
Less: Total Credit	–	1,380
		<u>1,35,353</u>

$$\text{Abnormal loss} = \frac{1,35,353}{874} \times 4 = 619.46$$

Dr.			Process "C" Account			Cr.	
Particulars	Qty.	Amount	Particulars	Qty.	Amount		
To Process B Account	870	1,34,734	By Normal loss	87	3,480		
To Material consumed		17,000	By Finished goods	800	2,07,667		
To Direct labour		40,000			(bal)		
To Manufacturing exp.		15,000					
To Abnormal gain	17	4,413					
	887	2,11,147		887	2,11,147		

Calculation of abnormal gain –

Input	870
Less: Normal loss	87
Normal output	783
Less: Actual output	800
Abnormal gain	17

Calculation of normal cost of normal output–

Total Debit	–	2,06,734
Less: Total Credit	–	3,480
		<u>2,03,254</u>

$$\text{Calculation of abnormal gain} = \frac{2,03,254}{783} \times 17 = 4413$$

Illustration – 12

A product passes through 3 processes A, B & C. The normal wastage of each process is 3%, 5% and 8% respectively. The wastage of each process is sold for ₹ 50, ₹ 150 & ₹ 500 respectively. 10,000 units were issued to process A in the beginning of the month at ₹ 1 per unit. The other expenses were as follows:

<i>Particulars</i>	<i>A</i>	<i>B</i>	<i>C</i>
Sundry materials	2,000	6,000	1,000
Labour	16,000	23,000	10,600
Direct materials	500	1,500	400

The actual output of A was 9,500 units, of B was 9,100 units and C was 8,100 units.

There was no stock either at the beginning or at the end of the month.

Prepare Process Accounts.

Solution:

Dr.		Process "A" Account				Cr.
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	
To Raw materials	10,000	10,000	By Loss($\frac{3}{100} \times 10,000$)	300	–	
To S. materials		2,000	By Sale of scrap	–	50	
To Labour		16,000	By Process 'B' A/c	9,500	27,863	
To Direct materials		500			(bal)	
			By Abnormal loss A/c	200	587	
	10,000	28,500		10,000	28,500	

Calculation of abnormal loss:

Input	–	10,000
Less: normal loss	–	300
Normal Output	–	9,700
Less: Actual Output	–	9,500
Abnormal loss	–	200

Calculation of normal cost of normal Output:

Total debit	–	28,500
Less: Total credit	–	50
		<u>28,450</u>

$$\text{Calculation of abnormal loss} = \frac{28,450}{9,700} \times 200 = 586.59 = 587$$

Dr.		Process "B" Account				Cr.
<i>Particulars</i>	<i>Qty.</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty.</i>	<i>Amount</i>	
To Process "A" A/c.	9,500	27,863	By Loss $\left(\frac{5}{100} \times 9,500\right)$	475	–	

To S. materials	6,000	By Sale of scrap	–	150
To Labour	23,000	By Process “C” A/c.	9,100	58,697
To Direct materials	1,500	By Abnormal loss		
To abnormal gain	75	Account	–	–
	9,575	58,847	9,575	58,847

Calculation of abnormal gain:

Input	9,500
Less: normal loss	– 475
Normal Output	– 9,025
Less: Actual Output	– 9,100
Abnormal gain	– 75

Calculation of normal cost of normal Output:

Total debit	– 58,363
Less: Total credit	– 150
	<u>58,213</u>

$$\text{Abnormal gain} = \frac{58,213}{9,025} \times 75 = 483.76 = 484$$

Dr.			Process “C” Account			Cr.	
Particulars	Qty	Amount	Particulars	Qty	Amount		
To Process “B” Account	9,100	58,697	By Loss $\left(\frac{8}{100} \times 9,100\right)$	728	–		
To S. materials		1,000	By Sale of scrap	–	500		
To Labour		10,600	By Finished goods A/c	8,100	67,917		
To Direct materials		400	By Abnormal		(bal)		
			loss Account	272	2,280		
	9,100	70,697		9,100	70,697		

Calculation of abnormal loss:

Input	– 9,100
Less: Normal loss	– 728
Normal Output	– 8,372
Less: Actual Output	– 8,100
Abnormal	– 272

Calculation of normal cost of normal Output:

Total debit	– 70,697
Less: Total credit	– 500
	<u>70,197</u>

$$\text{Calculation of abnormal loss} = \frac{70,197}{8,372} \times 272 = 2,280.64 \text{ i.e., } 2281$$

Illustration – 13

A finished product is obtained, after it passes through 3 distinct process. The following are the details available

	<i>Total</i>	<i>1</i>	<i>2</i>	<i>3</i>
Materials	11,250	5,200	4,000	2,050
Direct wages	14,660	4,500	7,360	2,800
Manufacturing expenses	7,330			

Material expenses are apportioned on the basis of direct wages 500 units at ₹ 8 per unit were introduced in Process 1. The details of actual output and normal loss are as follows:

<i>Process</i>	<i>O/P (units)</i>	<i>Normal loss</i>	<i>Value of scrap/unit</i>
Process 1	450	10%	₹ 4
Process 2	340	20%	₹ 8
Process 3	270	25%	₹ 10

Assuming that there was no stock or work-in-progress, prepare Process Accounts.

Solution:

Dr.		<i>Process "A" Account</i>		Cr.	
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>
To Raw materials	500	4,000	By Loss	50	–
To Materials		5,200	By Sale of scrap	–	200
To Direct wages		4,500	By Process 'B' A/c	450	15,750
To Manufacturing exp.		2,250			(bal)
	500	15,950		500	15,950

Dr.		<i>Process "B" Account</i>		Cr.	
<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>	<i>Particulars</i>	<i>Qty</i>	<i>Amount</i>
To Process "A" A/c	450	15,750	By Loss	90	–
To Materials		4,000	By Sales of scrap	–	720
To Direct wages		7,360	By Process "C" A/c	340	28,399
To Manufacturing exp.		3,680	By Abnormal loss	20	1,671
	450	30,790		450	30,790

Calculation of abnormal loss:

Input–	450	
Less: Normal loss	–	90
Normal output	–	360
Less: Actual output	–	340
Abnormal loss	–	20

Calculation of normal cost of normal output:

NOTES

Total debit	30,790
Less: Total credit	720
	<u>30,070</u>

$$\text{Calculation of Abnormal loss} = \frac{30,070}{360} \times 20 = 1,671$$

Dr.	Process "C" Account				Cr.
Particulars	Qty	Amount	Particulars	Qty	Amount
To Process "B" Account	340	28,399	By Loss	85	—
To Materials		2,050	By Sales of scrap	—	850
To Direct wages		2,800	By Finished goods A/c	270	35,787
To Manufacturing exp.		1,400			(bal)
To Abnormal gain	15	1,988			
	355	36,637		355	36,637

Calculation of abnormal gain:

Input	—	340
Less: Normal loss	—	85
Normal output	—	255
Less: Actual output	—	270
Abnormal gain	—	<u>15</u>

Calculation of normal cost of normal output:

Total debit	—	34,649
Less: Total credit	—	850
		<u>33,799</u>

$$\therefore \text{Abnormal gain} = \frac{33,799}{255} \times 15 = 1,988.176$$

Illustration – 14

Product 'A' is obtained after it passes through three distinct processes. The following information is obtained from the accounts for week ending 31-5-2016.

Items	Total ₹	Process I ₹	Process II ₹	Process III ₹
Direct materials	7,542	2,600	1,980	2,962
Direct wages	9,000	2,000	3,000	4,000
Production overheads	9,000			
Output during the week		950 (units)	840 (units)	750 (units)
Normal loss	5%	10%	15%	
Sale of scrap per unit		₹ 2	₹ 4	₹ 5

1,000 units at ₹ 3 each were introduced in Process I. There were no stocks of materials or work-in-progress at the beginning or at the beginning or at the end of the period. The output of each process passes direct to next process and finally to Finished Stock Production Overhead is recovered at 100% of direct wages. Prepare Process Cost A/c, Abnormal Gain A/c and Abnormal Loss A/c.

Solution:

Dr.			Process I Account			Cr.
Particulars	Units	Amount	Particulars	Units	Amount	
To Raw materials @ 3	1,000	3,000	By Normal loss (5%)	50	100	
To Direct materials		2,600	By process II A/c	950	9,500	
To Direct wages		2,000				
To Production overhead (100% wages)		2,000				
	1,000	9,600		1,000	9,600	

$$\text{Cost per unit} = \frac{9,500}{950} \text{ units} = ₹ 10 \text{ per unit.}$$

Dr.			Process II Account			Cr.
Particulars	Units	Amount	Particulars	Units	Amount	
To Process I a/c	950	9,500	By Normal Loss (10%)	95	380	
To Direct Materials		1,980	By Abnormal loss a/c	15	300	
To Direct wages		3,000	By process III A/c	840	16,800	
To production overhead (100% wages)		3,000				
	950	17,480		950	17,480	

$$\text{Cost per unit} = \frac{17,480 - 300}{855} = 20.09$$

i.e., ₹ 20 per unit (rounded off)

$$\text{Cost of abnormal loss} = 15 \times 20 = 300$$

Dr.			Process III Account			Cr.
Particulars	Units	Amount	Particulars	Units	Amount	
To Process II a/c	840	16,800	By Normal Loss (15%)	126	630	
To Direct Materials		2,962	By Finished stock	750	28,500	
To Direct wages		4,000				
To production overhead (100% wages)		4,000				
To Abnormal Gain A/c	36	1,368				
	876	29,130		876	29,130	

$$\text{Cost per unit} = \frac{27,762 - 630}{714} = 38 \text{ and}$$

$$\text{Cost of Abnormal Gain} = \frac{27,762 - 630}{840 - 126} \times 36 = 1,368$$

Dr.			Abnormal Account			Cr.		
Particulars	Units	Amount	Particulars	Units	Amount			
To Process II A/c	15	300	By Sale of scrap @ 4	15	60			
			By Costing P/L A/c		240			
	15	300		15	300			

Dr.			Abnormal Gain Account			Cr.		
Particulars	Units	Amount	Particulars	Units	Amount			
To Normal loss @ ₹ 5	36	180	By Process III A/c	36	1,368			
To Profit & loss A/c		1,188						
	36	1,368		36	1,368			

Illustration – 15

A product passes through three processes for completion. For the month ending 31.3.2016 the following are the details.

Particulars	Process			
	Total (₹)	X (₹)	Y (₹)	Z (₹)
Material	84,820	20,000	30,200	34,620
Labour	1,20,000	30,000	40,000	50,000
Direct expenses	7,260	5,000	2,260	Nil
Production overhead	5,000	-	-	-
Normal loss	-	10%	5%	10%
Sale of scrap per unit	-	₹ 3	₹ 5	₹ 6
Production in units	-	920	870	800

1,000 units at ₹ 50 per unit were issued to process X Production overhead is to be allocated on the basis of direct labour.

Solution:

Process X A/c					
Particulars	Unit	Amount	Particulars	Unit	Amount
To Units introduced	1,000	50,000	By Normal loss	100	300
To Materials		20,000	(1,000 x 10/100)		
To Labour		30,000			
To Direct expenses		5,000			

To Production overheads (60,000 × 3:4:5/12)	15,000	By Process Y	920	1,22,360
To Abnormal gain	20	(Transfer)		
	1,020			1,22,660
			1,020	1,22,660

$$\text{Abnormal gain} = \frac{1,20,000 - 300}{1,000 - 100} \times 20 = 2,660$$

Process Y A/c

Particulars	Unit	Amount	Particulars	Unit	Amount
To Process X A/c	920	1,22,360	By Normal loss		
To Materials		30,200	(950 × 5/100)	46	230
To Labour		40,000	By Abnormal loss	04	982
To Direct Expenses		2,260	By Process Z	870	2,13,608
To Production overhead (5,000 × 4)		20,000	(Transfer)		
	920	2,14,820		920	2,14,820

$$\text{Abnormal loss} = \frac{2,14,820 - 230}{920 - 46} \times 04 = 982$$

Process Z A/c

Particulars	Unit	Amount	Particulars	Unit	Amount
To Process Y A/c	870	2,13,608	By Normal loss		
To Materials		34,620	(870 × 10/100)	87	522
To Labour		50,000	By Finished goods	800	3,29,712
To Direct Expenses		Nil			
To Production overhead (5,000 × 5)		25,000			
To Abnormal Gain	17	7,006			
	887	3,30,234		887	3,30,234

$$\text{Abnormal gain} = \frac{3,23,228 - 522}{870 - 87} \times 17 = 7,006$$

Abnormal Loss Account

Particulars	Unit	Amount	Particulars	Unit	Amount
To Process Y A/c	4	982	By Sale of scrap at ₹ 5 per unit	4	20
			By Costing P/L A/c		962
	4	982		4	982

Abnormal Gain Account

Particulars	Unit	Amount	Particulars	Unit	Amount
To Normal Loss A/c (Short fall in sale of normal loss units) (20 × 3)	20	60	By Process X A/c	20	2,660
To Normal Loss A/c (17 × 6)	17	102	By Process Z A/c	17	7,006
To Costing P&L A/c		9,504			
	37	9,666		37	9,666

Illustration – 16

X Ltd. processes a patent material used in building the material is produced in three consecutive processes.

	Process		
	I	II	III
Cost of 1000 tons of material used	₹ 2,00,000	—	—
Manufacturing wages and expenses	₹ 87,500	39,500	10,710
Weight Lost (% of the input of the process)	5%	10%	20%
Scrap (Sale price ₹ 50 per ton)	50 tons	30 tons	51 tons
Sale price per ton	₹ 350	₹ 500	₹ 800

Management expenses were ₹ 12,500 and selling expenses ₹ 9,500 2/3rds of the output of process I and one-half of the output of process II are passed on to the next process and the balance are sold. The entire output of process III is sold.

Prepare the three process accounts and a statement of profit.

Solution:**Process I Account**

Particulars	Units Tons	Amount (₹)	Particulars	Units Tons	Amount (₹)
To Raw materials	1,000	2,00,000	By Weight Loss	50	—
To Manufacturing			By Scrap sold (50 × 50)	50	2,500
To Wages & Expenses		87,500	By Sales @ ₹ 350	300	1,05,000
To Profit & Loss A/c (Profit)		10,000	By Process II A/c (balancing fig.)	600	1,90,000
	1,000	2,97,500		1,000	2,97,500

Process II Account

Particulars	Units Tons	Amount (₹)	Particulars	Units Tons	Amount (₹)
To Process I A/c	600	1,90,000	By Weight Loss	60	–
To Manufacturing			By Scrap sold (30 × 50)	30	1500
To Wages and expenses		39,500	By Sales @ ₹ 500	255	1,27,500
To P/L A/c (Profit)		13,500	By Process III A/c (balancing fig.)	255	1,14,000
	600	2,43,000		600	2,43,000

Process III Account

Particulars	Units Tons	Amount (₹)	Particulars	Units Tons	Amount (₹)
To Process II A/c	255	1,14,000	By Weight Loss	51	–
To Manufacturing			By Scrap sold (51 × 50)	51	2,550
To Wages & expenses		10,710	By Sales @ ₹ 800	153	1,22,400
To P/L A/c (Profit) (BF)		240			
	255	1,24,950		255	1,24,950

Statement of Profit or Loss

	Amount
Profit as per I process	10,000
Profit as per II process	13,500
Profit as per III process	240
	23,740
Less: Manufacturing expenses	12,500
Selling expenses	9,500
Net Profit	1,740

Process I Account

Selling price (300 × 350) = 1,05,000 Less cost

$$\left(\frac{2,87,500 - 2,500}{1,000 - 100} \right) \times 300 = 95,000 \quad \therefore \text{Profit ₹ 10,000}$$

Process II Account**NOTES**

Selling Price $(255 \times 500) = 1,27,500$ Less cost

$$\left(\frac{2,29,500 - 1,500}{600 - 90} \right) \times 255 = 1,14,000 \therefore \text{Profit ₹ } 13,500$$

Process III Account

Selling price $(153 \times 800) = 1,22,400$ Less Cost

$$(1,24,710 - 2,550) = 1,22,160 \therefore \text{Profit ₹ } 240$$

10.8 SINGLE AND OUTPUT COSTING

Introduction

A large number of industrial enterprises are engaged in the production of identical units of a commodity. The method of costing used to ascertain the production cost, in this type of industrial enterprises, is called **unit costing**. Since the units are identical, they have identical costs and therefore, they bear identical amount of cost. This is an important feature of Unit Costing. Hence, the cost per unit of output is computed by dividing the total cost by the number of units of output as presented below.

$$\text{Cost per unit of output} = \left[\frac{\text{Total cost}}{\text{Number of units of output}} \right]$$

This basic principle is used in Single or Output Costing, Process Costing and Operating Costing to ascertain the cost per unit. Single or Output Costing is, therefore, a form of Unit Costing. This method of costing (*viz.*, Output Costing) is used when the industrial enterprise produces only one product with or without more than one grade. Brick, yarn, coal, sugar, dairy, quarries, cement, collieries, steel, paper, breweries, etc. industries are some of the examples wherein Output Costing is used.

Meaning of Output or Single Costing

When the industrial enterprises produce only one product each, the task of ascertaining the cost per unit of output is comparatively an easier one. Because, it involves collection and recording of all cost details systematically and dividing the total cost by the number of units of the product produced during the period. In order to make a comparative cost study to find out reasons for the changes in the total and unit costs, details may also be provided in the Cost Sheet for previous period. Alan Pizzey views Unit or Single Costing as **the system of cost accounting in which costs are determined per unit of a single product in a manufacturing activity**.

NOTES

However, when an enterprise produces two or more types of the (same) product, the task of ascertaining the unit cost of each type is little complicated. It requires the apportionment of common costs among different varieties on suitable and equitable basis. The aggregate of direct and apportioned costs of each grade or variety of a product is divided by the output of that grade or variety to arrive at the unit cost. This costing method can, therefore, be applied to industries where,

- (a) They produce only one product (a single product) each or few varieties of the same product with variations in shape, quality, size, etc., and
- (b) The manufacturing of goods is undertaken on a continuous basis.

Under this costing method (*viz.*, Single or Output Costing), all expenses are analyzed from the point of view of both the identifiability and the functions they (*i.e.*, costs) perform. Further, the total and unit costs are determined in different groups and stages such as prime cost, works cost, cost of production and total cost or cost of sales. For the purpose of ascertaining the stage-wise costs, companies prepare either the Cost Sheet or Statement of Cost, or Production Account or Manufacturing, Trading and Profit and Loss Account depending upon the nature of production and other activities. Before discussing these aspects in detail, it is necessary to look into the elements of costs or composition of total costs.

Costing Procedure (under Single or Output Costing)

As there is only one product (or a few varieties of the same product), the procedure for the ascertainment of cost involves only the collection and analysis of all items of costs. It is because of the reason that, all costs are analyzed, and accounted for, from the point of view of single product. As already stated, the basic equation used in all forms of Unit Costing including Single or Output Costing is,

$$\text{Cost per unit of output} = \left[\frac{\text{Total cost}}{\text{Number of units}} \right]$$

Hence, Single Costing is a simple method of costing. Since the cost ascertainment procedure involves the collection and analysis of different elements of costs, the same is analyzed and presented below.

(a) Material Cost: Materials required for production are obtained by the production department from the stores department through the Material Requisition Notes. With the help of raw materials at the beginning, raw materials received from the stores department (or materials purchased directly, if allowed) and the unused raw materials at the end of the period, quantity of raw materials consumed can be computed as shown below.

$$\text{Quantity of Raw Material consumed} = \left[\text{Opening stock of Raw Material} + \text{Quantity of Raw Material purchased} \right] - \left[\text{Closing stock of Raw Materials} \right]$$

NOTES

On the basis of the quantity of raw materials consumed, composition of materials consumed and the issue price/s, the cost of raw materials consumed can be computed as presented below.

$$\text{Quantity of Raw Material consumed} = \left[\text{Quantity of Raw Material consumed} \times \text{Issue Price} \right]$$

Alternatively, cost of raw material consumed can be computed by subtracting the cost of unused raw material (*i.e.*, cost of raw material at the end of the period) from the cost of raw material available for consumption during a period (*i.e.*, aggregate of cost of opening stock of raw material and total cost of material received and/or purchased during the period) as presented below.

$$\begin{aligned} \text{Quantity of Raw Material consumed} &= \left[\text{Cost of opening stock of Raw Materials} + \text{Total cost of Raw Materials purchased} \right] - \left[\text{Cost of closing stock of Raw Materials} \right] \\ &= \left[\text{Cost of Raw Materials available for consumption during the period} - \text{Cost of closing stock of Raw Materials} \right] \end{aligned}$$

It may be noted at this stage of analysis that, any other expense incurred to purchase the raw material should also be considered while computing the cost of raw materials consumed.

(b) Direct Labour Cost and other Direct Expenses: Since the companies produce only one product each, entire direct cost is charged to the output. The information pertaining to direct labour cost can easily be collected from the payroll records. Similarly, other expenses (other than the direct materials cost and direct labour cost) which are incurred for production and which can be easily identified with the production are also charged to the output of the period.

(c) Indirect Expenses: Detailed cost records kept and maintained by the companies provide the necessary details about indirect expenses. They are charged to the production. If output differs significantly from one period to another, these expenses may be charged to production at predetermined rates.

(d) Stocks of Work-in-progress: The work-in-progress is in the form of semi-finished goods. While computing the total cost of units produced (which is essential for ascertaining the unit cost), the cost of work-in-progress at the commencement of the period is added to, and the cost of work-in progress at the end of the period is subtracted from, the aggregate of prime cost and factory overheads as presented below.

Extracts from Cost Sheet

<i>Particulars</i>	<i>Amount (₹)</i>
Prime cost	7,64,500
Add: Factory overheads	2,12,300
∴ Manufacturing cost of current period	9,76,800
Add: Cost of opening stock of work-in-progress	66,900
Cost of total goods processed during the period	10,43,700
Less: Cost of closing stock of work-in-progress	85,600
∴ Factory or production cost	9,58,100

(e) Stocks of Finished Goods: While computing the total cost and the unit cost, it is necessary to adjust for the costs of finished goods at the beginning and at the end of the period. This adjustment is made to the cost of production which represents the aggregate of production cost (also called, factory cost which is arrived at after making adjustment for costs of work-in-progress at the beginning and at the end of the period) and administrative overhead expenses. The cost of finished goods at the beginning of the period is added to, and the cost of finished goods at the end of the period is deducted from, the cost of production as presented below.

Extracts from Cost Sheet

<i>Particulars</i>	<i>Amount (₹)</i>
Production or factory cost	9,58,100
Add: Administrative overhead expenses	68,800
∴ Cost of production	10,26,900
Add: Cost of opening stock of finished goods	1,20,000
∴ Cost of goods available for Sale	11,46,900
Less: Cost of closing stock of finished goods	95,000
∴ Cost of goods sold	10,51,900

Industries and Cost Units

<i>Sl. No</i>	<i>Industry</i>	<i>Cost Unit</i>
01	Cement Industry	A tonne of cement
02	Brick Industry	Per 1,000 bricks
03	Paper Industry	Per kg or lb of paper
04	Steel Industry	A tonne of steel
05	Spinning Mills	A kg of yarn
06	Flour Mills	A sack of flour

07	Collieries	A tonne of coal
08	Quarries	A tonne of stone
09	Dairies	A litre of milk
10	Breweries	A litre of wine, etc

Preparation of Cost Sheet or Statement of Cost

The details about different items of cost collected by following the procedure described above are presented systematically in the form of a statement called cost sheet. CIMA, London defined 'cost sheet' as **a document which provides for the assembly of the detailed cost of a cost centre or cost unit**. This cost sheet helps to know the cost of production and sales, both total and per unit, and to make a comparative study — comparing either with the company's previous performance or with that of other firms in the industry. However, it may be noted here that the cost sheet is only a memorandum statement. It is a periodical statement (prepared either annually or monthly or weekly) analyzing the total cost into prime cost, factory cost, cost of production, cost of sales, etc. It presents both the total cost and the cost per unit. This becomes very clear from the specimen of cost sheet presented below.

Proforma of a detailed Cost Sheet

Cost Sheet of ABC Company for the Period ...

<i>Particulars</i>	<i>₹</i>	<i>Cost (₹)</i>	
		<i>Total</i>	<i>per Unit</i>
Cost of opening stock of materials	A ₀₁		
Add: Purchases	A ₀₂		
Carriage inwards	A ₀₃		
	A ₀₄		
Less: Cost of closing stock of materials	A ₀₅		
∴ Cost of material consumed		A	a
Direct wages		B	b
Direct expenses		C	c
∴ Prime cost		D	d
Add: Factory overheads:			
Cost of indirect materials	E ₀₁		
Indirect wages	E ₀₂		
Factory rent	E ₀₃		
Factory lighting and heating	E ₀₄		
Factory power	E ₀₅		

Haulage	E ₀₆		
Directors' fee (factory)	E ₀₇		
Factory stationery	E ₀₈		
Consumable stores	E ₀₉		
Factory water, steam	E ₁₀		
Depreciation of factory plant	E ₁₁		
Drawing office salary	E ₁₂		
Factory insurance	E ₁₃		
Factory repairs	E ₁₄		
Compensation to workers	E ₁₅	E	e
∴ Manufacturing cost of current period		F	f
Add: Cost of opening stock of work-in-progress		G	g
		H	h
Less: Cost of closing stock of work-in-progress		I	i
∴ Factory or works or production cost		J	j
Add: Office and administrative expenses:			
Office salaries	K ₀₁		
Office rent and rates	K ₀₂		
Directors' fee (office)	K ₀₃		
Postage and telegram	K ₀₄		
Office stationery	K ₀₅		
Insurance (office)	K ₀₆		
Gas and water (office)	K ₀₇		
Repairs and renewals (office)	K ₀₈		
Lighting and heating (office)	K ₀₉		
Depreciation of office equipment	K ₁₀		
Managers' salary and commission	K ₁₁		
Audit fees and legal fee	K ₁₂		
Depreciation of office building and freehold property, etc.	K ₁₃	K	k
∴ Cost of production		L	l
Add: Cost of opening stock of finished goods		M	m
∴ Cost of goods available for sale		N	n
Less: Cost of closing stock of finished goods		O	o
∴ Cost of goods sold		P	p
Add: Selling and distribution expenses:			
Advertising	Q ₀₁		
Salaries and commission of travelling salesmen	Q ₀₂		
Depreciation of delivery van	Q ₀₃		

Showroom expenses	Q ₀₄		
Storage or godown expenses	Q ₀₅	Q	q
∴ Total cost of sales		R	r
Add: Profit (or Less: Loss)		S	s
∴ Sales revenue/price		T	t

Illustration – 17

Prepare cost sheet for the month of September 2012 and find cost per unit and profit or loss from the following.

- Raw materials consumed: ₹ 80,000
- Productive wages: ₹ 48,000
- Machine hours worked: 10,000 and machine hour rate is ₹ 5 per hour
- Office and administration overheads is 20% of works cost
- Selling and distribution overheads is ₹ 2 per unit
- Units produced during the month 4,000 but sold 3,000 units at ₹ 100 each.

[BBA, Karnatak University, November 2001 and 2003, and April 2003]

Solution:

Cost Sheet for the Month September 2012

Particulars	Amount (₹)	
	Total	per Unit
Cost of materials consumed	80,000	20.00 ¹
Productive wages	48,000	12.00 ¹
∴ Prime cost	1,28,000	32.00
Add: Production overheads (10,000 hours × ₹ 5)	50,000	12.50 ¹
∴ Factory or works cost	1,78,000	44.50
Add: Office overheads (20% of works cost ₹ 1,78,000)	35,600	8.90
∴ Cost of 4,000 units produced	2,13,600	53.40
Less: Cost of unsold stock of 1,000 units ²	53,400	—
Cost of 3,000 units sold	1,60,200	53.40
Add: Selling and distribution overhead (3,000 units × ₹ 2)	6,000	2.00
∴ Cost of sales	1,66,200	55.40
Sales revenue (at ₹ 100 a unit)	3,00,000	100.00
∴ Profit	1,33,800	44.60

1. (Total ÷ 4,000 units)

2. (Units produced 4,000 – Units sold 3,000) = Closing stock 1,000 units

$$\text{Cost of closing stock} = \left[\frac{\text{₹ } 2,13,600}{4,000 \text{ units}} \times 1,000 \text{ units} \right] = \text{₹ } 53,400 \text{ or}$$

$$\text{Cost of closing stock} = (1,000 \text{ units} \times \text{₹ } 53.4 \text{ cost of production per unit}) = \text{₹ } 53,400$$

Illustration – 18

The following information relate to manufacture and sale of a product, Supreme, during the month of March 2013.

Purchase of raw materials: ₹ 1,20,000	Machine hours worked: 9,000
Opening stock of raw materials: ₹ 35,000	Machine hour rate: ₹ 5 per hour
Closing Stock of raw materials: ₹ 20,000	Office overhead cost: 5% of works cost
Purchase returns: ₹ 10,000	Units produced 300 but sold 225 units at ₹ 975
Productive wages paid: ₹ 45,000	Selling overhead cost: ₹ 200 per unit
Productive wages in arrears: ₹ 15,000	

You are required to prepare cost sheet for the month and find unit cost and profit.

[BBA, Karnatak University, November 2002]

Solution:**Cost Sheet of ... Company for the month of March 2013**

<i>Particulars</i>	<i>Amount (₹)</i>	
	<i>Total</i>	<i>per Unit</i>
Cost of opening stock of raw materials	35,000	
Add: Purchases ₹ 1,20,000		
Less: Purchase returns 10,000	1,10,000	
Cost of Raw materials available for consumption	1,45,000	
Less: Cost of closing stock of raw materials 20,000		
∴ Cost of raw materials consumed	1,25,000	416.67 ¹
Productive Wages: Paid ₹ 45,000		
Arrears 15,000	60,000	200.00 ¹
∴ Prime cost	1,85,000	616.67
Add: Production overheads (9,000 hours × ₹ 5)	45,000	150.00
∴ Factory cost	2,30,000	766.67
Add: Office overheads (5% of works cost ₹ 2,30,000)	11,500	38.33
∴ Cost of goods available for sales	2,41,500	805.00
Less: Cost of unsold stock ² 60,375		—
Cost of Goods sold	1,81,125	805.00
Add: Selling overheads (225 units × ₹ 200)	45,000	200.00
∴ Cost of sales	2,26,125	1,005.00
Sales Revenue (225 units × ₹ 975)	2,19,375	975.00
∴ Loss	6,750	30.00

1. (Total ÷ 300 units)

2. [(₹ 2,41,500 ÷ 300 units) × 75 units] = (₹ 805 × 75 units) = ₹ 60,375

Illustration – 19

From the following particulars, prepare cost sheet and show sales price.

Raw materials on 1-4-2012: ₹ 30,000	Direct wages: ₹ 1,00,000
Work-in-progress 1-4-2012: ₹ 10,000	Factory overheads: 80% of direct wages
Raw materials on 31-3-2013: ₹ 20,000	Administrative overheads: ₹ 40,000
Work-in-progress 31-3-2013: ₹ 8,000	Selling and distribution overheads: ₹ 20,000
Purchase of raw materials: ₹ 2,00,000	Profit on sales: 20%
Sale of scrap: ₹ 5,000	

[BBM, Bangalore University, May 2001]

Solution:**Cost Sheet for the year ended 31st March, 2013**

Particulars	Amount (₹)
Cost of opening stock of raw materials	30,000
Add: Purchase of raw materials	2,00,000
∴ Cost of raw materials available for consumption	2,30,000
Less: Cost of closing stock of raw materials	20,000
∴ Cost of raw materials consumed	2,10,000
Add: Direct wages	1,00,000
∴ Prime Cost	3,10,000
Add: Factory overheads (80% of wages ₹ 1,00,000)	₹ 80,000
Less: Sales value of scrap	5,000
∴ Manufacturing cost of current production	3,85,000
Add: Cost of opening stock of work-in-progress	10,000
Cost of goods processed during the period	3,95,000
Less: Cost of closing stock of work-in-progress	8,000
∴ Production cost	3,87,000
Add: Administrative overheads	40,000
∴ Cost of production	4,27,000
Add: Selling and distribution overheads	20,000
∴ Cost of sales	4,47,000
Add: Profit (20% of sales or 25% of cost of sales) ¹	1,11,750
∴ Sales price	5,58,750

1. If selling price = 100, then profit = ₹ 20. Therefore, cost of sales = ₹ 80. That means, (Cost ₹ 80 + Profit ₹ 20 = Selling price ₹ 100). Therefore, Profit as a %age of Cost = $[(\text{₹ } 20 \div \text{₹ } 80) \times 100] = 25\%$

Illustration – 20

From the following information, prepare a cost sheet.

	1 st April, 2013	30 th April, 2013
Raw material	₹ 95,000	₹ 1,28,500
Finished goods	71,500	42,000
Work-in-progress	30,000	23,000

Purchase of raw materials:	₹ 90,000	Administrative expenses:	₹ 11,500
Direct wages:	₹ 68,000	Sale of factory scrap:	₹ 3,000
Purchase returns:	₹ 2,000	Selling and distribution costs:	₹ 10,500
Works expenses:	₹ 35,500	Sales:	₹ 2,95,000

[BBA, Karnatak University, November 2004]

Solution:**Cost Sheet of Company for the month of April 2013**

<i>Particulars</i>	<i>Amount (₹)</i>
Cost of opening stock of raw materials	95,000
Add: Purchase of raw materials	₹ 90,000
Less: Purchase Returns	2,000
Cost of raw materials available for consumption	1,83,000
Less: Cost of closing stock of raw materials	1,28,500
∴ Cost of raw materials consumed	54,500
Direct wages	68,000
∴ Prime cost	1,22,500
Add: Works expenses	₹ 35,500
Less: Sale of factory scrap	3,000
Manufacturing cost of current period	1,55,000
Add: Cost of opening stock of work-in-progress	30,000
Cost of total goods processed during the period	1,85,000
Less: Cost of closing stock of work-in-progress	23,000
Production cost	1,62,000
Add: Administrative expenses	11,500
∴ Cost of production	1,73,500
Add: Cost of opening stock of finished goods	71,500
Cost of goods available for sale	2,45,000
Less: Cost of closing stock of finished goods	42,000
∴ Cost of goods sold	2,03,000
Add: Selling and distribution expenses	10,500

	∴ Cost of sales	2,13,500
Sales revenue		2,95,000
	∴ Profit	81,500

Illustration – 21

From the following, prepare cost sheet.

Opening stock of finished goods: ₹ 9,750

Closing stock of finished goods: ₹ 11,100

Raw materials purchased: ₹ 35,250

Carriage on material purchased: ₹ 850

Direct wages: ₹ 18,450

Factory expenses: ₹ 2,750

Selling expenses: ₹ 2,450

Office on cost: ₹ 1,850

Sales: ₹ 75,000

Sale of scrap: ₹ 250

[BBA, Karnatak University, May 2004]

Solution:**Cost Sheet of Company for the period**

<i>Particulars</i>	<i>Amount (₹)</i>
Purchase of raw materials	35,250
Add: Carriage on materials purchased	850
	36,100
Direct wages	18,450
∴ Prime cost	54,550
Add: Factory expenses ₹ 2,750	
Less: Sale of scrap 250	2,500
∴ Production cost	57,050
Add: Office-on-cost	1,850
∴ Cost of production	58,900
Add: Cost of opening stock of finished goods	9,750
Cost of goods available for sale	68,650
Less: Cost of closing stock of finished goods	11,100
∴ Cost of goods sold	57,550
Add: Selling expenses	2,450
∴ Cost of sales	60,000
Sales revenue	75,000
∴ Profit	15,000

Illustration – 22

A company submits the following information on 31st March, 2013.

Sales for the year ₹ 55,000

Direct labour ₹ 13,000

Opening stock of finished goods ₹ 1,400

Factory overheads 60% of labour

Opening stock of work-in-progress ₹ 800	Closing stock of finished goods ₹ 1,600
Purchase of materials ₹ 22,000	Closing stock of work-in-progress ₹ 1,200
Opening stock of materials ₹ 600	Selling expenses 10% of sales
Closing stock of materials ₹ 800	Office expenses 5% of sales

Prepare cost sheet.

[BBA, Karnatak University, May 2002]

Solution:

Cost Sheet of Company for the Period ended 31st March, 2013

<i>Particulars</i>	<i>Amount (₹)</i>
Cost of opening stock of raw materials	600
Add: Purchase of materials	22,000
∴ Cost of materials available for consumption	22,600
Less: Cost of closing stock of raw materials	800
∴ Cost of materials consumed	21,800
Add: Direct Labour Cost	13,000
∴ Prime cost	34,800
Add: Factory overheads (60% of labour ₹ 13,000)	7,800
∴ Manufacturing cost of current production	42,600
Add: Cost of opening stock of work-in-progress	800
Cost of goods processed during the period	43,400
Less: Cost of closing stock of work-in-progress	1,200
∴ Production cost	42,200
Add: Office expenses (5% of sales ₹ 55,000)	2,750
∴ Cost of production	44,950
Add: Cost of opening stock of finished goods	1,400
∴ Cost of goods available for sale	46,350
Less: Cost of closing stock of finished goods	1,600
∴ Cost of goods sold	44,750
Add: Selling expenses (10% of sales ₹ 55,000)	5,500
∴ Total cost of sales	50,250
Sales revenue	55,000
∴ Profit	4,750

Illustration – 23

The books and records of Anand Manufacturing Company present the following data for the month of August 2012.

Direct labour cost: ₹ 16,000 (160% of factory overhead)

Cost of goods sold: ₹ 56,000

Inventory accounts showed the following opening and closing balances.

	1 st August	31 st August	Other Data:	
Raw materials	₹ 8,000	₹ 8,600	Selling expenses:	₹ 3,400
Work-in-Progress	8,000	12,000	Administration expenses:	₹ 2,600
Finished goods	14,000	18,000	Sales for the month:	₹ 75,000

You are required to prepare a statement showing cost of goods manufactured and sold, and profit earned.

[CA (Inter), November 1978]

Solution:

Since the information about the cost price of material purchased during the month of August is not given, it is necessary to compute the same first (with the help of the given details) before preparing the cost sheet.

Computation of Purchase Value

Particulars	Amount (₹)
Cost of goods sold	56,000
Add: Cost of closing stock of finished goods	18,000
	74,000
Less: Cost of opening stock of finished goods	14,000
	60,000
Less: General and administrative overheads	2,600
	57,400
Add: Cost of closing stock of work-in-progress	12,000
	69,400
Less: Cost of opening stock of work-in-progress	8,000
	61,400
Less: Factory overheads (₹ 16,000 ÷ 160%)	10,000
	51,400
∴ Prime cost	51,400
Less: Direct labour cost	16,000
	35,400
∴ Material cost	35,400
Add: Cost of closing stock of raw materials	8,600
	44,000
Less: Cost of opening stock of raw materials	8,000
	36,000
∴ Purchase of materials	36,000

Statement of Cost of Goods manufactured and sold, and Profit earned

Particulars	Amount (₹)
Cost of opening stock of materials	8,000
Add: Purchases	36,000
Cost of materials available	44,000
Less: Cost of closing stock of raw materials	8,600
Cost of materials consumed	35,400
Direct labour cost	16,000
∴ Prime cost	51,400
Add: Factory overheads (₹ 16,000 ÷ 160%)	10,000
	61,400
Add: Cost of opening stock of work-in-progress	8,000
	69,400
Less: Cost of closing stock of work-in-progress	12,000
(Net) Cost of goods manufactured	57,400
Add: General and administration expenses	2,600
	60,000
Add: Cost of opening stock of finished goods	14,000
	74,000
Less: Cost of closing stock of finished goods	18,000
Cost of goods sold	56,000
Add: Selling expenses	3,400
Cost of sales	59,400
Sales revenue	75,000
∴ Profit earned	15,600

Illustration – 24

From the following cost data, prepare a statement of cost of production and show the cost per unit of each item of expenditure.

Materials at commencement: ₹ 2,00,000	Work-in-Progress at commencement:	
Materials at close: ₹ 1,80,000	At prime cost ₹ 50,000	
Purchase of materials: ₹ 5,00,000	Manufacturing expenses 10,000	₹ 60,000
Direct wages: ₹ 1,50,000	Work-in-Progress at close:	
Manufacturing expenses: ₹ 1,00,000	At prime cost ₹ 41,000	
	Manufacturing expenses 9,000	50,000

If the selling and distribution expenses are A 20,000, the stocks of the finished articles at the commencement and at the close are A 5,000 and A 15,000 respectively, and the sales are A 8,00,000, what is the net profit? Units produced: 10,000.

[B.Com., Bangalore University, 1978]

Solution:**Statement of Cost and Profit for the Period ended**

Particulars	Total		per Unit (₹)
	₹	₹	
Cost of materials consumed:			
Materials cost at the commencement of the year	2,00,000		
Add: Purchases	5,00,000		
∴ Cost of materials available for consumption	7,00,000		
Less: Materials cost at the end of the year	1,80,000	5,20,000	52.00
Direct wages		1,50,000	15.00
		6,70,000	67.00
Add: Work-in-progress at the beginning (at prime cost)		50,000	
Less: Work-in-progress at the end (at prime cost)	41,000	9,000	0.90
∴ Prime cost		6,79,000	67.90
Manufacturing expenses	1,00,000		
Add: Manufacturing expenses relating to opening WIP	10,000		
	1,10,000		
Less: Manufacturing expenses relating to closing WIP	9,000	1,01,000	10.10
Cost of production		7,80,000	78.00
Add: Cost of finished goods at the beginning		5,000	
		7,85,000	
Less: Cost of closing stock of finished goods		15,000	
Cost of goods sold		7,70,000	77.00
Add: Selling and distribution expenses		20,000	2.00
Cost of sales		7,90,000	79.00
Profit (because, sales = ₹ 8,00,000)		10,000	1.00
Sales revenue		8,00,000	80.00

Illustration – 25

From the under-mentioned particulars appearing in the books of Brick Works, you are required to prepare a monthly cost sheet showing the cost components and the cost of 1,000 bricks made. Also show the profit or loss per 1,000 bricks.

Materials:	Production per month: 74,00,000 bricks
Coal: ₹ 31,500	Sales per month at ₹ 27.5 per 1,000: 70,00,000 bricks
Royalty: ₹ 5,500	Stock, 1 st January: 2,00,000 bricks
Stores: ₹ 15,000	Stock, 31 st January: 6,00,000 bricks
Labour: Brick making: ₹ 50,000; and Indirect: ₹ 15,000	

Works overheads: 25% on prime cost, and office overheads: 10% of works costs. Assume that the opening stock was valued at the same rate per 1,000 bricks as the production for January.

[B.Com., Bangalore University, 1978]

Solution:

Cost Sheet (for the month ended 31st January ...)

Particulars	Amount (₹)	
	Total	for 1,000 bricks
Cost of materials: Coal	₹ 31,500	₹ 4.257
Royalty	5,500	0.743
Stores	15,000	2.027
Direct wages	50,000	6.757
∴ Prime cost	1,02,000	13.784
Add: Works overheads (at 25% on prime cost) ¹	25,500	3.446
Indirect labour cost	15,000	2.027
∴ Works cost	1,42,500	19.257
Add: Office overheads (10% of work costs)	14,250	1.926
∴ Office cost 74,00,000 bricks	1,56,750	21.183
Add: Cost of opening stock of finished goods ²	2,00,000	4,236
	76,00,000	1,60,986
Less: Cost of unsold stock ³	6,00,000	12,709
∴ Cost of goods sold	70,00,000	1,48,277
Sales revenue (at ₹ 27.5 per 1,000 bricks)	1,92,500	27.500
∴ Profit	44,223	6.318

1. Assumed to be excluding indirect labour cost of ₹ 15,000

2. $[(₹ 1,56,750 \div 74 \text{ lakh bricks}) \times 2 \text{ lakh bricks}] = ₹ 4,236$

3. $[(₹ 1,60,986 \div 76 \text{ lakh bricks}) \times 6 \text{ lakh bricks}] = ₹ 12,709$

Illustration – 26

The accounts of Sabita Manufacturing Co., for the year ended 31st December, 2012 show the following.

Drawing office salaries	₹ 13,000	Bad debts written off	₹ 13,000
Counting house salaries	25,200	Materials purchased	3,70,000
Cash discounts allowed	5,800	Travelling expenses	4,200
Carriage and cartage outwards	8,600	Travellers' salaries and commission	15,400
Carriage and cartage inwards	14,300	Productive wages	2,52,000
Repairs of plant, machinery and tools	8,900	Depreciation:	
Rent, rates, taxes and insurance:		Plant, machinery and tools	13,000

Factory	17,000	Furniture	600
Office	4,000	Directors' fees	12,000
Sales	9,22,200	Gas and water:	Factory
2,400			
Stock of materials:		Office	800
31 st December, 2011	1,25,600	Manager's salary	20,000
31 st December, 2012	96,000	(3/4 th factory and 1/4 th office)	
		General expenses	6,800

Prepare a statement showing (a) cost of materials consumed, (b) prime cost, (c) factory-on-cost, (d) factory cost, (e) general-on-cost, (f) total cost, and (g) net profit.

[B.Com., Andhra University, 1977]

Solution:

Statement of Cost and Profit for the year ended 31st December, 2012

<i>Particulars</i>	<i>Amount (₹)</i>	<i>Amount (₹)</i>
Cost of opening stock of material	1,25,600	
Add: Purchases ₹ 3,70,000		
Carriage and cartage inwards 14,300	3,84,300	
∴ Cost of material available for consumption	5,09,900	
Less: Cost of closing stock of material 96,000		
∴ Cost of materials consumed (a)		4,13,900
Productive wages		2,52,000
∴ Prime cost (b)		6,65,900
Add: Factory-on-cost (c):		
Drawing office salaries	13,000	
Repair of plant, machinery and tools	8,900	
Rent, rates, taxes and insurance – Factory	17,000	
Depreciation — plant, machinery and tools	13,000	
Gas and water – Factory	2,400	
Manager's salary (₹ 20,000 × 3/4)	15,000	
Factory-on-cost (c)		69,300
∴ Factory cost (d)		7,35,200
Add: General-on-cost (administration, selling and distribution and others):		
Counting house salaries	25,200	
Carriage and cartage outwards	8,600	
Bad debts written off	13,000	
Office rent, rates, taxes and insurance	4,000	
Travelling expenses	4,200	

Travellers' salaries and commission	15,400	
Depreciation — furniture	600	
Directors' fees	12,000	
Manager's salary ($\text{₹ } 20,000 \times 1/4$)	5,000	
Gas and water — office	800	
General expenses	6,800	
	\therefore General-on-cost (e)	95,600
	Total cost (f)	8,30,800
Sales Revenue		9,22,200
	\therefore Net profit (g)	91,400

Note: Cash discount is excluded

Illustration – 27

Find out, in an appropriate cost sheet form, the unit cost of a completed motor car in an automobile factory, with the following data extracted from the books of the factory for the month of May 2012.

(a) Opening balance on 1st May, 2012:

Semi-manufactured materials, 100 tons at ₹ 50 per ton

Direct labour incurred: ₹ 55 per ton

Overheads: Fixed: 50% of direct labour

Variable: 100% of direct labour

Miscellaneous components: ₹ 2,000

(b) Expenditure incurred during May 2012:

Materials drawn: 200 tons at ₹ 60 per ton

Components drawn: ₹ 10,000

Direct Labour: 1,000 men at ₹ 2 per day for 30 days

2,000 men at ₹ 1 per day for 30 days

Overheads: Fixed: 100% of direct labour

Variable: 150% of direct labour

(c) Value on 31st May, 2012:

Components not utilized: ₹ 2,000

The value of scrap returned to stores at ₹ 10 per ton, 50 tons.

The number of motor cars manufactured during the month was 25.

[B.Com., Bangalore University, 1971]

Solution:**Cost Sheet of Co., Ltd., (for the month ended 31st May, 2012)**

<i>Particulars</i>	<i>Amount (₹)</i>		<i>Amount (₹)</i>	
	<i>Total</i>	<i>Total</i>	<i>per Car</i>	<i>per Car</i>
Cost of Opening WIP (Semi-manufactured materials):				
Materials (100 tons × ₹ 50)	5,000		200	
Labour at ₹ 55 per ton	5,500		220	
Overheads: Variable (100% of direct labour)	5,500		220	
Fixed (50% of direct labour)	2,750	18,750	110	750
<i>Add: Expenses incurred during the month:</i>				
Materials (200 tons × ₹ 60)	12,000			
<i>Less: Materials returned</i> (50 tons × ₹ 10)	500	11,500		460
Components: Opening	2,000			
<i>Add: Drawn</i>	10,000			
	12,000			
<i>Less: Closing</i>	2,000	10,000		400
Direct labour (1,000 men × ₹ 2 × 30 days)	60,000		2,400	
(2,000 men × ₹ 1 × 30 days)	60,000	1,20,000	2,400	4,800
Overheads: Variable (150% on direct labour)	1,80,000		7,200	
Fixed (100% of direct labour)	1,20,000	3,00,000	4,800	12,000
∴ Total cost		4,60,250		18,410

Illustration – 28

The following particulars have been extracted from the accounts of Janatha Motor Manufacturing Company for the year ended 31st December, 2012.

Opening stock of raw materials: ₹ 1,00,000 Works overhead expenses: ₹ 3,92,000
Purchase of raw materials: ₹ 24,00,000 Establishment and general charges: ₹ 2,98,340
Carriage on raw materials: ₹ 1,20,000 Closing stock of raw materials: ₹ 1,50,000
Wages of manual and machine labour for manufacturing motor cars: A 14,00,000

Find out works cost and total cost of motor cars, the percentage of works overhead cost to the wages and the percentage of establishment and general charges to works cost. Work out what price the company should quote for a motor car which, it is estimated, will require an expenditure of ₹ 11,000 in raw materials and ₹ 8,000 in wages so that it would yield a profit at 25% on the total cost or 20% on the selling price.

[B.Com., Andhra University, 1977]

Solution:**Calculation of Overhead Rates, Works Cost and Total Cost of Motor Cars**

<i>Particulars</i>	<i>Amount (₹)</i>
Cost of opening stock of raw materials	1,00,000
Add: Purchase of raw materials	24,00,000
Carriages on raw materials	1,20,000
	25,20,000
	26,20,000
Less: Cost of closing stock of raw materials	1,50,000
∴ Cost of material used	24,70,000
Wages of manual and machine labour	14,00,000
Prime cost	38,70,000
Works expenses (works out to 28% of wages)	3,92,000
Works cost	42,62,000
Establishment and general expenses (works out to 7% of works cost)	2,98,340
∴ Total cost	45,60,340

Calculation of Price to be quoted for a Motor Car

<i>Particulars</i>	<i>Amount (₹)</i>
Materials cost	11,000
Wages	8,000
Prime cost	19,000
Add: Works expenses (28% of Wages)	2,240
Works cost	21,240
Add: General and establishment expenses (7% of works cost)	1,487
Total cost	22,727
Add: Desired profit (25% of cost or 20% on selling price)	5,682
∴ Selling price to be quoted	28,409

Illustration – 29

M/s NC Ltd has received an enquiry from a reputed cigarette factory for the supply of 20 million shells per month. Capacity exists for the same but a balancing equipment costing A 50,000 has to be installed. The cost details are as follows.

- Duplex board: 50 tonnes at ₹ 5.50 per kg
- Printing ink and gum: ₹ 2 per 1,000 shells
- Packing cost: ₹ 7.50 per one lakh shells
- Labour hours: 1,600 hours of which 500 hours will be overtime

- (e) Labour rate: ₹ 4 per hour with double the normal rate for overtime
 (f) Overheads: ₹ 16,300 per month
 (g) Selling and distribution expenses: ₹ 16,300 per month.

NOTES

Since duplex board is in short supply, procurement is made on cash basis. Working capital to the extent of 50% of the sales value is required. The company expects a net return of 20% on the additional capital required for undertaking this order. Prepare a cost estimate and indicate the price to be quoted to the customer.

[ICWA (Final), December 1980]

Solution:**Estimated Cost Statement (for 20 million shells per month)**

Particulars	Amount (₹)
Duplex board (50 tonnes × ₹ 5.5 per kg × 1,000 kgs per tonne)	2,75,000
Printing ink and gum [(₹ 2 ÷ 1,000 shells) × 2,00,00,000 shells]	40,000
Packing cost [(₹ 7.50 ÷ 1,00,000 shells) × 2,00,00,000 shells]	1,500
Labour cost: Normal (1,100 hours × ₹ 4)	₹ 4,400
Overtime: [500 hours × (₹ 4 × 2)]	4,000
Overheads	16,300
Depreciation on new equipment (assuming 10 years life) [(₹ 50,000 ÷ 10) × (1 ÷ 12)]	417
Selling and distribution expenses	16,300
Total cost	3,57,917
Add: Desired net return (see, the note below)	50,880
∴ Price to be quoted (for 2,00,00,000 shells)	4,08,797

Sales = (Cost + Profit) = [₹ 3,57,917 + 20% of (Fixed capital, ₹ 50,000 + Working capital, 50% of Sales)].
 Let, 'A' be the sales revenue.

$$\therefore A = 3,57,917 + [(50,000 + 50\% \text{ of } A) \times 20\%] = 3,57,917 + [(50,000 + 0.5A) \times 0.2]$$

$$= (3,57,917 + 10,000 + 0.1A) = (3,67,917 + 0.1A)$$

$$\therefore (A - 0.1A) = 3,67,917 = 0.9A$$

$$\therefore A = (3,67,917 \div 0.9) = ₹ 4,08,797 = \text{Sales revenue}$$

$$\therefore \text{Profit} = (\text{Sales revenue ₹ 4,08,797} - \text{Cost ₹ 3,57,917}) = ₹ 50,880$$

Illustration – 30

The following figures have been obtained from the cost records of Rio Manufacturing Company for the year 2011.

Cost of materials: ₹ 2,40,000

Administration expenses: ₹ 1,34,400

Wages for labour: ₹ 2,00,000

Selling expenses: ₹ 89,600

Factory overhead: ₹ 1,20,000

Profit: ₹ 1,68,000

Distribution expenses: ₹ 56,000

A work order was executed in 2012 and the following expenses were incurred — cost of materials: ₹ 32,000 and wages for labour: ₹ 20,000. Assuming that in 2012, the rate for factory overhead went up by 20%, distribution charges went down by 10%, and selling charges went up by 12.5%, at what price should the product of the job be quoted so as to earn the same (earlier) rate of profit on the selling price? Show the full working. Distribution, administration and selling charges are based on the factory cost.

[B.Com., Andhra University, 1977]

Solution:

Calculation of Overhead Rates and Desired Profit Rate (based on 2011 details)

Particulars	Amount (₹)	Rates
Cost of materials	2,40,000	
Wages	2,00,000	
Prime cost	4,40,000	
Factory overheads	1,20,000	60% of direct labour cost
Works cost	5,60,000	
Add: Administration expenses	1,34,400	24% of works cost
Office cost	6,94,400	
Selling expenses	89,600	16% of works cost
Distribution expenses	56,000	10% of works cost
∴ Cost of sales	8,40,000	
Profit	1,68,000	20% of cost of sales or $16\frac{2}{3}\%$ of sales
∴ Sales revenue	10,08,000	

Calculation of Quotation Price, 2012

Particulars	Amount (₹)
Cost of materials	32,000
Direct wages	20,000
Prime cost	52,000
Factory expenses [(60% of ₹ 20,000) + 20% = (₹ 12,000 + 20%)]	14,400
Works cost	66,400
Add: Administration expenses (24% of ₹ 66,400)	₹ 15,936
Selling expenses [(16% of ₹ 66,400) + 12.5%]	11,952
Distribution expenses [(10% of ₹ 66,400) – 10%]	5,976
Cost of sales	1,00,264
Add: Desired profit (20% of cost of sales)	20,053
∴ Quotation price	1,20,317

Illustration – 31

From the following particulars, prepare a cost sheet to show the cost of 10,00,000 toys manufactured during the year 2012 by Bhagavan Toys Manufacturing Company and also prepare a statement showing the profit earned for 1,000 toys sold during the year.

- (a) Raw materials consumed: Opening stock: ₹ 1,500, Purchases: 1,400 tons at ₹ 10 per ton, and Closing stock: ₹ 500
- (b) Direct labour: ₹ 20,000
- (c) Works overhead: 20% on direct labour
- (d) Administrative overhead at 10% on works cost
- (e) Opening stock of finished goods: 2,00,000 toys at ₹ 40 per 1,000 toys
- (f) Closing stock of finished goods: 3,00,000 toys (to be valued at the rate of cost of production during 2012)
- (g) Sales during the year: 9,00,000 toys at ₹ 50 per 1,000 toys.

The company wants to quote for the supply of 2,00,000 toys during the year 2013. It is expected the decrease in material cost by 10% and increase in labour cost by 5%. Maintain the same percentage of works overheads and administrative overheads as in the previous year. The quotation should fetch a profit of 25% on cost. Calculate the quotation amount.

[B.Com., University of Mysore, October 1983]

Solution:**Statement of Cost of Manufacture of 10,00,000 toys (2012)**

<i>Particulars</i>	<i>Amount (₹)</i>
Cost of opening stock of raw materials	1,500
Add: Purchase (1,400 tons × ₹ 10)	14,000
	15,500
Less: Cost of closing stock of raw materials	500
∴ Cost of materials consumed	15,000
Direct labour cost	20,000
∴ Prime cost	35,000
Works overheads (20% of direct labour cost, ₹ 20,000)	4,000
∴ Works Cost	39,000
Administrative overhead expenses (10% of works cost, ₹ 39,000)	3,900
∴ Cost of manufacture of 10,00,000 toys	42,900

Statement showing the Profit per 1,000 toys

<i>Particulars</i>	<i>Number of toys</i>	<i>Amount (₹)</i>	
		<i>Total</i>	<i>for 1,000 toys</i>
Cost of opening stock of finished goods	2,00,000	8,000	
Cost of production	10,00,000	42,900	

		12,00,000	50,900	
<i>Less:</i>	Cost of unsold stock of finished goods			
	[(₹ 42,900 ÷ 10,00,000 toys) × 3,00,000 toys]	3,00,000	12,870	
	∴ Cost of sales	9,00,000	38,030	42.26
Sales revenue			45,000	50.00
	∴ Profit		6,970	7.74

Statement showing the Price to be Quoted (for the supply of 2,00,000 toys)

<i>Particulars</i>	<i>Amount (₹)</i>
Material cost $[(₹ 15,000 \div 10,00,000) \times 2,00,000] - 10\% =$	2,700
Direct labour $[(₹ 20,000 \div 10,00,000) \times 2,00,000] + 5\%$	4,200
Prime cost	6,900
Works overhead (20% of direct labour cost ₹ 4,200)	840
Works cost	7,740
Administrative expenses (10% of works cost ₹ 7,740)	774
Total cost	8,514
Add: Desired profit (25% on cost ₹ 8,514)	2,129
\therefore Price to be quoted	10,643

Illustration – 32

M/s Srikanth Machines Ltd gives the following information. Prepare a statement showing (a) cost of materials used (b) prime cost (c) works cost (d) total cost (e) percentage of works overhead charges to wages and (f) percentage of administration and selling overhead charges to works cost.

Direct wages: ₹ 2,00,000	Stock of finished goods 31-12-2012: ₹ 35,000
Purchase of raw materials: ₹ 3,50,000	Sale of finished goods: ₹ 6,25,000
Stock of raw materials 1-1-2012: ₹ 13,000	Works overhead charges: ₹ 45,000
Stock of raw materials 31-12-2012: ₹ 15,000	Administration and selling overhead charges: ₹ 90,000
Stock of finished goods 1-1-2012: ₹ 30,000	

The company is about to send a tender for the supply of machine. It is estimated that the materials required would cost ₹ 35,000 and the direct wages would be ₹ 12,500. The tender is to be made at a profit of 20% on selling price. State what the amount of tender would be based on the above percentages.

[B.Com., University of Mysore, October 1985]

Solution:**NOTES****Cost Sheet for the year ended 31st December, 2012**

<i>Particulars</i>	<i>Amount (₹)</i>
Cost of opening stock of materials	13,000
Add: Purchase of raw materials	3,50,000
	3,63,000
Less: Cost of closing stock of raw materials	15,000
∴ Cost of materials used (a)	3,48,000
Direct wages	2,00,000
Prime cost (b)	5,48,000
Add: Works overhead charges ¹	45,000
Works cost (c)	5,93,000
Add: Administration and selling overhead ²	90,000
Cost of opening stock of finished goods	30,000
	7,13,000
Less: Cost of closing stock of finished goods	35,000
∴ Total cost (d)	6,78,000

$$1. \text{ Works Overheads Absorption Rate} = \left[\frac{\text{Works Overheads}}{\text{Wages}} \times 100 \right] = [(\text{₹ } 45,000 \div \text{₹ } 2,00,000) \times 100]$$

$$= 22.5\% \text{ of wages}$$

$$2. \text{ Administration and Selling Overheads Absorption Rate} = \left[\frac{\text{Administration and Selling Overheads}}{\text{Works Cost}} \times 100 \right] = [(\text{₹ } 90,000 \div \text{₹ } 5,93,000) \times 100]$$

$$= 15.177\% \text{ of works cost}$$

Statement showing the amount of Tender

<i>Particulars</i>	<i>Amount (₹)</i>
Material cost	35,000
Direct labour cost	12,500
Prime cost	47,500
Add: Manufacturing overheads (22.5% of wages ₹ 12,500)	2,813
Works cost	50,313
Add: Administration and selling overheads (15.177% of works cost ₹ 50,313)	7,636
Total cost	57,949
Add: Desired profit (20% of selling price or 25% of total cost)	14,487
∴ Amount of tender	72,436

Illustration – 33

The following figures have been taken from the record of Rico Calculators Ltd for the year ending 31st December, 2012.

- (a) Stock of materials on 1-1-2012: ₹ 30,000
- (b) Stock of materials on 31-12-2012: ₹ 10,000
- (c) Purchase of materials: ₹ 60,000d. Wages paid: ₹ 90,000
- (e) Factory expenses: ₹ 20,000
- (f) Administrative expenses: ₹ 9,000
- (g) Stock of finished goods (1-1-2012): ₹ 10,000. Stock of finished goods (31-12-2012): ₹ 50,000i. Sales: ₹ 2,12,000
- (j) Total number of machine hours worked during the year: 5,000 hours
- (k) Total number of labour hours worked during the year: 4,500 hours
- (l) Total number of calculators produced during the year 2012: 5,000 units

The company was required to quote for the supply of 1,000 calculators during the year 2013. The calculators to be quoted are of uniform quality and make, and similar to those manufactured during the year 2012. However, as from 1st January, 2013, the cost of material has increased by 10% and the cost of factory labour by 5%. The estimated machine hours for the quotation order are 1,000 hours and estimated labour hours required are 900 hours. The factory expenses are recovered on the basis of machine hours and administrative expenses are recovered on the basis of labour hours worked. Prepare a statement showing the price to be quoted to give the same percentage of net profit on sales as was realized during 2012.

[B.Com., Karnatak University, April 1986]

Solution:

Cost Sheet for the year ended 31st December, 2012
(production = 5,000 calculators)

Particulars	Cost (₹)	
	Total	per unit
Cost of opening stock of materials	30,000	
Add: Purchase of materials	60,000	
∴ Cost of materials available for consumption	90,000	
Less: Cost of closing stock of materials	10,000	
∴ Cost of materials consumed	80,000	16.00
Wages	90,000	18.00
∴ Prime Cost	1,70,000	34.00
Factory expenses (₹ 4 per machine hour)	20,000	4.00
Administration expenses (₹ 2 per labour hour)	9,000	1.80
∴ Total cost (5,000 units)	1,99,000	39.80
Add: Cost of opening stock of finished goods	10,000	
	2,09,000	

Less: Cost of closing stock of finished goods	50,000	
Cost of sales	1,59,000	
Sales revenue	2,12,000	
∴ Profit	53,000	
%age of Profit on Sales = $[(\text{₹ } 53,000 \div \text{₹ } 2,12,000) \times 100] = 25$		

Statement showing the Price to be quoted for 1,000 calculators

Particulars	Amount (₹)
Materials cost $[(\text{₹ } 16 + 10\% \text{ of } \text{₹ } 16) \times 1,000 \text{ calculators}]$	17,600
Wage $[(\text{₹ } 18 + 5\% \text{ of } \text{₹ } 18) \times 1,000 \text{ calculators}]$	18,900
Prime cost	36,500
Factory expenses $(\text{₹ } 4 \text{ per hour} \times 1,000 \text{ machine hours})$	4,000
Administration costs $(\text{₹ } 2 \text{ per hour} \times 900 \text{ labour hours})$	1,800
Total cost	42,300
Add: Profit (25% of sales or $33\frac{1}{3}\%$ of cost)	14,100
∴ Price to be quoted (₹ 56.40 per calculator)	56,400

Illustration - 34

On 31st July, 2012, a carpet manufacturer desired to quote for a contract for the supply of 2,000 carpets. From the following particulars, prepare a statement showing the price to be quoted to give the same percentage of net profit on the turnover as was realized during the six months ending 30th June, 2012.

- Stock of materials on 1st January, 2012: ₹ 2,00,000
- Stock of materials on 30th June, 2012: ₹ 20,000
- Purchase of materials during six months: ₹ 3,00,000
- Factory wages during six months: ₹ 6,00,000
- Indirect wages during six months: ₹ 92,000
- Sales during six months: ₹ 10,80,000
- Stock of finished carpets on 1-1-2012: ₹ Nil
- Stock of finished carpets on 30-6-2012: ₹ 2,00,000

The number of carpets manufactured during the six months was 24,000 including those sold and those in stock at the close of the period. The carpets to be quoted are of uniform size and quality, and similar to those manufactured during the six months to 30th June, 2012. As from 1st July, 2012, the cost of factory labour has increased by 10% and of materials by 50%.

[M.Com., University of Mysore, May 1982]

Solution:**Cost and Profit Statement for the six months ended 30th June, 2012**

<i>Particulars</i>	<i>Total (₹)</i>	<i>Unit Cost (₹)</i>
Cost of opening stock of materials	2,00,000	
Add: Purchase of materials	3,00,000	
∴ Cost of materials available	5,00,000	
Less: Cost of closing stock of materials	20,000	
∴ Cost of materials consumed for 24,000 carpets	4,80,000	20.000
Factory wages	6,00,000	25.000
Prime cost	10,80,000	45.000
Add: Indirect wages	92,000	3.833
Factory cost	11,72,000	48.833
Less: Cost of closing stock of finished goods	2,00,000	
Cost of goods sold	9,72,000	
Profit (difference which works out to 10% on sales or 1/9 th of cost)	1,08,000	
Sales revenue	10,80,000	

Quotation for 2,000 carpets

<i>Particulars</i>	<i>Amount (₹)</i>	
	<i>per Carpet</i>	<i>Total</i>
Material cost (₹ 20 + 50% of ₹ 20) = (₹ 20 + ₹ 10)	30.000	60,000
Wages (₹ 25 + 10% of ₹ 25) = (₹ 25 + ₹ 2.5)	27.500	55,000
∴ Prime cost	57.500	1,15,000
Indirect wages	3.833	7,666
∴ Factory cost	61.333	1,22,666
Add: Desired profit (1/9 th of cost)	6.815	13,630
∴ Quotation price	68.148	1,36,296

Illustration – 35

A factory can produce 60,000 units per annum at its optimum (100%) capacity. The estimated costs of production are as under.

- Direct material: ₹ 3 per unit;
- Direct labour: ₹ 2 per unit
- Indirect expenses: Fixed: ₹ 1,50,000 per annum, Variable: ₹ 5 per unit, and Semi-variable: ₹ 50,000 per annum up to 50% capacity and an extra expense of ₹ 10,000 for every 25% increase in capacity or part thereof.

The factory produces only against orders (and not for own stock). If the production programme of the factory is as indicated below and the management desires to ensure a profit of ₹ 1,00,000 for the year, work out the average selling price at which each unit should be quoted. Ignore selling, distribution and administration overhead.

- First three months of the year: 50% of the capacity, and
- Remaining nine months: 80% of the capacity.

[ICWA (Inter), June 1982]

Solution:

Output for the,

$$(a) \text{ First three months} = \left[\frac{60,000 \text{ units}}{12 \text{ months}} \times 50\% \times 3 \text{ months} \right] = 7,500 \text{ units}$$

$$(b) \text{ Next nine months} = \left[\frac{60,000 \text{ units}}{12 \text{ months}} \times 80\% \times 9 \text{ months} \right] = 36,000 \text{ units}$$

Therefore, total production = 43,500 units.

Computation of Average Unit Selling Price to be quoted

Particulars	Cost (₹)		Total (₹)
	first 3 months (50%, 7,500)	next 9 months (80%, 36,000)	for the year (43,500)
Direct materials cost (₹ 3 per unit)	22,500	1,08,000	1,30,500
Direct labour cost (₹ 2 per unit)	15,000	72,000	87,000
∴ Prime cost	37,500	1,80,000	2,17,500
Add: Indirect expenses:			
Variable (₹ 5 a unit)	37,500	1,80,000	2,17,500
Fixed ¹	37,500	1,12,500	1,50,000
Semi-variable ²	12,500	52,500	65,000
∴ Total cost	1,25,000	5,25,000	6,50,000
Add: Desired profit			1,00,000
∴ Sales revenue			7,50,000

1. Annual fixed cost = ₹ 1,50,000. Therefore, monthly fixed cost works out to ₹ 12,500. Hence, for the first three months, it comes to ₹ 37,500 and for the next nine months, ₹ 1,12,500.

2. Semi-variable cost = ₹ 50,000 per annum up to 50%. Therefore, for the first three months, semi-variable costs = $[(₹ 50,000 \div 12 \text{ months}) \times 3 \text{ months}] = ₹ 12,500$. During the next nine months, plant is set to operate at 80%. Therefore, annual semi-variable costs = ₹ 70,000 (i.e., ₹ 50,000 for the first 50%, ₹ 10,000 for the next 25%, and another ₹ 10,000 for the next 25% or part thereof). Hence, the semi-variable cost for the next nine months = $[(₹ 70,000 \div 12 \text{ months}) \times 9 \text{ months}] = ₹ 52,500$.

∴ Average unit selling price = $(₹ 7,50,000 \div 43,500 \text{ units}) = ₹ 17.24$.

Illustration – 36

A company manufactures four sizes of Formica board A, B, C and D at its workshop and transfers them to sales department at a profit of 50% on transfer price. The workers are paid piece rates of ₹ 2, ₹ 4, ₹ 6 and ₹ 8 per board of sizes A, B, C and D respectively. Dearness allowance at flat rate of ₹ 10 per direct labour day is distributed among workers. Miscellaneous direct payments to workers are 25% of the basic wages. From the following information for the month of July 2012, you are required to find out the total cost per board of each size and its transfer price.

Size:	A	B	C	D
Direct labour days:	100	200	300	200
Number of boards manufactured:	4,000	2,500	2,000	1,500
Direct materials:	₹ 25,000	15,000	20,000	20,000

Works overheads: Indirect materials: ₹ 8,000; Indirect labour: ₹ 4,000; and Indirect expenses: ₹ 8,000. Indirect materials are to be apportioned on the basis of direct material cost and remaining expenses are to be allocated on the basis of direct labour days.

[CA (Inter), 1976]

Solution:**Statement of Total Cost per Board of each size and Transfer Price**

Particulars	Size of Formica Board (₹)				Amount (₹)
	A	B	C	D	
Direct materials cost	25,000	15,000	20,000	20,000	80,000
Add: Direct wages ¹	11,000	14,500	18,000	17,000	60,500
∴ Prime cost	36,000	29,500	38,000	37,000	1,40,500
Add: Overhead Expenses:					
Indirect materials (25:15:20:20) ²	2,500	1,500	2,000	2,000	8,000
Indirect labour (1:2:3:2) ³	500	1,000	1,500	1,000	4,000
Indirect expenses (1:2:3:2) ³	1,000	2,000	3,000	2,000	8,000
∴ Total production cost	40,000	34,000	44,500	42,000	1,60,500
Production cost per board	10.00	13.60	22.25	28.00	
Add: Profit (50% of transfer price or 100% of cost)	10.00	13.60	22.25	28.00	
∴ Transfer Price per Board	20.00	27.20	44.50	56.00	

- | | | | | | |
|-------------------------------------------------|--------|--------|--------|--------|--------|
| 1. Direct wages (Piece rate × Number of boards) | 8,000 | 10,000 | 12,000 | 12,000 | 42,000 |
| Add: Dearness Allowance | | | | | |
| (₹ 10 × Number of labour days) | 1,000 | 2,000 | 3,000 | 2,000 | 8,000 |
| Miscellaneous payment (25% of basic wages) | 2,000 | 2,500 | 3,000 | 3,000 | 10,500 |
| Total wages | 11,000 | 14,500 | 18,000 | 17,000 | 60,500 |
| 2. In the proportion of direct materials cost. | | | | | |
| 3. In the proportion of direct labour days. | | | | | |

10.9 SUMMARY

NOTES

Process costing is an accounting methodology that traces and accumulates direct costs, and allocates indirect costs of a manufacturing process. Costs are assigned to products, usually in a large batch, which might include an entire month's production.

Process costing is a type of operation costing which is used to ascertain the cost of a product at each process or stage of manufacture. CIMA defines process costing as "The costing method applicable where goods or services result from a sequence of continuous or repetitive operations or processes.

Specific Order Costing: This is a costing method applicable to those industries where the activity being accomplished consists of a task which is specifically identifiable at each stage of production.

Operation Costing: This is a costing method applicable to those industries where the activity consists of continuous or repetitive operations or processes and the products are identical and cannot be segregated.

Sequential Processes: When the finished product of Process I becomes the raw material for Process II, and the finished product of Process II becomes the raw material for Process III, and so on, the processes are called Sequential Processes. The flow of product, in this case, is known as Sequential Product Flow

After introduction to Unit Costing and one of its forms, viz., Single or Output Costing, analysis of Single Costing and the procedure of computing the cost (both the total and per unit) was made explaining in detail the major elements of costs and the accounting treatment of stock of work-in-progress and finished goods and also that of waste, scrap, spoilage and defectives. Then the procedure of preparation of cost sheet was explained followed by a number of illustrations. Then an attempt was made to analyse the role of Single Costing in computing the estimated costs to determine the prices that can be quoted for the specific offers. A number of problems were also discussed on this aspect and on the cost ascertainment when the firms produce two or more varieties of the same product.

10.10 GLOSSARY

- (a) **Process costing:** Process costing is an accounting methodology that traces and accumulates direct costs, and allocates indirect costs of a manufacturing process. Costs are assigned to products, usually in a large batch, which might include an entire month's production.

NOTES

- (b) **Specific Order Costing:** This is a costing method applicable to those industries where the activity being accomplished consists of a task which is specifically identifiable at each stage of production.
- (c) **Operation Costing:** This is a costing method applicable to those industries where the activity consists of continuous or repetitive operations or processes and the products are identical and cannot be segregated.
- (d) **Sequential Processes:** When the finished product of Process I becomes the raw material for Process II and the finished product of Process II becomes the raw material for Process III and so on, the processes are called Sequential Processes. The flow of product, in this case, is known as Sequential Product Flow.
- (e) **Parallel Processes:** When each process is independent of the other so that the finished product of one process does not become the raw material for the next process, the processes are known as Parallel Processes.

10.11 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What is process costing?
2. What is normal loss?
3. Why does abnormal loss or gain arise?
4. What do you mean by joint product?
5. State the characteristics of joint product.
6. What is by-product?
7. Name of the methods used for apportionment of joint cost.
8. What is Co-product?
9. How is by-product treated in cost Accounts?
10. Give the meaning of Joint and by product with example.
11. What do you mean by joint expenses?
12. What do you mean by reverse cost method.

(B) Extended Answer Questions

1. Define process costing. In which industries it is relevant?
2. Distinguish between joint product and By-product.

3. What is process costing. Name any four industries where the method is adopted.
4. Explain By-Product, joint product and main product.
5. Discuss the methods of accounting for By-Products.
6. Briefly explain the methods of joint product accounting?
7. State the main objectives of analysis of joint cost.

NOTES

(C) True or False

1. Process costing is an accounting methodology that traces and accumulates direct costs and allocates indirect costs of a manufacturing process.
2. Specific Order Costing is a costing method applicable to those industries where the activity being accomplished consists of a task which is specifically identifiable at each stage of production.
3. Process Costing is a costing method applicable to those industries where the activity consists of continuous or repetitive operations or processes and the products are identical and cannot be segregated.
4. When each process is independent of the other so that the finished product of one process does not become the raw material for the next process, the processes are known as Parallel Processes.

(D) Multiple Choice Questions

1. What is an accounting methodology that traces and accumulates direct costs, and allocates indirect costs of a manufacturing process?
 - (a) Process costing
 - (b) Operation Costing
 - (c) Both a and b
 - (d) None of the above
2. What is a costing method applicable to those industries where the activity consists of continuous or repetitive operations or processes and the products are identical and cannot be segregated?
 - (a) Process costing
 - (b) Operation Costing
 - (c) Both a and b
 - (d) None of the above

(E) Fill in the Blanks

1.is an accounting methodology that traces and accumulates direct costs, and allocates indirect costs of a manufacturing process.
2.is a costing method applicable to those industries where the activity being accomplished consists of a task which is specifically identifiable at each stage of production.

NOTES

3. is a costing method applicable to those industries where the activity consists of continuous or repetitive operations or processes and the products are identical and cannot be segregated.
4. When each process is independent of the other so that the finished product of one process does not become the raw material for the next process, the processes are known as.....

10.12 KEY TO CHECK YOUR ANSWER

- (C) 1. True, 2. True, 3. False, 4. True
- (D) 1. (a), 2. (b)
- (E) 1. Process costing, 2. Specific Order Costing, 3. Operation Costing, 4. Parallel Processes

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10.14 SUGGESTED READINGS

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2. Chandra, Prasanna, "Financial Management: Theory and Practices", Tata McGraw Hill, New Delhi.
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10.15 TERMINAL QUESTIONS

NOTES

1. What is by-product? How will you classify by products according to marketable condition at the split off point?

2. Define unit costing and explain the principal features of unit costing.

3. What is meant by output costing? Briefly explain the nature and industries that use single or output costing.

4. Enumerate the procedure of ascertaining the costs under output costing.

NOTES

5. Write an explanatory note on the ascertainment of material cost and the evaluation of closing stock of raw materials.

6. Few short answer questions.

- (a) Distinguish between normal loss and abnormal loss.

[B.Com., Bangalore University, April 2001 and November 2003]

- (b) What is normal loss?

[B.Com., Bangalore University, November 2002]

- (c) How do you treat opening and closing stocks of finished stocks?

[B.Com., Bangalore University, April 2004]

UNIT 11

ACTIVITY-BASED COSTING AND SERVICE COSTING

Structure:

- 11.1 Introduction
- 11.2 Concept of Activity-based Concept
- 11.3 Working of Activity-based Costing
- 11.4 Practical Problems
- 11.5 Service Costing
- 11.6 Meaning and Definitions of Service Costing
- 11.7 Scope of Service Costing
- 11.8 Operating Costing
- 11.9 Canteen Costing
- 11.10 Hotel Costing
- 11.11 Hospital Costing
- 11.12 Summary
- 11.13 Glossary
- 11.14 Check Your Progress (Multiple Choice/Objective Type Questions)
- 11.15 Key to Check Your Answer
- 11.16 Bibliography
- 11.17 Suggested Readings
- 11.18 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Activity-Based Costing
- Service Costing

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11.1 INTRODUCTION

Activity based costing (ABC) assigns manufacturing overhead costs to products in a more logical manner than the traditional approach of simply allocating costs on the basis of machine hours. Activity based costing first assigns costs to the activities that are the real cause of the overhead. It then assigns the cost of those activities only to the products that are actually demanding the activities.

Activity based costing originally developed for manufacturing. Like manufacturing industries, financial institutions have diverse products and customers, which can cause cross-product, cross-customer subsidies. Since personnel expenses represent the largest single component of non-interest expense in financial institutions, these costs must also be attributed more accurately to products and customers. One product might take more time in one expensive machine than another product. Since the amount of direct labor and materials might be the same, additional cost for use of the machine is not being recognized when the same broad 'on-cost' percentage is added to all products. Consequently, when multiple products share common costs, there is a danger of one product subsidizing another.

11.2 CONCEPT OF ACTIVITY-BASED CONCEPT

Historical Development

Traditionally, cost accountants had arbitrarily added a broad percentage of analysis into the indirect cost. In addition, activities include actions that are performed both by people and machine. However, as the percentages of indirect or overhead costs rose, this technique became increasingly inaccurate, because indirect costs were not caused equally by all products. ABC is based on George Staubus' Activity Costing and Input-Output Accounting. The concepts of ABC were developed in the manufacturing sector of the United States during the 1970s and 1980s. During this time, the Consortium for Advanced Management-International, now known simply as CAM-I, provided a formative role for studying and formalizing the principles that have become more formally known as Activity-Based Costing.

Robin Cooper and Robert S. Kaplan, proponents of the Balanced Scorecard, brought notice to these concepts in a number of articles published in Harvard Business Review beginning in 1988. Cooper and Kaplan described ABC as an approach to solve the problems of traditional cost management systems. These traditional costing systems are often unable to determine accurately the actual costs of production and of the costs of related services. Consequently managers were making decisions based on inaccurate data especially where there are multiple products.

NOTES

Instead of using broad arbitrary percentages to allocate costs, ABC seeks to identify cause and effect relationships to objectively assign costs. Once costs of the activities have been identified, the cost of each activity is attributed to each product to the extent that the product uses the activity. In this way ABC often identifies areas of high overhead costs per unit and so directs attention to finding ways to reduce the costs or to charge more for costly products.

Activity-based costing was first clearly defined in 1987 by Robert S. Kaplan and W. Bruns as a chapter in their book *Accounting and Management: A Field Study Perspective*. They initially focused on manufacturing industry where increasing technology and productivity improvements have reduced the relative proportion of the direct costs of labor and materials, but have increased relative proportion of indirect costs. For example, increased automation has reduced labor, which is a direct cost, but has increased depreciation, which is an indirect cost.

Activity-based costing was later explained in 1999 by Peter F. Drucker in the book *Management Challenges of the 21st Century*. He states that traditional cost accounting focuses on what it costs to do something, for example, to cut a screw thread; activity-based costing also records the cost of not doing, such as the cost of waiting for a needed part. Activity-based costing records the costs that traditional cost accounting do not do. The overhead costs assigned to each activity comprise an activity cost pool.

Meaning of Activity Based Costing

An accounting method that identifies the activities that a firm performs and then assigns indirect costs to products is called activity based costing. An activity based costing system recognizes the relationship between costs, activities and products. This relationship assigns indirect costs to products less arbitrarily than traditional methods.

Cost accounting approach concerned with matching costs with activities (called cost drivers) that cause those costs. It is a more sophisticated kind of absorption-costing and replaces labor based costing system.

Characteristics of successful ABC

The characteristics of successful ABC are as follows:

1. Products consume activities.
2. It is the activities that consume resources.
3. Activities are the cost drivers.
4. Activities are not necessarily based on the volume of production.
5. ABC allocates direct and indirect costs.

NOTES

6. Strong top management support.
7. Should have cross-functional involvement.

According to Professors Robert Kaplan and Robin Cooper of Harvard University, Activity Based Management (ABM) enables management to better understand.

1. How and where the firm makes a profit?
2. Indicates where money is being spent.
3. Which areas have the greatest potential for cost reduction?

An activity-based costing system is a two-stage process of assigning costs to products.

1. In stage one, activity-cost pools are established.
2. In stage two a cost driver is identified for each activity-cost pool.
3. Then the costs in each pool are assigned to each product line in proportion to the amount of the cost driver consumed by each product line.

The four broad categories of activities identified in an Activity Based Costing system are as follows:

1. **Unit-level activities:** Must be done for each unit of production.
2. **Batch-level activities:** Must be performed for each batch of products.
3. **Product-sustaining activities:** Needed to support an entire product line.
4. **Facility-level (or general-operations-level) activities:** Required for the entire production process to occur.

Objectives of Activity Based Costing

The objectives of Activity Based Costing are as follows:

1. To identify significant activities and assign overhead costs to each activity in proportion to resources used.
2. Identify cost drivers appropriate to each activity and allocate overhead to the products.
3. To remove nonmanufacturing costs from product costing.
4. To determine the single best measure for allocating all overhead costs to products or services.
5. Fully cost products for external reporting purposes.
6. To understand overhead and the profitability of products, services, and customers.

7. To determining and providing elaborate information related to the activity consumption, cost and interest in production business as a whole.
8. To provide accurate cost information that is going to be used in managerial decisions.

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The features of ABC Systems

The features of ABC systems are as follows:

1. Emphasize the need to obtain a better understanding of the behavior of overhead costs, and thus ascertain what causes overhead costs and how they relate to products
2. It assumes that activities cause costs and also that products/ services create demands for activities
3. It seeks to understand the forces that cause overhead costs to change over time
4. A link is made between activities and products by assigning costs of activities to products based on an individual product's consumption or demand for each activity
5. It simply recognizes that businesses must understand the factors that drive each major activity, the costs of activities and how activities relate products
6. Redesign or improve processes.
7. Eliminations of less value added activity or support services costs (strategic purpose).

11.3 WORKING OF ACTIVITY-BASED COSTING

The working of activity based costing is as follows:

1. Identify activities and activity pool.
2. Classification of each activity according to the cost hierarchy (i.e. into unit-level, batch-level, product level and facility level).
3. Identification and accumulation of total costs of each activity.
4. Identification of the most appropriate cost driver for each activity.
5. Directly estimate cost to activities and cost objects.
6. Assign cost to activity cost pools.
7. Calculation of total units of the cost driver relevant to each activity.
8. Calculation of the activity rate i.e. the cost of each activity per unit of its relevant cost driver.

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9. Assign cost to cost objects.
10. Prepare reports.

The design of ABC systems involves the following stages:

1. Identify the major activities that take place in organizations.
2. Create a cost pool/cost center for each activity.
3. Determine the cost driver for each major activity.
4. Assigning the cost activities to product's according to the product's demand for activities.

Six essential steps in designing an ABC system include:

1. Identify, define, and classify activities and key attributes.
2. Assign the cost of resources to activities.
3. Assign the cost of secondary activities to primary activities.
4. Identify cost objects and specify the amount of each activity consumed by specific cost objects.
5. Calculate primary activity rates.
6. Assign activity costs to cost objects.

Steps to implement Activity-Based costing

1. Identify and assess ABC needs - Determine viability of ABC method within an organization.
2. Training requirements - Basic training for all employees and workshop sessions for senior managers.
3. Define the project scope - Evaluate mission and objectives for the project.
4. Identify activities and drivers - Determine what drives what activity.
5. Create a cost and operational flow diagram – How resources and activities are related to products and services?
6. Collect data – Collecting data where the diagram shows operational relationship.
7. Build a software model, validate and reconcile.
8. Interpret results and prepare management reports.
9. Integrate data collection and reporting.

How Install ABC Costing

Just like any other process installation procedures, Activity Based Costing too has a sequence of steps to be followed for successful working of the system. The same is discussed below:

1. Understanding and analyzing manufacturing process,
2. Study of the Activities involved,
3. Activity Cost Pool,
4. Cost Drivers identification with associated costs.

1. Understanding and analyzing manufacturing process: For installation of any costing system, study of manufacturing process is essential. For Activity Based Costing system also, it is necessary to study the manufacturing process and ascertain various stages involved in the same so that ‘activities’ involved in the same can be identified.

2. Study of the Activities involved: The next step is to study the activities involved in the manufacturing process. This step is very crucial as the entire Activity Based Costing is based on identification of activities. In this step, the activities involved in a process are identified. *For example*, in a bank, opening of an account is one of the services offered to customers. In this service, activities involved are studied. It may be revealed that opening of a new account involves activities like issuing the application form, verification of the same and accepting the initial amount required for opening of an account. Similarly in case of a manufacturing company, purchase procedure may involve activities like receiving of purchase requisition for concerned department or the stores department, inviting quotations from various suppliers, placing of an order, follow up of the same and finally receiving and inspection of the goods. In case of an educational institute, activities in a library may include activities like issue of books, receipt of books, ordering new books, giving accession numbers, stock taking, removing obsolete and outdated books, identification of slow moving and fast moving items etc. In this manner, whether in manufacturing or in service sector, activities are identified and the next step is to divide the activities into value adding and non value adding. The objective behind this is that attention can be focused on the value adding activities while non value adding activities can be eliminated in the future.

3. Activity Cost Pool: Cost pool is defined by CIMA as, ‘the point of focus for the costs relating to a particular activity in an activity based costing system.’ For example, in case of a library, the cost of issue and receipts, cost of ordering, stock taking costs etc. can be identified with ‘Library Cost’. In other words, ‘Library’ will be the cost pool in which all the costs mentioned above may be clubbed. In case of a manufacturing organization, as regards to stores, cost of classification, cost of issue of stores requisitions, inspection costs etc. can be pooled under the heading ‘stores’. Thus cost pool concept is similar to the concept of cost center. The cost pool is the point of focus or in other words, it is the total cost assigned to an activity. It is the sum of all the cost elements assigned to an activity.

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4. Cost Drivers: According to CIMA, ‘cost driver is any factor which causes a change in the cost of an activity, e.g. the quality of parts received by an activity is a determining factor in the work required by that activity and therefore affects the resource required. An activity may have multiple cost drivers associated with it.’ In other words, cost driver means the factors which determine the cost of an activity. *For example*, if we repeat the example of library, the number of receipts and issue of books will be cost drivers, in stores, number of stores requisitions will be cost drivers, in customer order processing the number of customers as well as number of orders will be cost drivers. Thus a cost driver is an activity which generates cost. Activity Based Costing is based on the belief that activities cause costs and therefore a link should be established between activities and product. The cost drivers thus are the link between the activities and the cost.

Cost Analysis under ABC

Activity Based Costing is the process of tracing costs first from resources to activities and then from activities to specific products. Activity Based Costing is a costing system which tries to charge the indirect costs to the products and services fairly accurately. The objective is fulfilled if it possible to ascertain accurately the information pertaining to the various activities a product or providing services undergo, then collect costs incurred upon each of these activities and form a base upon which such costs or allocated. Thus successful or fruitful will be the exercise if this can be done meticulously. However for effective implementation:

- (i) There is a need of involvement of the staff and their training on continuous basis. Similarly there is a need to review the working of the system at periodic intervals and keep a follow up of the feedback received. These actions will ensure effective implementation of the system.
- (ii) Support of top management is also required for effective implementation of this system. Activity Based Costing system is definitely a better system but much depends on the implementation of the same.
- (iii) Develop a system which meticulously and with implicit faith carries on with the right earnestness to make the system bear fruit.
- (iv) ABC, cost pools are often established for each level in a hierarchy of costs.

Limitations of ABC Implementation Issues

The limitations of ABC implementation issues are as follows:

1. Lack of a business purpose.
2. Lack of senior management commitment.
3. Delegating the ABC project to consultants.

4. Poor ABC model design.
5. Individual and organizational resistance to change.
6. ABC models may require regular supply of data and information.

NOTES**Reasons for implementing ABC**

The reasons for implementing ABC are as follows:

1. Better Management.
2. Budgeting, Performance Measurement.
3. Calculating costs more accurately.
4. Ensuring product/customer profitability.
5. Evaluating and justifying investments in new technologies.
6. Improving product quality via better product and process design.
7. Increasing competitiveness or coping with more competition.
8. Overall Management.
9. Managing costs.
10. Providing behavioral incentives by creating cost consciousness among employees.
11. Responding to an increase in overheads.
12. Responding to increased pressure from regulators.
13. Supporting other management innovations such as TQM and JIT systems.

Application of ABC

The applications of ABC are as follows:

1. It is a modeling process applicable for full scope as well as for partial views.
2. It helps to identify inefficient products, departments and activities.
3. It helps to allocate more resources on profitable products, departments and activities.
4. It helps to control the costs at any per-product-level level and on a departmental level.
5. It helps to find unnecessary costs that may be eliminated.
6. It helps fixing the price of a product or service with any desired analytical resolution.
7. Better Management.
8. Budgeting, Performance measurement.

NOTES

9. Calculating costs more accurately.
10. Ensuring product /customer profitability.
11. Evaluating and justifying investments in new technologies.
12. Improving product quality via better product and process design.
13. Increasing competitiveness or coping with more competition.
14. Managing costs.
15. Responding to an increase in overheads.
16. Responding to increased pressure from regulators.
17. Supporting other management innovations such as TQM and JIT systems.

Meaning of Cost Driver

A cost driver is a characteristic of an event or activity that results in the incurrence of costs by that event or activity. In activity-based costing systems, the most significant cost drivers are identified. Then a database is created that shows how these cost drivers are distributed across products. This database is used to assign costs to the various products depending on the extent to which they use each cost driver.

Three important factors in selecting cost drivers for an ABC system are as follows:

1. Degree of correlation between consumption of an activity and consumption of the cost driver.
2. Cost of measurement of the cost driver.
3. Behavioral effects, that is, how the cost driver selected will affect the behavior of the individuals involved in the activity related to the cost driver.

Definition of Cost Pool

Activity cost pool is an aggregate of all the costs required to perform a task such as production.

Meaning of Production Cost

A cost incurred by a business when manufacturing a good or producing a service is called production cost. It combines raw material and labour. To figure out the cost of production per unit, the cost of production is divided by the number of units produced. A company that knows how much it will cost to produce an item, or produce a service, will have a clearer picture of how to better price the item or service and what will be the total cost to the company.

The steps to product costing are as follows:

NOTES

1. Identify the cost object.
2. Identify the direct costs associated with the cost object.
3. Identify overhead costs.
4. Select the cost allocation base for assigning overhead costs to the cost object.
5. Develop the overhead rate per unit for allocating overhead to the cost object.

Activity-based costing divides large heterogeneous cost pools into multiple smaller, homogeneous cost pools. ABC then attempts to select, as the cost allocation base for each overhead cost pool, a cost driver that best captures the cause and effect relationship between the cost object and the incurrence of overhead costs. Often, the best cost driver is a nonfinancial variable.

Traditional Costing Method

Traditional costing systems apply indirect costs to products based on a predetermined overhead rate. Unlike ABC, traditional costing systems treat overhead costs as a single pool of indirect costs. Traditional costing is optimal when indirect costs are low compared to direct costs.

There are several steps in the traditional costing process:

1. Identify indirect costs.
2. Estimate indirect costs for the appropriate period (month, quarter and year).
3. Choose a cost-driver with a causal link to the cost.
4. Estimate an amount for the cost-driver for the appropriate period.
5. Compute the predetermined overhead rate.
6. Apply overhead to products using the predetermined overhead rate.

Traditional Manufacturing Costing Systems

The traditional manufacturing costing systems are as follows:

1. It focuses on structure rather than on processes
2. Manufacturing companies operated for many years with the simple job order costing systems and process costing systems.
3. These systems assigned direct labor and direct materials costs to products.
4. Indirect costs, such as machine expense, scheduling, quality control, purchasing, maintenance, supervision and general factory expenses (for building, depreciation, insurance, utilities) were accumulated as support department expenses.

NOTES

Then to production departments in simple proportion to the direct labor hours/ other allocation bases worked in each department.

Distinguish between Traditional Costing and Activity Based Costing

The differences between Traditional Costing and Activity-based Costing are as follows:

Traditional Costing	Activity-Based Costing
1. TCA methods were designed and developed during (1870 to 1920).	1. ABC system began in 1981.
2. It is simple.	2. It is complex.
3. Less preferred.	3. Accurate and preferred.
4. It focuses on structure rather than on processes.	4. It focuses more on the activities than on structure.
5. Traditional costing assigns manufacturing overhead based on the volume of a cost driver, such as the amount of direct labor hours needed to produce an item.	5. Activity-based costing allocates the costs of manufacturing a product according to the activities needed to produce the item.
6. The cost objects and used up resources are required to evaluate the cost.	6. The cost is dependent upon the activities used up by the cost objects.
7. Traditional Cost Accounting uses a single overhead pool and is not able to calculate the true cost. The costs of the objects are allocated randomly based upon the labor or machine hours etc.	7. ABC costing includes identifiable products parts or labor whereas TCA arbitrarily accumulates expenses, salaries, depreciations etc.

Meaning of Unit Level Cost

A cost caused by the production or acquisition of a single unit of product or the delivery of a single unit of service is called unit level cost. For any given product, these costs change in a more-or-less linear fashion with the number of units produced. For example, fabric and thread are unit-level costs for an apparel manufacturer: if the company wants to double production, it will need twice as much fabric and thread.

Meaning of Batch Level Cost

The quantity of products produced in one process setting is called batch level cost. These costs change in a more-or-less linear fashion with the number of batches run. Machine setup costs are often batch-level costs. The time required to prepare a machine to run one batch of product is usually independent of the number of units in the batch: the same time is required to prepare the machine to run a batch of 100 units as a batch of 50 units. Hence, batch-level costs do not necessarily vary in a linear fashion with the number of units produced. Collection of costs based on activities forms the base here which needs to be recognized for accurate costing.

Meaning of By Product Level Cost**NOTES**

Costs that are direct and fixed with respect to a particular product are called product level cost. These costs are usually fixed and direct with respect to a given product. An example is the salary of a product manager with responsibility for only one product. The product manager's salary is a fixed cost to the company for a wide range of production volume levels. However, if the company drops the product entirely, the product manager is no longer needed.

Meaning of Facility Cost

Costs of an activity those are associated with maintaining the business and facilities are called facility cost. These costs are usually fixed and direct with respect to the facility. An example is property taxes on the facility, or the salaries of front office personnel such as the receptionist and office manager.

Examples of different level Activities on ABC**(a) Batch level activities**

The cost of some activities are driven by the number of batches of units produced. These activities are known as batch level activities. *Example:*

- (i) Material ordering.
- (ii) Machine set-up cost.
- (iii) Inspection of products (like first item of every batch).

(b) Product level activities

The cost of some activities are driven by the creation of a new product line and its maintenance. These activities are known as product level activities. *Example:*

- (i) Designing the product.
- (ii) Producing parts to a certain specified limit.
- (iii) Advertising cost, if advertisement is for individual products.

(c) Facility level activities

The cost of some activities cannot be related to a particular product line, instead they are related to maintaining the building and facilities. These activities are known as facility level activities. *Examples:*

- (i) Maintenance of buildings.
- (ii) Plant security.
- (iii) Production manager's salary.
- (iv) Advertising campaigns promoting the company.

NOTES

11.4 PRACTICAL PROBLEMS**Illustration – 1**

Archita Pvt. Ltd. an car repair business, uses activity based costing and accumulates overhead costs in the following cost pools:

- (a) Purchasing
- (b) Parts management
- (c) Human Resources
- (d) Quality Control
- (e) Equipment set-up
- (f) Training employees
- (g) Assembly department
- (h) Receiving department

You are to find out for each cost pool whether the cost pool would be unit-level, batch-level, product-level or facility level.

Solution:

Activity	Hierarchy
(a) Purchasing	Batch level
(b) Quality Control	Unit level
(c) Human Resources	Facility level
(b) Parts Management	Product level
(e) Equipment set-up	Unit level
(f) Receiving department	Batch level
(g) Assembly department	Unit level
(h) Training employees	Facility level

Illustration – 2

The Cost Accountant of A, B and C manufacturing attended a workshop on activitybased costing and was impressed by the results. After consulting with the production personnel, he prepared the following information on cost drivers and the estimated volume for each driver.

	Products			Total	NOTES
	A	B	C		
Units produced	25,000	15,000	5,000	45,000	
Direct materials					
Cost per units in (₹)	40.00	30.00	55.00		
Direct labour in (₹)	15.00	15.00	15.00		
<hr/>					
Cost driver	Cost driver volume			Total	
	A	B	C		
Number of setups	125	75	50	250	
Machine hours	2,500	1,500	2,000	6,000	
Direct labour hours	25,000	15,000	5,000	45,000	
Number of inspection	50	25	25	100	
<hr/>					
Activity					
Overhead cost in (₹)					

Machining:

Setup	1,50,000
Machining	7,50,000
Total of machining overhead cost	9,00,000

Assembly:

Assembly	3,60,000
Inspection	90,000
Total of assembly overhead cost	4,50,000
Total Overhead cost	13,50,000

- Determine the cost driver rate for each activity cost pool.
- Use the activity based costing method to determine the unit cost for each product.

Solution:**Activity cost drive rate****Machining**

Setup	₹ 600 per setup (₹1,50,000/250 setups)
Machining	₹ 125 per machine hour (₹ 7,50,000/6,000 machine hours)

NOTES

Assembly

Assembly ₹ 8 per direct labour hour
(₹ 3,60,000/45,000 direct labour hours)

Inspection ₹ 900 per inspection
(₹ 90,000/100 inspection)

In the following table, the total costs are divided by the number of units to arrive at the unit cost for each product.

	<i>A</i>	<i>B</i>	<i>C</i>
Direct materials in ₹	10,00,000	4,50,000	2,75,000
Direct labour in ₹	3,75,000	2,25,000	75,000
Applied overhead			
Set up cost in ₹ 600 per setup	75,000	45,000	30,000
Machine cost in ₹ 125 per machine hours	3,12,500	1,87,500	2,50,000
Assembly cost in ₹ 8 per labour hour	2,00,000	1,20,000	40,000
Inspection cost in ₹ 900 per inspection	45,000	22,500	22,500
Total overhead cost	6,32,000	3,75,000	3,42,500
Total cost	20,07,500	10,50,000	6,92,500
Number of units	25,000	15,000	5,000
Unit cost	80.3	70	138.5

Illustration – 3

The Vedaant Techno Company produces only two products: a major computer part and cell phones. The company uses a normal cost system and overhead costs are currently allocated using a plantwide overhead rate based on direct labour hour. Outside cost consultants have recommended, however the company use activity based costing to charge overhead to product.

The company expects to produce 4,000 computer parts and 2,000 cell phones in 2014. Each computer part requires two direct labour hours to produce and each cell phone requires one-half hour to produce. The direct material and direct labour costs included in the two products are as follows:

Item	Computer part	Cell Phone
Direct material (per unit)	30	17
Direct labour cost per unit	16	4

Budgeted (estimated) total factory overhead data for 2014:

Activity (in ₹)	Budgeted overhead	Estimated volume
Production setups	80,000	20 setups
Material handling	70,000	5,000 lbs.
Packaging and shipping	1,20,000	6,000 boxes
Total factory overhead	2,70,000	

Based on an analysis of the three overhead activities, it was estimated that the two product would require these activities as follows in 2014:

Activity	Computer Part	Cell Phone	Total
Production setups	5	15	20
Material handling (lbs)	1,000	4,000	5,000
Packaging and Shipping (boxes)	4,000	2,000	6,000

- (i) Calculate the cost of each product using a plant-wide rate based on direct labour hour.
- (ii) Calculate the activity cost rates for
 - (a) set-ups
 - (b) material handling and
 - (c) packaging and shipping.
- (iii) Cost out the two products using an activity based costing systems.

Solution:**Calculation of labour cost per direct labour hours**

<i>Item</i>	<i>Computer part</i>	<i>Cell Phone</i>
Direct labour cost per unit in (₹)	16	4
Number of direct labour hour per unit	2	0.5
Direct labour cost per hour	8	8

1. The cost of each product using a plant-wide rate based on direct labour hours:**Step 1:** Calculation of plant-wide overhead rate

Total budgeted direct labour hour =

4,000 computers parts x 2 direct labour hour per unit/

2,000 cell phones 0.5 direct labour hour per phone

= 9,000 direct labour hour

Over head rate = Total budgeted overhead dollars /

Total budgeted direct labour hours

= ₹ 2,70,000/9,000 direct labour hour

= ₹ 30 per direct labour hour

Step 2: Calculation of each product's cost using a plant-wide rate:

<i>Item</i>	<i>Computer part</i>	<i>Cell Phone</i>
Direct material (per unit) in (₹)	30	17
Direct labour cost per unit in (₹)	16	4
Manufacturing overhead at ₹ 30 per labour hour	60	15
Total	106	36

2. The activity cost rates for (a) set-ups, (b) material handling and (c) packaging and shipping

NOTES

<i>Activity</i>	<i>Budgeted overhead in (₹)</i>	<i>Estimated volume levels rates</i>	<i>Activity cost</i>
Production setups	80,000	20 per setup	4000
Material handling (lbs)	70,000	5,000	14 per lbs
Packaging and shipping (boxes)	1,20,000	6,000	20 per box

3. Cost of the two products using an activity based costing system

<i>Item</i>	<i>Computer part</i>	<i>Cell Phone</i>
No. of item	4,000	2,000
Direct material cost in (₹)	1,20,000	34,000
Direct labour cost in (₹)	64,000	8,000
Production set up cost in (₹)	20,000	60,000
Material handling cost in (₹)	14,000	56,000
Packaging and shipping	80,000	40,000
Total manufacturing cost for all units in (₹)	2,98,000	1,98,000
Total units produced	4,000 parts	2,000 phones
Total cost per unit in (₹)	74,50	99

Illustration – 4

M/s Ananya Ltd. has collected the following data for its two activities. It calculates activity cost rates based on cost driver capacity.

Activity	Cost Driver	Capacity	Cost
Power	Kilowatt driver	50,000 kilo watt Hrs	2,00,000
Quality Inspection (QI)	Number of inspection	10,000 Inspection	3,00,000

The company makes three products, M, S and T. For the year ended 31st March 2014, the following consumption of cost drivers was reported:

Product	Kilo Watt Hrs.	Quality Inspections
M	10,000	3,500
S	20,000	2,500
T	15,000	3,000

Required:

1. Compute the cost allocated to each product from each activity,
2. Calculate the cost of unused capacity for each activity.

Solution:

(i) Calculation of Cost Driver Rates:

$$\text{Power} = ₹ 2,00,000 / 50,000 \text{ kwh} = ₹ 4/\text{kw}$$

$$\text{Quality Inspections} = ₹ 3,00,000 / 10,000 = ₹ 30 \text{ per inspection.}$$

Products	M	S	T	Total
Power	$10,000 \times 4 = 40,000$	$20,000 \times 4 = 80,000$	$15,000 \times 4 = 60,000$	1,80,000
QI	$3,500 \times 30 = 1,05,000$	$2,500 \times 30 = 75,000$	$3,000 \times 30 = 90,000$	2,70,000
Total	1,45,000	1,55,000	1,50,000	4,50,000

(ii) Calculation of Unused capacity of each activity:

Power	₹ 2,00,000 - 1,80,000	= 20,000
QI	₹ 3,00,000 - 2,70,000	= 30,000
Total cost of unused capacity		50,000

Illustration – 5**NOTES**

Miss. Aditri Saha is the manager of Archita Global Education a firm that provides in house management development training courses. The firm offers two basic training packages: two-day short courses covering topics such as Managerial Economics, Business Communication and Business Statistics and five-day courses in areas such as Strategic Management, Supply Chain Management and Quantitative Techniques, MIS and Performance Management.

At the end of the year, Miss. Aditri Saha reviewed the firm's total expenses with a view to fix fees for the coming year. Over the past 12 months, the firm conducted 40, two days courses, with an average of 50 participants and 60, five-days courses, with an average of 60 participants. Total costs amounted to ₹ 6,96,000. Miss. Aditri Saha decided to base the fees for the coming year on the cost per day for the last year plus a 20 per cent profit margin.

Before settling these fees structure Miss. Aditri Saha met his friend who was a cost accountant. He suggested that activity-based costing would provide a more accurate estimate of the cost of the two types of courses. With his help, Miss. Aditri Saha identified the following activities and costs for last year.

Activity	Cost	Activity driver	Quantity of activity driver
Advertise Courses	50,000	Number of courses	100
Enrol. Participants	19,000	No. of Participants	3,800
Hire presenters	5,70,000	No. of days	380
Equipments	95,000	No. of days	380
Handouts	38,000	No. of days	380
Lunches	1,95,000	No. of Participants	3,800
Premises rent	38,000	No. of person-days	13,000
Total costs	9,60,000		

Required:

1. Estimate the costs of two-day courses and five-day courses, using the 'average cost per day' approach,
2. Estimate the cost of a two-day course and a five-day course, using activity based costing.
3. Which cost out of those estimated in requirements 1 and 2 do you think would provide a more reliable basis for cost-plus pricing? Explain your answer.

NOTES

Solution:**1. Cost per course based on average cost per day:**

Total number of days on which courses were

$$= (40 \times 2) + (60 \times 5) = 380 \text{ days}$$

Total cost of running for 380 days (as given) = ₹ 9,60,000

Cost per day ₹ 9,60,000/380 days = ₹ 2,526 per day.

Cost of two-day courses = ₹ 2,526 per day \times 2 days = ₹ 5,052.

Cost of five-day courses = ₹ 2,526 per day \times 5 days = ₹ 12,630.

2. Cost per course based on activity-based costing:

<i>Activity driver</i>	<i>Cost per unit of activity driver (₹)</i>	<i>Quantity of activity driver</i>	<i>Activity cost (₹)</i>
Advertisement	500	1 Course	500
Participants	₹ 5	50 Participants	250
Hired Presenters	1500	2 days	3,000
Premises rent	100	2 days	200
Equipment	250	2 days	500
Handouts	10	50 Participants	500
Lunches	15	100 per person-days	1,500
Total costs	6,450		

Cost per course based on activity costing:

<i>Activity driver</i>	<i>Cost per unit of activity driver (₹)</i>	<i>Quantity of activity driver</i>	<i>Activity cost (₹)</i>
Advertisement	500	1 Course	500
Participants	₹ 5	30 Participants	150
Hired Presenters	1500	5 days	7,500
Premises rent	100	5days	500
Equipment	250	5 days	1,250
Handouts	10	30 Participants	300
Lunches	15	150 per person-days	2,250
Total costs	12,450		

3. The activity-based costing system provides a more accurate estimate of cost. The average cost assumes that the cost of courses varies proportionately with the number of days. While this is true for some costs (such as the costs of presenters, premises rent and equipment) other costs are incurred for each course (such as advertising costs) or for each participant (such as the cost of enrolling participants and providing them with handouts).

Illustration – 6

M/s Udita Kitchen Wares Ltd. manufactures and sells three styles of kitchen bowl B-Brass, B-Chrome & B-White. It is observed that it takes 25 hours of machining to manufacture B-Brass, B-Chrome model while 10 hours is enough for B-white per batch of 1,000 units. The following are other details gathered:

Products & details	B-Brass	B-Chrome	B-White
Planned sales (in number of units)	30,000	50,000	40,000
Selling price (in ₹)	40	20	30
Direct Material cost (per unit)	8	4	8
Direct Labour (per unit)	15	3	9
Overhead cost (labour hour basis)	12	3	9
Set-up hours (Per 1,000 unit batch)	1	0.5	1
Quality check hours (Per 1,000 unit batch)	30	20	20
Direct labour hours (Per 1,000 unit batch)	40	10	30
Machine hours (Per 1,000 unit batch)	25	25	10

Total overhead costs and activity levels for the year are estimated as follows:

Activity	Overhead Costs	Activity levels
Direct Labour hours		2,900 hours
Machine hours		2,400 hours
Setups	₹ 4,65,500	95 setup hours
Inspection	₹ 4,05,000	2,700 inspection hours
Total overheads	₹ 8,70,500	

Required:

1. Using the traditional system, determine the operating profit per unit for the B-Brass model of Bowl,
2. Determine the activity-cost-driver rate for set-up costs and inspection costs.
3. Using the ABC system, for the B-Brass style if bowl;

NOTES

- (i) Compute the estimated overhead costs per unit,
 - (ii) Compute the estimated operating profit per unit.
4. Explain the reason for difference in profits computed above. Which method do you think a better estimate of profits and why?

Solution:

1. Traditional System:

Operating Profits per unit of B-Brass bowl is ₹ 5 {40 - (8 + 15 + 12)}

2. The activity cost driver rate for setup costs is ₹ 4.90 per set up hour.
(4,65,000/95).

For inspection costs is ₹ 150 per inspection hour (₹ 4,05,000/2,700)

3. (i) Activity Base Costing System:

Overhead costs per unit for B-Brass bowl are ₹ 9.40 per unit as below:

(30,000 annual units ÷ 1000 per batch = 30 batch).

30 batches × 1 set up hour per batch = 30 set up hours,

30 batches × 30 inspection hours per batch = 900 inspection hours.

(ii) 30 set up hours × 4,900 = ₹ 1,47,000/30,000 = ₹ 4.90 per unit

900 inspection hours × 150 = ₹ 1,35,000/30,000 = ₹ 4.50 per unit

Total overheads for B-Brass model of bowl ₹ 9.40 per unit

Operating profits per unit of B-Brass is ₹ 7.60 [40 - (8 + 15 + 9.40)]

4. Traditional system: Operating profits ₹ 5.00

ABC System: Operating profits ₹ 7.60

Explanation: The products do not require the same proportion of setup and inspection time. While costing under ABC only the actual costs attributable to activities connected with manufacturing is distinctly and logically gathered and allocated. While under tradition system the allocation does see for these difference but allocates on the basis of direct labour hours. Hence the difference and cost estimated under ABC throws the true picture.

Illustration – 7

M/s Ahsmitta Company Ltd. has been incurring two types of overheads costs-material handling and quality inspection. The costs expected for these categories for the coming year are as follows:

Material Handling ₹ 10,00,000

Quality Inspection ₹ 30,00,000

The company currently charges overhead using direct labour hours and actual capacity. This figure is 50,000 direct labour hours.

The factory manager has been asked to submit a bid and has assembled the following data concerning proposed job:

NOTES

Direct Materials	₹ 37,000
Direct Labour	₹ 70,000
Number of materials moves	10
Number of inspection	5

The manager has been informed that many competitors use Activity Based Costing approach to assign overhead to jobs. Before, submitting his bid for the proposed job, he wants to assess the effects of this alternative approach. He estimates that the expected number of material moves for all jobs during the year is 1,000. He also expects 5,000 quality inspections to be performed.

Required:

- Compute the total cost of proposed job using direct labour hours to assign overhead. Assume the bid price is full manufacturing cost plus 25% what would be the Manager's bid?
- Compute the total cost of the job using number of materials moves to allocate material-handling costs and the number of inspections to allocate the quality inspection costs. Assume bid price is full manufacturing costs plus 25%. What should be his bid using this approach?
- Which approach do you think best reflects the actual cost of the job.

Solution:

Total Overhead costs = 10,00,000 + 30,00,000 = ₹ 40,00,000

Plant absorption rate = 40,00,000/50,000 hrs. = ₹ 80 per hour.

Total cost of Job (Using direct labor hour).

Direct Materials	37,000
Direct Labour	70,000
Direct Expenses	Nil
Prime cost	1,07,000
Overheads 1000 Hrs × 80	80,000
Total costs	1,87,000
Plus 25% Margin (1,87,000 × 25%)	46,750
Bid Price	2,33,750

(b) Under Activity Based costing the overheads will be charged to the job based on the activity costs. Here, ₹ 10 lakhs is incurred to move materials while ₹ 30 lakhs for quality inspection. It also further observed that there were 1,000 material movements and 5,000 quality inspection done. In that case cost per activity, i.e. cost per movement of material and cost per quality inspection are ₹ 1,000 and ₹ 600 as below.

NOTES

$$\text{Cost Per Movement of Materials} = \frac{\text{Total material movement costs}}{\text{Number of material movements}}$$

$$= \frac{10,00,000}{1,000}$$

$$= 1,000 \text{ per move.}$$

$$\text{Quality Inspection} = 30,00,000/5,000 = ₹ 600 \text{ per inspection}$$

Total cost of Job (Activity Based Costing Approach)

Direct Materials	37,000
Direct Labour	70,000
Direct Expenses	Nil
Prime cost	1,07,000

Overheads:

Material movement (1,000 × 10)	10,000
Quality inspection (600 × 5)	3,000
Total costs	1,20,000
Add: 25% margin (1,20,000 × 25%)	30,000
Bid Price	1,50,000

The total cost of the proposed job under traditional costing (using labour hour rates for overhead allocation) is ₹ 2,33,750 while it only ₹ 1,50,000 under activity based costing.

The traditional approach overestimates the overhead and therefore, the company using this system would overbid the proposed job. ABC approach best reflects the actual cost of the proposed job. The overhead costs are really ₹ 13,000 only and not ₹ 80,000.

Illustration – 8

The following information is extracted from the cost account records of a manufacturing firm:

Activity	Overhead costs (₹)	Cost Drivers	Wheel	Pinion
<i>Machining Dept.</i>				
Setup	2,00,000	Number of setups	200	50
Machining	7,00,000	Machine hours	20,000	15,000
Total	9,00,000			
<i>Packaging Dept.</i>				

Inspection	1,80,000	Number of Inspection	120	60	NOTES
Assembling	3,00,000	Direct labour hours	40,000	60,000	
<hr/>					
Total	4,80,000				

1. What is the share of overheads for wheels under tradition method, if overhead costs are allocated on the basis of direct labour hours?
2. If the department allocation method is used, what is the overhead rate for the Machining department with machine hours as the allocation base?
3. When activity-based costing is used, what is Pinion's share of the packaging department overhead costs?
4. When activity-based costing is used, how much of the overhead cost is allocated to the wheel?

Solution:

1. Under traditional method, overheads cost on the basis of direct labour hour is allocated will be ₹ 5,52,000 as follows:
 - (a) Total Overheads costs ÷ Total direct labour hours
 $= ₹ 13,80,000 / 1,00,000 = ₹ 13.80$ per direct labour hour,
 - (b) Number of machine hours to be taken as the base is 40,000 hrs.
 Now overhead rate for the Machining department will be (a) × (b):
 $(13.80 \times 40,000 \text{ hours}) = ₹ 5,52,000$.
2. If the department allocation method is used, the overhead rate for the Machining department with machine hour as the base will be ₹ 25.71 per machine hour as below:
 Total cost incurred at Machining department ÷ total Machine hours operated in the department = ₹ 9,00,000 (7,00,000 + 2,00,000) ÷ 35,000 (20,000 hours + 15,000 hours).
3. When activity-based costing is used, Pinion's share of the packaging department overhead costs will ₹ 2,40,000 as below:
 Cost per hour of direct labour = 3,00,000 ÷ 1,00,000 hours = ₹ 3/ labour hrs.
 Inspection cost per inspection = ₹ 1,80,000 ÷ 180 inspections = ₹ 1000/ insp
 Total cost allocable to pinion = 3 × 60,000 hours + 1,000 × 60 inspection = ₹ 2,40,000.

NOTES

4. When activity-based costing is used, overhead cost is allocated to the wheel

Setup cost + Machining cost + Assembly Cost + Inspection cost.

Setup cost = 800×200 setups = ₹ 1,60,000

Machining cost = $20 \times 20,000$ machine hours = ₹ 4,00,000

Assembly cost = $3 \times 40,000$ labour hour = ₹ 1,20,000

Inspection cost = 1000×120 inspections = ₹ 1,20,000

Total overhead costs allocable to wheel = ₹ 8,00,000

Illustration – 8

M/s Shilpi Metal Components (P) Ltd. Kolkata is required to quote a price for a Job.3eC162, the production requirements of which are given below;

Job.3eC162

Requirements	Levels
Machine Setups	5 setups
Raw Materials	10,000 units
Inspections	12 inspections
Machining hours	600 Machine hours

The cost assistant is able to supply the following further details for your consumptions:

Overhead costs (₹)	Overhead	Cost drivers	Level of cost pool cost drivers
Machine setups	1,50,000	Number of setups	100 setups
Material handling	52,500	Units of raw materials	50,000 units
Quality Inspections	37,500	Number of inspections	1,000 inspections
Other overheads	90,000		
Total	3,30,000		

You are required to compute the total overhead that should be assigned to Job.3eC162 by using activity-based costing.

Solution:**NOTES****Computation of overhead cost allocable to Job3eC162**

Overhead rates applicable per unit:

(a) Setup costs = Total setup costs/Total number of setups

$$= (1,50,000/100) = ₹ 150 \text{ per setup}$$

(b) Materials handling rates = Total Material handling cost/Total units handled

$$= (52,500/50,000) = ₹ 1.05$$

(c) Quality Inspection costs rates = Quality control inspection costs/Number of Inspections.

$$= (37,500/1,000) = ₹ 37.50$$

(d) Other Overheads costs rates = Total other overheads ÷ Total Machine hours.

$$= (90,000/15,000 \text{ hours}) = ₹ 6$$

Job 3eC162 Requirements**Applicable Rates (₹)
Total costs**

<i>Items</i>	<i>Numbers</i>		
Set-ups	5	1,500	7,500.00
Materials handling	1.05	10,000	10,500.00
Quality control	37.50	12	450.00
Other overheads	600	6	3,600.00
Overhead costs allocable to Job3eC162			22,050

Illustration – 9

M/s Survey Industries Ltd, manufactures two chemicals Atone & Baritone. The cost assistant, for short, has named them as A and B. The cost records of the above chemicals in respect of its per unit cost and production details are as below:

NOTES

Production/Cost details	Atone	Bratoni
Short Name	A	B
Production volume (Units)	2,500	5,000
Direct Materials:	40	60
Direct labour:		
2 hours at ₹ 12	24	
3 hours at ₹ 12		36
Manufacturing Overheads:		
2 hours at ₹ 93		186
3 hours at ₹ 93		279

Manufacturing overheads is currently computed by spreading overhead of ₹ 18,60,000 over 20,000 direct labour hours. Management is considering use Activity based costing to improve costing procedures and following further details are available:

Cost Pool	Costs	Cost Driver volume	Cost Driver		
			A	B	Total
Setups	2,40,000	No. of setups	100	20	120
Gen. Factory	15,00,000	Direct labour hours	5,000	15,000	20,000
Machining	1,20,000	Machine hours	2,200	800	3,000
Total	₹ 18,60,000				

M/s Survey Industries determines the selling prices by adding 40% to total costs.

Given the above information, you are required to:

(a) Determine the per unit overhead cost of chemical B, & also

(b) Selling price for B.

Solution:**NOTES****(a) Computation of Unit cost for B:**

Setup cost 20 setups × ₹ 2000*	= ₹ 40,000
General Factory: 15,000 labour hours × ₹ 75**	= ₹ 11,25,000
Machining process cost 800 Machine hours × ₹ 40***	= ₹ 32,000
Total overhead cost for chemical B of 5,000 units	= ₹ 11,97,000
Overhead cost per unit ₹ 11,97,000 ÷ 5,000 Units	₹ 239.40

(b) Computation of Selling Price for A:

Direct Material	= ₹ 60.00
Direct labour	= ₹ 36.00
Manufacturing overheads	= ₹ 239.40
Cost per unit of B	= ₹ 335.40
Profit @ 40% of cost	= ₹ 134.16
Selling Price	= ₹ 469.56

* Setup costs: ₹ 2,40,000 ÷ 120 setups = ₹ **2,000 per setup.**

** General Factory: ₹ 15,00,000 ÷ 20,000 direct labour hours = ₹ **75 per direct labour hour (DLH)**

*** Machining process cost: ₹ 1,20,000 ÷ 3,000 machine hours = ₹ **40 per machine hour (MH).**

Illustration – 10

M/s Rahan Superlative Engineers (P) Ltd. manufactures two varieties of furniture – Regular and Deluxe model. It is anticipated that in the ensuing year the following activities are planned:

Details	Regular Model	Delux Model
Production	3,000 Units	4,000 Units
Direct Materials cost/unit	₹ 28	₹ 42

NOTES	Direct Labour hours/unit	3hours	4 hours
	Wage rate per hour	₹ 15	₹ 15

M/s Rahan Superlative Engineers identify three major activities in all requiring ₹ 16 lakhs as follows:

Activity	Costs
Order processing	₹ 2,50,000
Machining processing	₹ 12,00,000
Quality Control & Inspection	₹ 1,50,000

The break-up of these activities in terms of numbers and amounts are as below:

Models	No. of orders worked	Machine hours Inspection hours	Quality &
Regular	320	16,000	4,000
Deluxe	180	24,000	6,000
Total	500	40,000	10,000

M/s Rahan Superlative Engineers follow Activity Based Costing.

From the above information:

- (1) Compute the application rates used for order processing, machine processing and quality & inspection,
- (2) Compute the unit manufacturing costs of Regular and Deluxe if the above production target is attained.

Solution:

$$(1) \text{ Order Processing rate applicable} = \frac{\text{Total Ordering costs}}{\text{Total number of orders processed}}$$

$$= \frac{2,50,000}{500} = \mathbf{500 \text{ per order.}}$$

$$\text{Machining process rates} = \frac{\text{Total cost of machining}}{\text{Total machine hours worked}}$$

$$= \frac{12,00,000}{40,000} = \mathbf{30 \text{ per machine hour.}}$$

$$\text{Quality inspection rates} = \frac{\text{Total Cost of Inspections}}{\text{Total Number of inspection}}$$

$$= \frac{1,50,000}{10,000} = \mathbf{15 \text{ per inspection hour.}}$$

(2) Computation of unit manufacturing costs of Regular and Deluxe.

NOTES

<i>Details of OH Costs</i>	<i>Regular Model</i>	<i>Deluxe Model</i>
Order Processing		
(500 × 320)	1,60,000	
(500 × 180)	90,000	
Machining Processing		
(30 × 16,000)	4,80,000	
(30 × 24,000)	7,20,000	
Quality Inspection		
(15 × 4,000)	60,000	
(15 × 6,000)	90,000	
Total OH allocated	7,00,000	9,00,000
Production planned	3,000	4,000
OH per unit	233.33	225.00

Computation of Total Cost Per Unit

<i>Details of costs</i>	<i>Regular Model</i>	<i>Deluxe Model</i>
Direct Materials	28.00	42.00
Direct labour: (3 × 15)	45.00	
(4 × 15)		60.00
Other Manf OH (above)	233.33	225.00
Total cost per unit	306.33	327.00

Illustration – 11

M/s Saha Lamps & Filaments Company Ltd. is well known for quality lamps. The company produces two types of lamps classic and trendy. The following are the details gathered:

Lamp	Unit	Prime	Machine	Material	Set-ups
type	produced	cost	hours	movements	
Classic	4,00,000	8,00,000	81,250	3,00,000	100
Trendy	1,00,000	1,50,000	43,750	1,00,000	50
Total Amount	-	9,50,000	5,00,000	9,00,000	6,00,000

NOTES

The company currently follows Unit Costing System using machine hours but now desire to switch over to Activity Based costing. You are required to compute:

(i) The unit cost of lamp using Unit Based Approach,

(ii) The unit cost of lamp using Activity Based Approach.

Solution:**Unit costing: Workings**

Total Overheads – Machining	5,00,000
Material handling	9,00,000
Set-up costs	6,00,000
Total OH	20,00,000
Plant wide rate = $20,00,000 / (81,250 + 43,750)$	
$= 20,00,000 / 1,20,000 \text{ Hours} = ₹ 16$	

Computation of Unit Cost

Details	Type of Lamps	
	<i>Classic Lamp</i>	<i>Trendy lamp</i>
A. Prime costs	8,00,000	1,50,000
B. Overheads:		
(16 × 81,250)	13,00,00	
(16 × 43,750)		7,00,000
C. Total costs	21,00,000	8,50,000
D. Total Output (nos.)	4,00,000	1,00,000
E. Unit cost (C/D)	5.25	8.50

Computation of Unit cost under Activity Based Costing		
Details	Type of Lamps	
	Classic Lamp	Trendy lamp
A. Prime costs	8,00,000	1,50,000
B. Overheads*:		
Machining	3,25,000	1,75,000
Material Movements	6,75,000	2,25,000
Machine set ups	4,00,000	2,00,000
Total Costs	22,00,000	7,50,000
C. Output	4,00,000	1,00,000
D. Unit cost	5.50	7.50

NOTES

The Overheads are charged as below under Activity Based Costing:

Activity	Machining Hours	Material Movements	Machine set-ups
Total Costs Pool	5,00,000	9,00,000	6,00,000
Total	1,25,000 Hrs	4,00,000 Moves	150 Times
Cost per activity	4.00 per machine hrs.	2.25 per move	4,000 per setup

Thus Overheads assigned are:

For classic machining $(4 \times 81,250 \text{ Hrs}) = ₹ 3,25,000$

Material movements $(2.25 \times 3,00,000) = ₹ 6,75,000$

Machine setup $(4,000 \times 100) = 4,00,000$ and so on for Trendy.

Illustration – 12

M/s Sanvi Company Ltd. has six standard products made of stainless steel and brass. The company's most popular product is Product XX. The following are the data pertaining to Product XX for next year budget:

Activity	Cost driver	Cost driver	Cost pool
	volume per year		
Purchasing	Purchase order	1,500	75,000
Setting	Batches produced	2,800	1,12,000
Material handling	Material movements	8,000	96,000
Inspection	Batches produced	2,800	70,000
Machining cost	Machine hours	50,000	1,50,000

NOTES

Further you find the following information too:

Purchase Orders 25
 Output 15,000
 Production batch size 100 units
 Material movement per batch 6
 Machine hours per unit 0.1

Using the data and further information given above, you are required to:

- (a) Compute the budgeted overhead costs using Activity Based Costing principles,
- (b) Compute the budgeted overhead costs using Absorption Costing (using machine hours),
- (c) How can the company reduce the ABC for Product XX.

Solution:**(a) Computation of the activity based overheads**

1. Computation of cost per unit of cost driver.

This is equal to cost pool/cost driver volume.

<i>Activity</i>	<i>Cost pool (₹) volume P.A</i>	<i>Cost driver</i>	<i>Cost per unit driver</i>
Purchasing	75,000	1,500	₹ 50 per purchase order
Setting	1,12,000	2,800	₹ 40 per setting
Material handling	96,000	8,000	₹ 12 per movement
Inspection	70,000	2,800	₹ 25 per batch
Machining cost	1,50,000	50,000	₹ 3 per machine hour

2. Volume of cost drivers used by product XX

Purchase orders (given) = 25
 Batches 15,000/100 = 150
 Material movements = 150 batches × 6 = 900
 Machine hours = 15,000 units × 0.1 = 1,500

3. Activity Based Overheads for Product XX:

Purchasing 25 orders × ₹ 50 = 1,250
 Setting 150 settings × ₹ 40 = 6,000

Material handling $900 \times ₹ 12 = 10,800$

Inspection 150 batches $\times ₹ 25 = 3,750$

Machining 1,500 hours $\times ₹ 3 = 4,500$

Total $= ₹ 26,300$

NOTES

(b) Computation of budgeted overheads costs for Product XX using absorption costing

Total Budgeted overheads $= (75,000 + 96,000 + 1,12,000 + 70,000 + 1,50,000)$
 $= ₹ 5,03,000$ (say, a)

Total budgeted machine hours = 50,000 hours (say, b)

Budgeted absorption cost per machine hour = a/b

$= 5,03,000 / 50,000 \text{ hours} = ₹ 10.06 \text{ per machine hour}$

Now Budgeted machine hours for Product XX is 1,500

Budgeted absorbed overhead $= 1,500 \text{ hours} \times 10.06 = ₹ 15,090$

(c) Ways in which the company can reduce the ABC for product XX:

- (i) Reduce the number of batches by increasing batch size,
- (ii) Increasing batch sizes will reduce other overhead costs such as setting cost, Materials handling, inspection costs etc.
- (iii) Reduce purchase orders.

11.5 SERVICE COSTING

Service costing is the technique of finding the total operating cost and cost per services of services organization i.e. transportation, hospital, hotel, school and college, cinema hall and power house, library, drinking water etc.

Service costing is applicable for those understanding or services cost center under any enterprise, which provides generated services. These types of services may be needed for internal as well external purposes. Services generated for internal purpose means ancillary services provides by sections and department to the production department under a manufacturing concern as canteen, builder house, electronic generation department services etc. the services generated for external purposed are directly related to the public utility services provides to the public. As transport services, inutility services, distribution services, etc.

NOTES

11.6 MEANING AND DEFINITIONS

According to *Institute of Cost and Management Accountants (ICMA), London*, "operating costing applied where standardized services are provided by a undertaking or by the service cost center within undertaking."

According to *Wheldon*, "operating services is a unit costing as applied to the costing of services."

Thus, service costs are the cost of providing and operating services in a particular sector. In short, it is considered generally by inducting services instead of producing goods. It is the method of costing which provides information how to calculate operating cost.

Service costing is a type of operation costing which is used in organizations which provide services instead of producing goods.

In this method of cost accounting, all the costs incurred in the production of a service are added together. They are then divided by the total number of service units rendered. The total cost is then divided by the total units to arrive at per unit cost.

Example: The total cost incurred in providing one bus trip is divided by the number of seats for passengers to arrive at the cost of each ticket.

This method of costing is used in railways, buses and other modes of transport, hospitals, hotels, public utility services (electricity, water and telephone) and any other organization where services are provided.

11.7 SCOPE OF SERVICE COSTING

The service costing is directly concerned with the classification and accumulation of the service cost towards services rendered by undertakings. The services provided by an enterprise can be categorized as follows from the costing point of view.

- (a) **Transport services:** airways, railways, vehicle, shipping, cable car etc.
- (b) **Welfare services:** hospital, nursing home, libraries, canteen, hotel.
- (c) **Supply services:** gas supply, electricity supply, water supply, telephone, electricity authority etc.
- (d) **Municipal services:** street lighting, road maintenance etc.

These services may either be rendered by a company to the public or some of these could be local level to a factory, for its own internal use, e.g. canteen, delivery van, township maintenance etc. a canteen in a factory can either be run by a factory itself or it can be let out to a contractor at an agreed rate.

NOTES

Service costing is that part of operation costing which is used in all organisation who provide services instead of producing of goods. For calculating the price of each service, it is very necessary to collect all the expenses relating to that services. We make a cost sheet in which we show all the cost relating to specific service. These costs are calculated on the time basis. Following are the main organisations who provide services:

1. Bus, Trucks and Rail - Transport services
2. Hosting and Domain - IT Services
3. Electricity Companies - Electricity services
5. Gas and Petrol Companies - Gas and Petrol services

11.8 OPERATING COSTING

CIMA has defined ‘Operating Costing’ “As that form of operation costing which applies when standardized services are provided either by an undertaking or by a service cost center within an undertaking”.

Cost Accounting Standard - I by ICWA defines ‘Operating Cost’ “As the cost incurred in conducting a business activity. Operating costs refer to the cost of undertaking, which do not manufacture any product but which provide services”.

The cost of operating a service is known as the operating cost and the method of ascertaining the operating cost is known as “*Process Costing and Operating Costing*”.

Selection of cost units, where Operating Costing is applied, requires careful consideration, because cost unit will be different for different services. The following are some of the cost units selected for different types of services:

<i>Services</i>	<i>Cost Units</i>
1. Passenger transport service (Bus, train, passenger train, air transport etc.)	1. Passenger–kilometer
2. Goods transport service (lorry, goods train, air transport of goods etc.)	2. Tonne–kilometre
3. Electric supply service	3. Kilowatt–hour
4. Canteen service	4. Man–meal
5. Hospitals	5. Patient bed per day
6. Private transport (Private car, private aeroplane etc.)	6. Running hour, trip, kilometer

NOTES

11.9 CANTEEN COSTING

Canteen costing is a method of ascertaining the cost providing meals, dishes of different type.

- (i) To ascertain the cost of producing meals or dishes.
- (ii) To fix the rate of meals to be charge.

Canteen costing procedure involves the following steps:

- (i) Select the cost unit which is usually cost per meal.
- (ii) Calculate total fixed/standing charges allocated and apportioned to canteen.
- (iii) Calculate total and per unit variable charges.
- (iv) Calculate cost per meal.

Canteen Costing

The expenses of the canteen are shown under the following heading:

Provision: *Example* - Milk, tea, coffee, coal drinking, bread, biscuits, cake, vegetable cooked and eggs etc.

Labour: *Example* - Salaries of cook, wages of cook, assistance cook, supervisor etc.

Fuel and power: *Example* - Gas, steam, coal, power, fire wood.

Miscellaneous expenses: *Example* - Rent, insurance, depreciation etc.

With regard to food provision it should be kept in view that:

- (i) Article should be kept in the canteen according to the daily sales requirements.
- (ii) The use of refrigerators and the air conditions rooms help to preserve the food ingredients and quality.
- (iii) The demand of the articles in the canteen varies with change in season. The seasonal article should be provided according to the demand.
- (iv) The neatness and cleanliness in the canteen is very essential and it helps in the sale to grow.

A monthly operating cost statement is usually prepared to ascertain total cost and cost per meal. As most factory canteen are subsidised to some extent, the amount of subsidy is deducted from the total cost.

11.10 HOTEL COSTING

NOTES

Hotel providing daily accommodation facility to general public, have mushroomed all over the country due to the movement provide by modern civilization to travel both on personal and commercial work. Hotels have many unavoidable costs such as labor, utilities, property operation costs, customer acquisition costs etc. The first step in reducing operating costs and increasing profit margins is tracking and managing the costs. Large hotels and chains already meticulously track their costs but it is equally as important for independent hotels and hostels to do the same.

Fixed and Variable Costs in Hotels

The terms variable costs and fixed costs in hotel operation is used to distinguish between those costs that have direct relationship to Hotel occupancy and those that has no relation to occupancy and business.

Fixed Costs

Fixed costs are normally not effected by changes in occupancy or sales volume. They are said to have little direct relationship to the business volume because they do not change significantly when the number of sales increases or decreases.

Examples of Fixed costs are:

- (i) Land, Building Taxes to government.
- (ii) Wages to employees.
- (iii) Hotel employees health premium.
- (iv) Out sourced services contracted for fixed amount in a month example: security services.
- (v) Yearly maintenance contract fees (AMC) for all equipments, machineries and Hotel Management software's.
- (vi) Fixed internet, telephone plans.
- (vii) Advertising cost.
- (viii) Yearly external auditing cost.
- (ix) Payroll.
- (x) Provision.
- (xi) In house moves / satellite TV.

NOTES

Variable Costs

Variable costs are clearly related to hotel occupancy and business volume. As business volume or occupancy increases, variable costs will increase; as hotel occupancy decreases, variable costs should decrease as well.

Examples of variable costs are:

- (i) Food, beverages, house keeping cleaning supplies.
- (ii) Flower arrangements.
- (iii) Guest room amenities.
- (iv) Guest room, restaurants and banquets linen.
- (v) Banquet HVAC costs.
- (vi) Stationeries used in Front desk and restaurants.
- (vii) Chemicals for laundry and water treatment plants.
- (viii) T/A commission.
- (ix) Flower and decorations.
- (x) Guest supplies amenities.
- (xi) Guest relations.
- (xii) Laundry operations.
- (xiii) Laundry Uniform.
- (xiv) Printing supplies.
- (xv) Entertainment.
- (xvi) Telephone and Fax.
- (xvii) Transportation.
- (xviii) Other operating supplies.

11.11 HOSPITAL COSTING

A concern of most countries is health sector resources: the source of finance for health services, the ability to maintain past funding levels, resource allocation patterns and the efficiency of health services delivery. The hospitals of these countries are an important element of the concern about health resources because they are the largest and most costly operational unit of these health systems and account for a large portion of the health sector's financial, human, and capital resources. In aggregate terms, Hospitals utilize nearly half of the total national expenditure for the health sector. Hospitals commonly account for 50 to 80 percent of government recurrent health sector expenditure. Hospitals use a large proportion of the most highly trained health personnel. A hospital is engaged in providing various types of medical services to the patients.

Why are Hospital Costs Important?**NOTES**

Hospital cost information is divided by relating the inputs of resources in monetary terms to the outputs of services provided by the hospital. Cost information is part of the basic information needed by managers and policy makers for making decisions about how to improve the performance of a hospital, were to allocate the resources within or among hospital or to compare the performance of different hospitals to one another. The Basic reasons for wanting cost information are to improve efficiency, increase effectiveness, enhance sustainability and improve quality.

Objectives of Hospital Costing

1. Utilisation of resources.
2. Department-wise profitability analysis.
3. Fixation of doctors' honorarium.
4. Fixing schedule of charges.
5. Monitoring of factors affecting pricing.

Determination of Hospital Costing

The process of determining the costs of a hospital involves six steps:

Step: 1 Defining the major and relevant activity areas of the hospital.

Step: 2 Gathering information on the services provided or the output of the hospital.

Step: 3 Determining the labor and other recurrent costs.

Step: 4 Ascertaining the capital costs of the hospital.

Step: 5 Allocating indirect costs.

Step: 6 Reviewing and using the hospital cost summary.

Services Provided by Hospital Costing

Hospital costing is applied to decide the cost of these services. A hospital may have following departments from providing various types of services:

1. **Outdoor Patient Department. (O.P.D)**
2. **Indoor Patient Department (Medical Wards)**
3. **Medical Service Department:**
 - X-Ray Department,
 - Scanning Centre,
 - Pathology Laboratory,
 - Sonography Department.

NOTES

4. General Services Department:

Bolier House,
Power House,
Catering department,
Laundry Room,
Administrative Department,

5. Miscellaneous Services Department:

Transport Department,
Dispensary Department,
General Porting Department.

11.12 SUMMARY

An accounting method that identifies the activities that a firm performs and then assigns indirect costs to products is called activity based costing. An activity based costing system recognizes the relationship between costs, activities and products. This relationship assigns indirect costs to products less arbitrarily than traditional methods. Cost accounting approach concerned with matching costs with activities (called cost drivers) that cause those costs. It is a more sophisticated kind of absorption-costing and replaces labor based costing system.

Activity Based Costing is the process of tracing costs first from resources to activities and then from activities to specific products. Activity Based Costing is a costing system which tries to charge the indirect costs to the products and services fairly accurately. The objective is fulfilled if it possible to ascertain accurately the information pertaining to the various activities a product or providing services undergo, then collect costs incurred upon each of these activities and form a base upon which such costs or are allocated.

A cost driver is a characteristic of an event or activity that results in the incurrence of costs by that event or activity. In activity-based costing systems, the most significant cost drivers are identified. Then a database is created that shows how these cost drivers are distributed across products. This database is used to assign costs to the various products depending on the extent to which they use each cost driver.

A cost incurred by a business when manufacturing a good or producing a service is called production cost. It combines raw material and labor. To figure out the cost of production per unit, the cost of production is divided by the number of units produced. A company that knows how much it will cost to produce an item, or produce a service, will have a clearer picture of how to better price the item or service and what will be the total cost to the company.

NOTES

A cost caused by the production or acquisition of a single unit of product or the delivery of a single unit of service is called unit level cost. For any given product, these costs change in a more-or-less linear fashion with the number of units produced. For example, fabric and thread are unit-level costs for an apparel manufacturer: if the company wants to double production, it will need twice as much fabric and thread.

The quantity of products produced in one process setting is called batch level cost. These costs change in a more-or-less linear fashion with the number of batches run. Machine setup costs are often batch-level costs. The time required to prepare a machine to run one batch of product is usually independent of the number of units in the batch: the same time is required to prepare the machine to run a batch of 100 units as a batch of 50 units. Hence, batch-level costs do not necessarily vary in a linear fashion with the number of units produced. Collection of costs based on activities forms the base here which needs to be recognized for accurate costing.

Service costing is the technique of finding the total operating cost and cost per services of services organization i.e. transportation, hospital, hotel, school and college, cinema hall and power house, library, drinking water etc.

According to Institute of Cost and Management Accountants (ICMA), London, "operating costing applied where standardized services are provides by a undertaking or by the service cost center within undertaking."

CIMA has defined 'Operating Costing' "As that form of operation costing which applies when standardized services are provided either y an undertaking or by a service cost center within an undertaking".

Cost Accounting Standard - I by ICWA defines 'Operating Cost' "As the cost incurred in conducting a business activity. Operating costs refer to the cost of undertaking, which do not manufacture any product but which provide services".

Canteen costing is a method of ascertaining the cost providing meals, dishes of different type: (i) To ascertain the cost of producing meals or dishes. (ii) To fixed the rate of meals to be charge.

Hotel providing daily accommodation facility to general public, have mushroomed all over the country due to the movement provide by modern civilization to travel both on personal and commercial work. Hotels have many unavoidable costs such as labor, utilities, property operation costs, customer acquisition costs etc.

NOTES

11.13 GLOSSARY

- (a) **Activity Based Costing:** An accounting method that identifies the activities that a firm performs and then assigns indirect costs to products is called activity based costing. An activity based costing system recognizes the relationship between costs, activities and products. This relationship assigns indirect costs to products less arbitrarily than traditional methods.
- (b) **Cost driver:** A cost driver is a characteristic of an event or activity that results in the incurrence of costs by that event or activity. In activity-based costing systems, the most significant cost drivers are identified. Then a database is created that shows how these cost drivers are distributed across products. This database is used to assign costs to the various products depending on the extent to which they use each cost driver.
- (c) **Production cost:** A cost incurred by a business when manufacturing a good or producing a service is called production cost. It combines raw material and labor. To figure out the cost of production per unit, the cost of production is divided by the number of units produced. A company that knows how much it will cost to produce an item, or produce a service, will have a clearer picture of how to better price the item or service and what will be the total cost to the company.
- (d) **Unit level cost:** A cost caused by the production or acquisition of a single unit of product or the delivery of a single unit of service is called unit level cost. For any given product, these costs change in a more-or-less linear fashion with the number of units produced. For example, fabric and thread are unit-level costs for an apparel manufacturer: if the company wants to double production, it will need twice as much fabric and thread.
- (e) **Batch level cost:** The quantity of products produced in one process setting is called batch level cost. These costs change in a more-or-less linear fashion with the number of batches run. Machine setup costs are often batch-level costs.
- (f) **Service costing:** Service costing is the technique of finding the total operating cost and cost per services of services organization i.e. transportation, hospital, hotel, school and college, cinema hall and power house, library, drinking water etc.
- (g) **Operating costing:** Operating costing applied where standardized services are provides by a undertaking or by the service cost center within undertaking.

11.14 CHECK YOUR PROGRESS

NOTES**(A) Short Answer Questions**

1. What is activity based costing?
2. What is traditional costing?
3. What are cost drivers?
4. What is activity cost pool?
5. What is unit level cost?
6. What do you mean by batch level cost?
7. What do you mean by product level cost?
8. Give the meaning of facility cost.
9. What is service costing?
10. What do you mean by operating costing?

(B) Extended Answer Questions

1. State the objective of activity based costing.
2. Explain advantages and disadvantages of traditional costing.
3. Distinguish between traditional costing and activity based costing.
4. What are the characteristics of activity based costing?
5. Discuss cost analysis under ABC.
6. Discuss the working of activity based costing.
7. Explain benefits and weakness of ABC.
8. Explain the Scope of Services Costing.

(C) True or False

1. Activity Based Costing is the process of tracing costs first from resources to activities and then from activities to specific products.
2. A cost driver is a characteristic of an event or activity that results in the incurrence of costs by that event or activity.
3. A cost incurred by a business when manufacturing a good or producing a service is called production cost.
4. A cost caused by the production or acquisition of a single unit of product or the delivery of a single unit of service is called unit level cost.
5. The quantity of products produced in one process setting is called batch level cost.

NOTES

(D) Multiple Choice Questions

1. What is the process of tracing costs first from resources to activities and then from activities to specific products?
 - (a) Activity Based Costing
 - (b) Process Costing
 - (c) Material Cost
 - (d) All the above
2. A cost driver is a characteristic of an event or activity that results in the incurrence of costs by that.....
 - (a) Event
 - (b) Activity
 - (c) Both a and b
 - (d) None of the above
3. A cost caused by the production or acquisition of a single unit of product or the delivery of a single unit of service is called.....
 - (a) Unit Level cost
 - (b) Batch Level cost
 - (c) Both a and b
 - (d) None of the above

(E) Fill in the Blanks

1.is the process of tracing costs first from resources to activities and then from activities to specific products.
2. A cost driver is a characteristic of an event or activity that results in the incurrence of costs by that.....
3. A cost incurred by a business when manufacturing a good or producing a service is called.....
4. A cost caused by the production or acquisition of a single unit of product or the delivery of a single unit of service is called.....

11.15 KEY TO CHECK YOUR ANSWER

(C) 1. True, 2. True, 3. True, 4. True, 5. True

(D) 1. (a), 2. (c), 3. (a)

(E) 1. Activity Based Costing, 2. Event or activity, 3. Production cost, 4. Unit level cost

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11.18 TERMINAL QUESTIONS

1. Discuss various steps for the implementation of ABC.

2. How to prepare service cost sheet in different sector like, hospital, hotel, canteen etc.

MS 102

Accounting for Managers



Volume II

Block IV: Management Accounting

Block V: Analysis of Financial Statements

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SYLLABUS

Course Name: Accounting for Managers

Course Code: MS 102

Course Objective:

To enable student to acquire the skills necessary to use, interpret and analyse accounting data and to make them acquainted with decision making capability for effective financial control in an organisation.

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Concept, Importance and Scope of Accounting

Unit II Accounting Principles

Accounting Principles, Concepts and Conventions

Unit III Forms and Types of Accounting

Forms and Types of Accounting, Users of Accounting Information

Unit IV Double Entry System

Accounting Equation, Rules of Recording Business Transactions

BLOCK II: Accounting Process

Unit V Journalising and Posting

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Unit VI Trial Balance

Preparation of Trial Balance

Unit VII Final Accounts

Preparation of Profit and Loss Account and Balance Sheet with Adjustment Entries

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Unit IX Standard Costing and Variance Analysis

Unit X Process Costing and Single and Output Costing

Unit XI Activity-based Costing and Service Costing

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Meaning, Nature and Significance of Management Accounting

Unit XIII CVP Analysis

Cost-Volume-Profit Analysis

Unit XIV Budgeting

Budget – Budgetary Control and Framework for Budgeting, Performance Budgeting and Zero-base Budgeting

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Nature, Methods and Tools of Financial Analysis

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Unit XVIII Ratio Analysis

Financial Analysis and Control: Ratio Analysis

Unit XIX Statement of Changes in Financial Position-I

Statement of Changes in Financial Position: Funds Flow Statement

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Cash Flow Statement

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BLOCK IV: Management Accounting

UNIT 12 INTRODUCTION TO MANAGEMENT ACCOUNTING

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Objectives

After reading this unit you will be able to understand:

- Meaning of Management Accounting
- Nature of Management Accounting
- Significance of Management Accounting

NOTES

12.1 INTRODUCTION

Management accounting is a profession that involves partnering in management decision making, devising planning and performance management systems and providing expertise in financial reporting and control to assist management in the formulation and implementation of an organization's strategy.

12.2 CONCEPT OF MANAGEMENT ACCOUNTING

Accounting information is the integral part of all managerial decisions. It enables the management to make effective decisions and achieve its goal in an efficient manner. Accounting information is not only essential to government, investors, creditors and bankers but also important to management. Until recently accounting was regarded merely as an art of recording, classifying and summarizing transactions and events which are of a financial character. Later on, accounting was regarded as "the process of identifying, measuring and communicating economic information to the needy people for accurate judgments and decisions by users of the information." Accounting is now regarded as a core function of which is to provide quantitative information for managerial decisions and other economic activities. The information is basically financial in nature and is intended to be useful in making economic decisions. Thus, accounting can be rightly termed as a core managerial activity providing quantitative information for qualitative decisions. It includes several branches of accounting such as financial accounting, cost accounting, management accounting and the emerging concepts i.e., human resource accounting and social accounting.

Meaning of Management Accounting

Management Accounting is the presentation of accounting information to management in order to formulate the policies and assist in its day-to-day activities. In other words, it helps the management to perform all its functions including planning, organizing, staffing, directing and control. It is a tool for making effective decision. It deals with generating statements and reports through various data like financial accounting cost accounting etc, with use of proper tool of analysis and interpretation and it is made use for managerial decisions.

Definitions Management Accounting

Management accounting has different viewpoint and focus as per the situation and requirement of the organization. Some of the definitions of Management Accounting may be noted below:

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In the words of **J. Batty**, “Management Accountancy is the term used to describe the accounting methods, systems and techniques which, coupled with special knowledge and ability, assist management in its task of maximizing profit or minimizing losses.”

The Institute of Chartered Accountants of England and Wales defines Management Accounting as “any form of accounting which enables a business to be conducted more efficiently can be regarded as Management Accounting.”

The Institute of Cost and Management Accountants, London, has defined Management Accounting as, “the application of professional knowledge and skill in the preparation of accounting information in such a way as to assist management in the formulation of policies and in the planning and control of the operation of the undertakings.”

American Accounting Association, “it includes the methods and concepts necessary for effective planning for choosing among alternative business actions and for control through the evaluation and interpretation of performances.”

According to **R. N. Anthony**, “Management Accounting is concerned with accounting information that is useful to management.”

In the words of **Haynes and Massie**, “the application of appropriate techniques and concepts in processing the historical and projected economic data of an entity to assist management in establishing a plan for reasonable economic objectives and in making of rational decisions with a view towards achieving these objectives.”

From the above definitions, it becomes very clear that Management Accounting presents to the management the accounting information in the form of processed data i.e. statements and reports, which it collects from Financial Accounting and Cost Accounting facilitates for managerial decisions.

Evolution of Management Accounting

A perusal of the Accounting History from the very beginning to some recent years reveals that accounting has primarily been developed to meet those needs which arise from the fiduciary relationships between parties like firm, Owners, Creditors, Management etc.

The essence of accounting for management was identified in the complexity of the modern business. The term ‘Management Accounting’ is of a recent origin. This term was first used in 1950 by British team of accountants visiting U.S.A. under the auspices of Anglo-American Council on Productivity.

In the early days of industrialization where, majority of the enterprise were in sole firm or partnership firm, necessity of having a detailed and re-organized form of financial data was not essential because owner he himself was aware of the

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transactions and the financial position on any given date. The evolution of joint stock company form of organization has resulted in large-scale production and separation of ownership and management.

Modern large scale joint stock companies where, owner and management are different, it has become very difficult to keep the track of all transactions and using the traditional form of financial statements is no longer useful for managerial decisions. This is the point where the need for separate accounting for management raised and the concept of management accounting was developed. Management accounting is basically intended to provide quantitative data for qualitative managerial decisions. It enables management to develop policies and programme and achieve the organizational goals in an efficient manner, it requires the evolution of information system for helping management in planning and assessing the results. The accounting information is required as a guide for future. The management is to be fed with precise and relevant information so as to enable it in performing managerial functions efficiently and effectively.

12.3 OBJECTIVES OF MANAGEMENT ACCOUNTING

The objectives of management accounting are as follows:

- (i) To present financial information to the management in a way that is easily understandable.
- (ii) To supply necessary data to the management for formulating future plans. The data includes statements pertaining to past results and estimates for the future.
- (iii) To help in keeping the actual performance as per the plans made by the management.
- (iv) To establish a strong, working relationship amongst different individuals pertaining to different departments, of the same organisation.
- (v) To maximise the wealth of the organisation.
- (vi) To motivate the employees, by fixing targets and providing incentives.
- (vii) To keep the tax burden of the organisation minimum.
- (viii) To keep the management fully informed about the latest position of the organisation.

12.4 NATURE OR CHARACTERISTICS OF MANAGEMENT ACCOUNTING

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(i) Mainly concerned with future: Planning is the process of looking ahead by taking the reference of the past. The process of management accounting is driven towards the future course of action with proper planning based on the analytical financial details of the past. It considers the budgets to forecast the future revenue and expenditures and inflow and out follow of funds.

(ii) Recent origin: Management accounting has been well recognized in the modern business houses due to increasing customer base and market complexity. Modern managerial decisions need much quantitative organized information rather traditional form of financial statements for making effective decisions.

(iii) Management need oriented: Management Accounting is highly personalized service and Subjective in nature. It is basically intended for the use of internal managerial decisions. It provides necessary information as per the need of the management in the required format and ensures that the information are sufficient to make effective decisions.

(iv) Information as per Management need: There is no hard and fast rule in the preparation of management reports and statement, it always as per the situational requirement of the management and based on the availability of the data for analysis and interpretation.

(v) Provides data and not the decisions: Management accounting discipline is not an replacement of management. It provides just information to the managerial decisions. It facilitates decisions since majority of the decisions are made considering the facts and figures provided by the management accountants. But at the same time these data itself cannot form the decisions of the management.

(vi) Objective oriented: Management accounting present data in such a way that it enables the management to formulate policies and programme so as to achieve the managerial or organizational goals in most efficient and effective manner.

(vii) Financial and cost accounting information: Management accounting is all about the analysis and interpretation of financial and cost accounting data, to generate such reports and statements which can prove useful to management in decision making.

(viii) Increases efficiency: Management accounting is concerned with providing, the needed information to the Management in the proper manner and assisting in the policy formulation and managerial control. This enables the management to increase efficiency of its operation and ensures the optimum profits with minimum operational risk.

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Management accounting facilitates managers in taking important decisions through providing necessary details in the required manner. For instance a manager who wants to about the solvency position of the company can easily derive the details from the ratio's statement. Similarly when he wants to know the inflow and outflow of funds/cash in given financial date it is possible only thorough the fund flow and cash flow statements.

Apart from the above unique features Management Accounting is also characterized by the following:

- (a) It does not follow any fixed norms or formats.
- (b) Basically concerned with forecasting.
- (c) Mainly used for Internal purpose.
- (d) Useful in Managerial decision making.
- (e) It is not compulsory as the any other disciplines like financial accounting and cost accounting. It is purely optional to the management.
- (f) It is an interdisciplinary subject since it mainly depends on the financial and cost accounting.

12.5 SCOPE OF MANAGEMENT ACCOUNTING

Management accounting is an interdisciplinary subject. It depends on various other disciplines mainly such as financial accounting and cost accounting. It also elicit data from other disciplines such as budgetary control, tax planning, statistics, auditing etc.

Management accounting facilitates in management function. As a result, all sorts of monetary transactions which are related to management function come within the scope of this subject. Therefore, this subject is very wide, covers all the disciplines, directly or indirectly.

(i) Financial Accounting: Accounting is the process of systematic recording of financial transactions so as to determine the true and fair financial position of a concern. Management accounting derives the necessary data from the financial accounting. For instance when fund flow statement or Ratio statement are to be prepared, financial statements are very essential without which the preparation and decision about fund flow and ratios are not possible.

(ii) Cost Accounting: Management accounting uses certain technique and tools of cost accounting as well. Cost accounting provides the various techniques of costing, viz, Marginal Costing, Standard Costing, Differential Cost Analysis etc. which plays significant role in the operation and control of the enterprise. It assists

management in measuring the operational efficiency of the management and achieving managerial goals.

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(iii) Budgetary Control: Budgetary control is a system of controlling costs through establishment of standards. It controls the activities of the business and measures the variance by comparing the actual with the budgeted figures and enquires into the reasons of such variance at each and every step, so that the adverse variance may not be repeated in future.

(iv) Tax Planning: It is concerned with the computation of taxable income according to Income-Tax Act, and filing of returns and the payment of tax. It is one of the core functions of the modern management accountant, facilitating management in proper tax planning and accounting.

(v) Analysis and Interpretation of Accounts: Financial statement can be better understood through comparative study. The primary duty of the management accountant is to explain the data relating to the management and assist management in taking decisions.

(vi) Reporting: Management accounting uses the technique of statistics wherever necessary for effective analysis and interpretation. Sometimes reports on various aspects of the business are to be submitted by the management accountants. At the time of preparation of the Statement or Reports, they use different statistical techniques, viz, Line Chart, Pie Chart, Index Numbers etc. in order to be more attractive and intelligible.

(vii) Internal audit and control: Management accountants depend on the internal audit and use that for generating reports on various financial issues for decision making.

(viii) Budgetary Control: Budgetary control is a system of controlling costs through establishment of standards. It controls the activities of the business and measures the variance by comparing the actual with the budgeted figures and enquires into the reasons of such variance at each and every step, so that the adverse variance may not be repeated in future.

(ix) Tax Accounting: It is concerned with the computation of taxable income as per Income Tax Act, and filing of returns and the payment of tax. It is one of the core functions of the modern management accountant, facilitating management in proper tax planning and accounting.

(x) Analysis and Interpretation of Accounts: Financial statement can be better understood through comparative study. The primary duty of the management accountant is to explain the data relating to the management and assist management in taking decisions.

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(xi) Management Information System: It is very difficult to imagine organisations without computers in the globalized corporate environment. Information's are stored and supplied to the management with the help of computers for managerial decisions. The advancement in the technology has made management accountants job much easier and effective and has made more dependent on the technology from time to time.

12.6 FUNCTIONS OF MANAGEMENT ACCOUNTING

The basic functions of management accounting are following ways:

1. **Planning and Forecasting:** It is done by management accountants for short term and long term periods by using various techniques such as budgeting, standard costing marginal costing etc.
2. **Modification of Data:** Management accounting helps in modification of data presented in financial statements in a way which is more suitable. *For example*, product-wise territory-wise, season-wise dealer-wise etc.
3. **Financial Analysis and Interpretation:** Management accountant analyses and interprets financial data in a simple way and presents it in a non-technical manners. He gives facts and figures about various policies and evaluates them in monetary terms, supplementing it with his their opinion on various alternatives.
4. **Managerial Control:** It covers fixing of standards, recording of actuals and analysis of variances for all departments, individuals and all elements of cost. This helps in performance evaluation and managerial control.
5. **Communication:** Management accounting establishes communication with the organisation and with the outside world. Reports are prepared for the benefit of different levels of management and are communicated to interested outside parties such as shareholders, creditors etc.
6. **Use of Non-Monetary Information:** While evaluating alternatives, management accountant not only uses monetary data, but also considers non-monetary information.
7. **Co-ordination:** Management accountant acts as a co-ordinator among different financial departments of different departments of the company. It helps to increase the efficiency of various sections thereby increasing profitability of the concern.
8. **Strategic Decision Making:** Management accounting supplies analytical information to the management regarding various alternatives in making strategic decisions.

9. **Information:** The information requirement of various levels of management are met by Management Accounting. The supply of adequate information at the proper time leads to increase in efficiency of the management.

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12.7 SIGNIFICANCE OF MANAGEMENT ACCOUNTING

1. Determination of Aim: Management accounting on the basis of the information available determines its goal and tries to find out the route through which it can reach the goal.

2. Helps in the Preparation of Plan: Present age is the age of planning. That producer is considered as most successful producer who produces articles according to the plan and needs of the consumers. Before taking any plan the manager must study and analyze the present and future of the business.

3. Better Services to Customers: The cost control device is management accounting enables the reduction in prices of the Product. All employees in the concern are made cost curious. The quality of the Product become well because quality standards are pre-determined. The customers are supplied with goods quality of products at reasonable price.

4. Easy to take judgment: Before taking any plan or to determine policy. There are several plans or policies before the management on the basis of the study she/he decides which plan and policy needs to be adopted so that it may be more useful and helpful.

5. Measurements of performance: The techniques of budgetary control standard costing enables the measurement of performance. In standard costing, standards are determined firstly and then actual cost is compared with standard cost. It enables the management to find out deviations between standard cost and actual cost. The performance will be good if actual cost does not exceed the standard cost. Budgetary control system too helps in measuring efficiency of all employees.

6. Its Increase Efficiency of the business: Management accounting increases efficiency of the business concern. The targets of different departments of the enterprise are determined in advance and the achievement of these goals is taken as a tool for measuring their efficiency.

7. Its provide effective management control: The tools and techniques of the management accounting are helpful to the management in planning, controlling and coordinating activities of the business, the getting of standard and assessing actual performance regularly enables the management to have 'management by exception'. Everybody assesses his/her own work and immediate actions are taken as a tool for measuring their efficiency.

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8. Maximum profits of can be obtained: In this process every possible effort are made to control unnecessary expenses. The incapability or inefficiency is removed. New systems or techniques are found out to achieve the goal, so that there may be maximum profits out if the capital invested in the business.

9. Safety and security from trade cycle: The information received from the management accounting gives more or throws enough light over the past trade cycle. The management tries to ascertain the causes of trade cycle and its affect. Thus, management accounting tries to safeguard the organization from the affect of trade cycle.

12.8 ROLE OF MANAGEMENT ACCOUNTANT

The functions of management accountant as laid down by the Controllers Institute of America can be divided into two groups: 1. Analytical and advisory functions
2. Administrative and procedural functions.

1. Analytical and advisory functions

- (i) **Planning and control of operations:** Management accountant establishes, co-ordinates and maintains an integrated plan for controlling operations. She/He undertakes profit planning, capital investment planning, budgeting, forecasting, specification of cost standards etc.
- (ii) **Measurement of performance:** She/He is required to measure performance and compare the same with operating plans and standards.
- (iii) **Reporting:** She/He analyses and interprets the operational performance of business and reports to all levels of management and the owners of the business.
- (iv) **Evaluation:** Another function is to evaluate various policies and programmes.
- (v) **Protection of assets:** The protection of assets of business is the another function of management accountant. This is done through adequate internal control and proper insurance coverage.

2. Administrative and procedural functions

- (i) Installation of accounting system.
- (ii) Arranging audit.
- (iii) Introduction of budgeting system.
- (iv) Making capital expenditure decisions.
- (v) Management of cash.

- (vi) Preparation of financial statements.
- (vii) Inventory management.
- (viii) Computation and payment of wages and salaries.
- (ix) Collection of data relating to business activities.

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12.9 DIFFERENCE BETWEEN FINANCIAL ACCOUNTING AND MANAGEMENT ACCOUNTING

Financial accounting and management accounting are two important aspects in an organization. Both are inter related and interdependent on various issues. Following are some of the major differences between financial and management accounting.

<i>Basis</i>	<i>Financial Accounting</i>	<i>Management</i>
<i>Users</i>	Mainly intended to serve external users like share holders, bankers, creditors, and government.	Mainly intended to serve internal users like management.
<i>Legality</i>	Statutorily compulsory as per different acts such as companies act of 1956 income tax act of 1961 etc.	Not compulsory
<i>Development</i>	It is well developed and very old system in practice.	It is of recent development.
<i>Subject matter</i>	It deals with preparation of financial statements through systematic recording and determines the financial position of a concern.	It deals with presentation of needed information for management for effective decisions.
<i>Standard</i>	There is specific standard for preparation as per the act and practice.	Preparation of statements and reports are not standardized.
<i>Dependency</i>	It is an independent discipline discipline.	It is an inter dependent.
<i>Publications</i>	It is compulsory to publish the financial reports of the concern.	It is not compulsory
<i>Statement & reports prepared</i>	Generally Trading and profit and loss account and balance sheet are prepared.	It prepares the funds and cash flow statement, budgetary reports, ratio statements etc.
<i>Consideration</i>	It considers only monetary transactions.	It some time considers non monetary aspect also like quality, machine hours, number of people working etc.
<i>Auditing</i>	Audit of books of accounts by a qualified chartered accountant is compulsory.	It is not necessary to get audited the records of management accounting.

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12.10 DIFFERENCE BETWEEN COST ACCOUNTING AND MANAGEMENT ACCOUNTING

Basis	Cost Accounting	Management Accounting
<i>Functions</i>	1. Basically executes the function of identification and recording of cost and cost control in the operation.	It basically assists management in decision making through providing necessary information.
<i>Statutory compulsions</i>	2. It is necessary to maintain cost records in a systematic way in certain manufacturing industries as per the notification.	It is purely optional to management.
<i>Focus</i>	3. It is focused on cost identification and cost control.	It is focused on the effective decisions for optimum managerial efficiency and objective attainment.
<i>Users of the information</i>	It is used by both internal as well as external parties.	Used by only internal parties.
<i>Data used</i>	It derives certain data from financial records.	It derives data from financial books, cost books as well as certain other sources.
<i>Scope and coverage</i>	The scope of this discipline is limited to the extent of cost recording and reporting.	The scope of this discipline is broader and covers various aspects like finance, costing, taxation, audit and investments.
<i>Tools and techniques used</i>	It follows well developed tools and techniques for identification and recording of cost.	It doesn't have well developed tools or technique.

12.11 LIMITATIONS OF MANAGEMENT ACCOUNTING

Management accounting cannot replace the decisions. It can just assist the management in its operations through providing necessary analytical statements and advises management for better and efficient managerial functions. In spite of all advantage of management accounting to managerial decisions it can not be taken as a major aspect of the management system because of the serious limitations which involved with this discipline.

1. Data Dependency: Management accounting derives information from Financial accounting, Cost accounting and other sources. So, the conclusions arrived at by

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management accountants depend to a large extent on the accuracy of these two records. Therefore, if the past data which are collected from the financial and cost records are found inaccurate, the decisions suggested by the management accountants, on the basis of the above, also will be inaccurate.

2. Does not give the decision: Management accounting cannot replace the decisions. It can just assist the management in its operations through providing necessary analytical statements and advises management for better and efficient managerial functions.

3. Costly affair: Installation and maintenance of management accounting system is suitable for those concerns which has significant amount of transactions generally large establishments. Therefore, small concerns cannot afford to adopt this system.

4. No standardization as other disciplines: Management accounting is still in the development stage. So it has to face the problems fluidity of concepts, improvement of techniques etc. It does not have any strong principles like financial accounting and cost accounting. It does not follow any set rule and hence differs in its practices.

5. Danger of misleading: The information provided by management accounting cannot be taken as full proof information for making any managerial decisions. Because the data used by management accountants itself may have window dressed data due to which the management accounts may mislead the management.

6. Needs human involvement for interpretation; Management accounting involves people to make final reports or interpretations, due to which the interpretation may be of the personal opinion of the person who has prepared it. It creates differences in the interpretations and becomes more subjective rather than objective in the analysis.

12.12 SUMMARY

Management Accounting is the presentation of accounting information to management in order to formulate the policies and assist in its day-to-day activities. In other words, it helps the management to perform all its functions including planning, organizing, staffing, directing and control. It is a tool for making effective decision. It deals with generating statements and reports through various data like financial accounting, cost accounting etc, with use of proper tool of analysis and interpretation and it is made use for managerial decisions.

Financial Accounting: Accounting is the process of systematic recording of financial transactions so as to determine the true and fair financial position of a concern. Management accounting derives the necessary data from the financial

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accounting. For instance when fund flow statement or ratio statement are to be prepared, financial statements are very essential without which the preparation and decision about fund flow and ratios are not possible.

Cost Accounting: Management accounting uses certain technique and tools of cost accounting as well. Cost accounting provides the various techniques of costing, viz, Marginal Costing, Standard Costing, Differential Cost Analysis etc. which plays significant role in the operation and control of the enterprise. It assists management in measuring the operational efficiency of the management and achieving managerial goals.

Budgetary Control: Budgetary control is a system of controlling costs through establishment of standards. It controls the activities of the business and measures the variance by comparing the actual with the budgeted figures and enquires into the reasons of such variance at each and every step, so that the adverse variance may not be repeated in future.

Tax Planning: It is concerned with the computation of taxable income according to Income-Tax Act, and filing of returns and the payment of tax. It is one of the core functions of the modern management accountant, facilitating management in proper tax planning and accounting.

Analysis and Interpretation of Accounts: Financial statement can be better understood through comparative study. The primary duty of the management accountant is to explain the data relating to the management and assist management in taking decisions.

Reporting: Management accounting uses the technique of statistics wherever necessary for effective analysis and interpretation. Sometimes reports on various aspects of the business are to be submitted by the management accountants. At the time of preparation of the statement or Reports, they use different statistical techniques, viz, Line Chart, Pie Chart, Index Numbers etc. in order to be more attractive and intelligible.

Internal audit and control: Management accountants depend in the internal audit and use that for generating reports on various financial issues for decision making.

Budgetary Control: Budgetary control is a system of controlling costs thorough establishment of standards. It controls the activities of the business and measures the variance by comparing the actual with the budgeted figures and enquires into the reasons of such variance at each and every step, so that the adverse variance may not be repeated in future.

Tax Accounting: It is concerned with the computation of taxable income as per Income Tax Act, and filing of returns and the payment of tax. It is one of the core

functions of the modern management accountant, facilitating management in proper tax planning and accounting.

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12.13 GLOSSARY

- (a) **Management Accounting:** Management Accounting is the presentation of accounting information to management in order to formulate the policies and assist in its day-to-day activities.
- (b) **Financial Accounting:** Accounting is the process of systematic recording of financial transactions so as to determine the true and fair financial position of a concern. Management accounting derives the necessary data from the financial accounting.
- (c) **Cost Accounting:** Management accounting uses certain technique and tools of cost accounting as well. Cost accounting provides the various techniques of costing, viz, Marginal Costing, Standard Costing, Differential Cost Analysis etc. which plays significant role in the operation and control of the enterprise. It assists management in measuring the operational efficiency of the management and achieving managerial goals.
- (d) **Budgetary Control:** Budgetary control is a system of controlling costs thorough establishment of standards. It controls the activities of the business and measures the variance by comparing the actual with the budgeted figures and enquires into the reasons of such variance at each and every step, so that the adverse variance may not be repeated in future.
- (e) **Tax Planning:** It is concerned with the computation of taxable income according to Income-Tax Act, and filing of returns and the payment of tax. It is one of the core functions of the modern management accountant, facilitating management in proper tax planning and accounting.

Analysis and Interpretation of Accounts: Financial statement can be better understood through comparative study. The primary duty of the management accountant is to explain the data relating to the management and assist management in taking decisions.

- (f) **Reporting:** Management accounting uses the technique of statistics wherever necessary for effective analysis and interpretation. Sometimes reports on various aspects of the business are to be submitted by the management accountants. At the time of preparation of the statement or Reports, they use different statistical techniques, viz, Line Chart, Pie Chart, Index Numbers etc. in order to be more attractive and intelligible.

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- (g) **Tax Accounting:** It is concerned with the computation of taxable income as per Income Tax Act, and filing of returns and the payment of tax. It is one of the core functions of the modern management accountant, facilitating management in proper tax planning and accounting.

12.14 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. Define management accounting.
2. Give the meaning of management accounting.
3. State the features of management accounting.
4. State the functions of management accounting.
5. Outline the scope of management accounting.
6. Mention any two primary objectives of management accounting.
7. State the advantages of management accounting.
8. State the limitations of management accounting.
9. List out important tools of management accounting.

(B) Extended Answer Questions

1. Explain clearly the objective of management accounting.
2. What are the advantages of having a system of management accounting in an organization?
3. Discuss the limitation of management accounting.
4. Distinguish between management accounting and financial accounting.
5. Distinguish between management accounting and cost accounting.
6. Explain the importance of management accounting.
7. Explain the role of management accountant.

(C) True or False

1. Cost Accounting is the presentation of accounting information to management in order to formulate the policies and assist in its day-to-day activities.
2. Accounting is the process of systematic recording of financial transactions so as to determine the true and fair financial position of a concern.
3. Management accounting uses certain technique and tools of cost accounting as well.

4. Budgetary control is a system of controlling costs thorough establishment of standards.
5. Tax Planning is concerned with the computation of taxable income according to Income-Tax Act, and filing of returns and the payment of tax.

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(D) Multiple Choice Questions

1. What is the presentation of accounting information to management in order to formulate the policies and assist in its day-to-day activities?
 - (a) Management Accounting
 - (b) Cost Accounting
 - (c) Budgetary control
 - (d) All the above
2. What is a system of controlling costs thorough establishment of standards?
 - (a) Management Accounting
 - (b) Cost Accounting
 - (c) Budgetary control
 - (d) All the above

(E) Fill in the Blanks

1.is the presentation of accounting information to management in order to formulate the policies and assist in its day-to-day activities.
2.is the process of systematic recording of financial transactions so as to determine the true and fair financial position of a concern.
3.uses certain technique and tools of cost accounting as well.
4.is a system of controlling costs thorough establishment of standards.

12.15 KEY TO CHECK YOUR ANSWER/ANSWER TO CHECK YOUR PROGRESS

(C) 1. False, 2. True, 3. True, 4. True, 5. True**(D)** 1. (a), 2. (c)**(E)** 1. Management Accounting, 2. Accounting, 3. Management accounting, 4. Budgetary control

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12.17 SUGGESTED READINGS

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2. Chandra, Prasanna, "Financial Management: Theory and Practices", Tata Mc Graw Hill, New Delhi.
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12.18 TERMINAL QUESTIONS

1. Explain the nature and scope of management accounting.

2. Define Management accounting and critically examine its role in decision making.

UNIT 13

COST-VOLUME-PROFIT ANALYSIS

Structure:

- 13.1 Introduction
- 13.2 Cost-Volume-Profit Analysis
- 13.3 Practical Problems
- 13.4 Summary
- 13.5 Glossary
- 13.6 Check Your Progress (Multiple Choice/Objective Type Questions)
- 13.7 Key to Check Your Answer
- 13.8 Bibliography
- 13.9 Suggested Readings
- 13.10 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Cost-Volume-Profit Analysis

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13.1 INTRODUCTION

Cost-volume-profit (CVP) analysis is used to determine how changes in costs and volume affect a company's operating income and net income. In performing this analysis, there are several assumptions made, including: Sales price per unit is constant.

13.2 COST VOLUME PROFIT ANALYSIS

Cost Volume Profit Relationship

Profit of an organization depends on the some numerous factors such as (i) selling price of the product (ii) cost of producing those products and (ii) volume of sales. There is a close relationship between these three factors and in fact, they are interdependent, e.g., selling price to a greater extent will depend upon the costs; total sales depend on total output and cost and output are again interdependent. Hence, there is a close relationship between cost, volume and profit.

Assumptions of Cost-Volume-Profit Analysis are:

- (i) Per unit selling price remains constant.
- (ii) The fixed costs remain constant despite wide changes in the level of production.
- (iii) The variable cost per unit remains constant.

Uses of Cost Volume Analysis

The uses of cost volume analysis are:

1. To forecast the profit accurately.
2. To help management in determining the pricing policies.
3. To evaluate the performance of the business.
4. To facilitate the preparation of flexible budget.
5. To achieve cost control and cost reduction.
6. To determine break even point.

Cost-Volume-Profit Relationship Information

The cost volume profit relationship analysis is an exercise in studying the interplay of the factors like, volume of sales, selling price, variable cost per unit, fixed cost, product mix of sales etc. The relationship between two or more of such factors can be presented in any one of the following form:

- (i) Statement or Reports
- (ii) Charts or Graphs
- (iii) Mathematical deduction, which are primarily based on basic marginal cost equation.

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Marginal Cost

It is the amount at any given volume of output by which, aggregate costs are changed, if the volume of output is increased or decreased by one unit.

Institute of Cost and Management Accountants, England, Marginal costs of product would be two amounts—

- (i) Increase in the aggregate costs, if the production is increased by one unit, and/or.
- (ii) Decrease in the aggregate costs, if the production is decreased by one unit.

Definition

G.H. Lawson has described the marginal cost in the following words: “The cost of any unit production is the increase in the total costs to which the firm becomes committed by the production that of unit. But if the one part of the total cost is fixed, this part will remain unchanged as output expands – only the variable cost will increase”.

Marginal Costing

Marginal costing is based on the distinction between fixed cost and variable cost. Only variable cost are applied to products. All fixed cost are written off to the profit and loss account. Even the semi-variable costs are for this purpose segregated into fixed and variable components. It makes a basic assumption that excess of selling price over variable cost provides a fund to meet firstly the fixed costs and then to provide company's profit.

Definition: The ICMA, London, has defined, “Marginal costing as the ascertainment of marginal cost and of the effect on profit of changes in volume or type of output by difference between fixed costs and variable costs”.

Features of Marginal Costing

The features of the marginal costing are:

- (i) **Segregation of costs into fixed and variable elements:** In marginal costing, all costs are classified into fixed and variable elements.
- (ii) **Marginal costs as product costs:** Only marginal (variable) costs are charged to products produced during the period.

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- (iii) **Fixed costs as period costs:** Fixed costs are treated as period costs and are charged to the costing profit and loss account of the period in which they are incurred.
- (iv) **Valuation of inventory:** The work-in-progress and finished stocks are valued at marginal cost only.
- (v) **Contribution:** Contribution is the difference between sales value and marginal cost of sales. The relative profitability of products or departments is based on a study of contribution made by each of the products or departments.
- (vi) **Pricing:** In marginal costing, prices are based on marginal cost plus contribution.

Advantages of Marginal Costing

The advantages of the marginal costing are:

- (i) It helps to understand relationship among cost, selling price and volume of output.
- (ii) It brings out clearly the “contribution” of the each product to profit and which in turn helps in better decision making.
- (iii) It gives clear idea how the maximum overall profit can be earned.
- (iv) It helps in taking a number of managerial decisions, e.g., “make or buy decision”.
- (v) Valuation of the stock of finished goods and work-in-progress is more realistic if it is based on marginal cost.
- (vi) It is a better and more accurate technique for determining income than absorption costing.
- (vii) It is a valuable aid for control due to clear distinction between fixed and variable costs, which enables the application of flexible budget as a control technique.

Disadvantages of Marginal Costing

The disadvantages of marginal costing are as follows:

- (i) This technique is useful only for short term analysis.
- (ii) It is very difficult to analyze overhead into fixed and variable elements
- (iii) It is not suitable for capital intensive industries fixed costs are much more than variable cost.

- (iv) It creates unnecessary worries for the management when the “recession” set in because, it unduly magnifies the problem of decreasing profits or increasing losses.
- (v) Marginal costing is not suitable for pricing decisions. It ignores fixed cost, an important element of the total cost.

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Meaning of Fixed Cost, Variable Cost and Semi-variable Cost

Fixed Cost: A fixed cost is one which remains unchanged in total amount over a wide range of production level e.g., building rent, permanent staffs salaries etc. Fixed cost per unit will vary with a change in the volume of output. According to ICMA, London “a cost which tends to be unaffected by variations in volume of output”.

Variable Cost: Variable cost per unit remains constant while the total amount of variable cost changes in direct proportion to changes, in the level of production e.g. Raw materials consumed. According to ICMA, London, “variable cost is a cost which tends to vary directly with volume of output”.

Semi Variable Cost: Cost are not necessarily either fixed or variable. Some costs increase with the increase in the volume of production but not in the same proportion, e.g. Supervisory salaries. According to ICMA, London, “a cost which is partly fixed and partly variable”.

Marginal Cost Equation

The following equation is known as basic marginal cost equation:

If Profit ® Sales – Variable Cost = Fixed Cost + Profit

If Loss ® Sales – Variable Cost = Fixed Cost – Loss

As excess of selling price over variable costs, represents contribution, the above equation may also shown as–

Contribution = Fixed Cost + Profit

and Contribution = Fixed Cost – Loss

Hence, Sales – Contribution = Variable Cost

Contribution

It is evident from the marginal cost equation that contribution is the excess of the sales value over the marginal cost of sales. This is also known as “Gross margin” or contribution, which first meets the fixed cost and excess of the over fixed costs, represents profit.

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Illustration – 1

Direct material	20,000
Direct wages	5,000
Variable factory overheads	3,000
	28,000
Variable selling and distribution overhead	7,000
Total variable cost	35,000
Sales ₹ 60,000 and fixed cost ₹ 20,000	

Solution:

Here,

$$\begin{aligned}\text{Contribution} &= \text{Sales} - \text{Variable cost} \\ &= 60,000 - 35,000 = ₹ 25,000\end{aligned}$$

$$\begin{aligned}\text{Profit} &= \text{Contribution} - \text{Fixed cost} \\ &= 25,000 - 20,000 = ₹ 5,000\end{aligned}$$

or

$$\begin{aligned}\text{Fixed cost} + \text{Profit} &= \text{Contribution} \\ \text{i.e., } 20,000 + 5,000 &= 25,000 \\ 25,000 &= 25,000\end{aligned}$$

Illustration - 2**A simple statement showing Cost–Volume–Profit Relationship (analysis)**

<i>Level of Activities</i>	<i>50%</i>	<i>70%</i>	<i>100%</i>
Volume of sales (units)	5,000	7,000	10,000
Selling price (per unit)	₹ 1.25	₹ 1	₹ 0.80
Total sales value (A)	6,250	7,000	8,000
Direct material	2,200	2,400	2,600
Direct wages	600	700	800
Total variable overhead	800	1,000	1,300
Total variable cost (B)	3,600	4,100	4,700
Contribution (A – B)	2,650	2,900	3,300
Total Fixed cost	1,500	1,500	1,500
Profit	1,150	1,400	1,800
Profit / Loss	184%	20%	22.5%.

Profit Volume Ratio (P/V Ratio)**NOTES**

Profit volume ratio establishes the relationship between contribution and sales. It is another method used to calculate the cost volume profit relationship is P/V ratio. It helps for studying the profitability of operations of a business. This ratio sometimes is referred as “marginal income ratio” or “contribution to sale ratio”.

$$\begin{aligned} \text{P/V Ratio} &= \frac{\text{Contribution}}{\text{Sales}} \times 100 && \text{or} \\ &= \frac{\text{Sales} - \text{Variable cost}}{\text{Sales}} \times 100 && \text{or} \\ &= \frac{\text{Fixed cost} + \text{Profit}}{\text{Sales}} \times 100 \end{aligned}$$

Illustration – 3

Sales	₹ 8,00,000
Variable Cost	₹ 3,00,000
Fixed Cost	₹ 2,00,000
Calculate P/V Ratio?	

Solution:

$$\begin{aligned} \text{Method – 1} \quad \text{P/V Ratio} &= \frac{\text{Sales} - \text{Variable cost}}{\text{Sales}} \times 100 \\ &= \frac{8,00,000 - 3,00,000}{8,00,000} \times 100 = \frac{5,00,000 \times 100}{8,00,000} = 62.5\% \end{aligned}$$

$$\begin{aligned} \text{Method – 2} \quad \text{P/V Ratio} &= \frac{\text{Fixed cost} + \text{Profit}}{\text{Sales}} \times 100 \\ \text{Profit} &= \text{Sales} - \text{Variable cost} - \text{Fixed cost} \\ &= 8,00,000 - 3,00,000 - 2,00,000 \\ &= 8,00,000 - 5,00,000 = 3,00,000 \\ \text{P/V Ratio} &= \frac{2,00,000 + 3,00,000}{8,00,000} \times 100 \\ &= \frac{5,00,000 \times 100}{8,00,000} = 62.5\% \end{aligned}$$

Break Even Point

Break even point represents the level of activity where the total cost is equal to total revenue. It is a point of “no Profit no Loss” and at this level, firm is said to break even. Firm will earn profits, it attains, a levels of activity higher than this point. Activity below the break even point results into losses.

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Break even point can be determined with the help of following formulae:

$$\text{Break Even Point (for output)} = \frac{\text{Total Fixed cost}}{\text{Contribution per unit}}$$

and

$$\text{Break Even Point (in sales)} = \frac{\text{Total Fixed Cost}}{\text{P/V ratio}}$$

Illustration – 4

From the following particulars calculate BEP.

Fixed Expenses	₹ 60,000
Variable cost per unit	₹ 5
Selling price per unit	₹ 8

Solution:

$$\begin{aligned} \text{Part – 1 } \text{BEP (in unit)} &= \frac{\text{Fixed Cost}}{\text{Contribution}} \\ &= \frac{\text{Fixed Cost}}{\text{Selling Price per unit} - \text{Variable cost per unit}} \\ &= \frac{60,000}{8 - 5} = \frac{60,000}{3} = 20,000 \text{ units} \end{aligned}$$

$$\begin{aligned} \text{Part – 2 } \text{BEP (in sales)} &= \frac{\text{Fixed Cost}}{\text{P/V ratio}} \\ \text{P/V Ratio} &= \frac{\text{Sales} - \text{Variable Cost}}{\text{Sales}} \times 100 \\ &= \frac{8 - 5}{8} \times 100 = \frac{3 \times 100}{8} = 37.5\% \\ \therefore \text{BEP} &= \frac{60,000}{37.5\%} = \frac{60,000 \times 100}{37.5} = ₹ 1,60,000 \end{aligned}$$

Hence, *BEP* in output is 20,000 units and *BEP* in volume or sales is ₹ 1,60,000.

Margin of Safety

Margin of safety represents the amount by which volume of sales exceeds the break down point and the actual output represents the margin of safety.

In formulae form, it is usually represented as–

$$\text{Margin of Safety} = \text{Total sales} - \text{Sales at } \text{BEP}$$

Or

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$$\text{Margin of Safety} = \frac{\text{Profit}}{\text{P/V ratio}}$$

Higher margin of safety better for business because it indicates that even if there is some fall in the sales, still the firm will earn profit. A low margin of safety represents a difficult business position.

Margin of safety can improve by taking any or more of the following steps:

- (i) Increasing the selling price
- (ii) Increasing the production
- (iii) Changing the product mix
- (iv) Reducing variable cost
- (v) Reducing Fixed cost.

Illustration – 5

Fixed cost	₹ 1,50,000
Profit	₹ 90,000
Sales	₹ 5,00,000

Calculate margin of safety.

Solution:

$$\text{Margin of Safety} = \frac{\text{Profit}}{\text{P/V ratio}}$$

$$\begin{aligned} \text{P/V Ratio} &= \frac{\text{Profit} + \text{Fixed Cost}}{\text{Sales}} \times 100 \\ &= \frac{90,000 + 1,50,000}{5,00,000} \times 100 = \frac{2,40,000 \times 100}{5,00,000} = 48\% \end{aligned}$$

$$\therefore \text{Margin Safety} = \frac{90,000}{48\%} = \frac{90,000 \times 100}{48} = 1,87,500$$

Again/or

Margin of Safety = Sales – Break Even Sales

$$\begin{aligned} \text{BEP (in sales)} &= \frac{\text{Fixed Cost}}{\text{P/V ratio}} \\ &= \frac{1,50,000}{48\%} = \frac{1,50,000 \times 100}{48} = ₹ 3,12,500 \end{aligned}$$

$$\therefore \text{Margin of Safety} = 5,00,000 - 3,12,500 = ₹ 1,87,500$$

Angle of Incidence

Angle of Incidence is the angle formed at BEP. In other words, it is the angle between sales line and total cost line at the BEP. It indicates the rate at which

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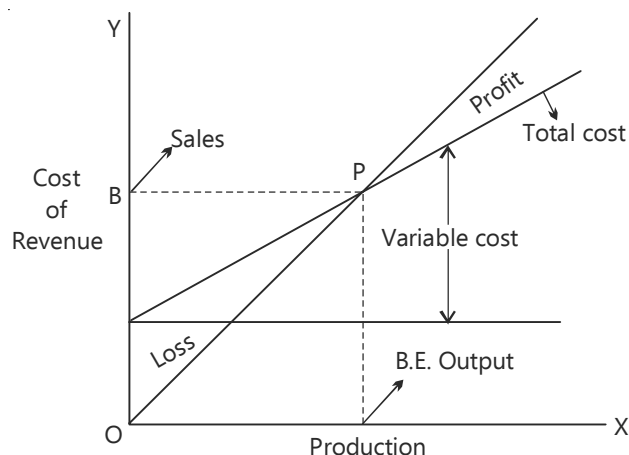
profits are being made. Large angle indicates higher rate of profit, while a small angle indicates a lower rate of profit. To improve this angle, contribution should be increased either by raising the selling price and by reducing variable cost.

Break Even Chart

It is the simplest method of depicting the relationship among cost-volume and profit. It is a chart which clearly show the break even point of the business. A break even chart is presentation of cost and revenue data on a graph. However, sometimes a break even chart also establish relationship between profit and volume of output. To some extent it is a condensed master flexible budget, showing the normal profit for any given sales volume.

BEP Graph

Volume of production is shown on X-axis and costs and revenue are shown on the Y-axis. Fixed cost line will be parallel to X-axis. Total cost line can be depicted by plotting variable cost line above the fixed cost line i.e., by treating fixed costs line as X-axis. The sales line will originate from the origin. The point of intersection of local cost line and total sales line will be the break even point.

**Application of Marginal Costing**

Marginal costing is a technique which helps management in a number of ways. It serves as an important aid in “cost control”, “profit planning” and “decision making.” A few important application of the technique are discussed below.

Evaluation of Performance: The various segments of an organizations say departments, divisions, geographical marker or a production line are likely to have different profitability rates.

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Fixing–Selling Price: Marginal cost is the variable cost relating to a product. Variable cost represents the minimum selling price, because if the selling price fails to recover even the variable cost the business will suffer a cash loss in addition to the loss represented by unrecovered fixed cost both cash and non-cash.

Fixing the prices below the total cost: Many a time a firm may have to fix selling price of its product below the total cost. This particularly, is the case where there is depression in the market, under such circumstances, a price may be fixed, which will recover on the variable costs and a part of the fixed costs, although not whole of it. Such a decision will keep the loss to minimum.

Making Profitable use of scarce resources: Sometimes peculiar circumstances may arise in business where normal production may become unattainable due to scarcity of certain resources. This may happen due to power cuts, scarcity of skilled labour, machinery breakdown etc.

Make or buy decision: Marginal costing is extensively used when “make or buy decision” are to be taken. *For example*, in a simple situation where the existing plant capacity can be profitably utilized in manufacturing some other product, and the purchase price of the product in question, is less than the marginal cost of the product, decision will be to “buy” and vice versa. If certain fixed costs will still be incurred even after purchasing from the market, such fixed costs will also be considered.

Illustration – 6

Fixed cost 1,20,000, variable cost ₹ 3 per unit, selling price ₹ 7 per unit and output 50,000 units. Determine the profit under each of the following situation.

- With the above data.
- With a 10% increase in output
- With a 10% increase in fixed cost
- With a 10% increase in variable cost
- With a 10% increase in selling price.

Solution:

<i>Particulars</i>	<i>₹</i>
(a) Profit at the output of 50,000 units:	
Contribution per unit (SPPU – VCPU) i.e. (7 – 3)	4
Total contribution (50,000 units × 4)	2,00,000
Less: Fixed costs	1,20,000
Profit	80,000
(b) Increase in output 10% of 50,000 units.	

Increase contribution @ ₹ 4 per unit ($50,000 + 5,000 = 55,000$)	2,20,000
Less: Fixed costs	1,20,000
Profit	1,00,000
(c) Increase in fixed cost 10%	
Contribution	2,00,000
Less: Fixed costs ($1,20,000 + 12,000$)	1,32,000
Profit	68,000
(d) Increase in variable cost 10%	
Contribution per unit (SPPU – VCPU) i.e. ($7 - 3.30$)	3.70
Total contribution on 50,000 units ($50,000 \times 3.70$)	1,85,000
Less: Fixed costs	1,20,000
Profit	65,000
(e) Increase in selling price 10%	
Contribution per unit (SPPU – VCPU) i.e. ($7.70 - 3$)	4.70
Total contribution on 50,000 units ($50,000 \times 4.70$)	2,35,000
Less: Fixed costs	1,20,000
Profit	1,15,000

13.3 PRACTICAL PROBLEMS

Illustration – 7

Sales ₹ 1,50,000, Profit ₹ 40,000, Fixed cost at ₹ 30,000. Calculate variable cost?

Solution:

$$\begin{aligned}
 \text{Sales} &= \text{Fixed cost} + \text{Variable cost} + \text{Profit} \\
 \therefore \text{Variable Cost} &= \text{Sales} - \text{Profit} - \text{Fixed cost} \\
 &= 1,50,000 - 40,000 - 30,000 \\
 &= 1,50,000 - 70,000 = 80,000
 \end{aligned}$$

Hence, Variable cost ₹ 80,000

Illustration – 8

Given sales ₹ 10,00,000, Variable cost ₹ 7,00,000 and Loss ₹ 1,00,000. Find Fixed Cost?

Solution:

$$\begin{aligned}
 \text{Sales} &= \text{Fixed cost} + \text{Variable cost} - \text{Loss} \\
 \therefore \text{Fixed cost} &= \text{Sales} - \text{Variable cost} + \text{Loss} \\
 &= 10,00,000 - 7,00,000 + 1,00,000 \\
 &= 11,00,000 - 7,00,000 = 4,00,000
 \end{aligned}$$

Hence, Fixed cost ₹ 4,00,000.

Illustration – 9

Variable cost ₹ 50,000, Fixed cost ₹ 30,000, Profit ₹ 10,000 Calculate the amount of sales.

Solution:**NOTES**

$$\text{Contribution} = \text{Sales} - \text{Variables cost}$$

$$\text{Fixed cost} + \text{Profit} = \text{Sales} - \text{Variable cost}$$

$$\text{Sales} = \text{Fixed cost} + \text{Profit} + \text{Variable cost}$$

$$= 30,000 + 10,000 + 50,000 = 90,000$$

$$\text{Hence, Sales} = ₹ 90,000$$

Illustration – 10

Sale of product amounts to 200 units per month at ₹ 10 per unit. Fixed overhead is ₹ 400 per month and variable cost is ₹ 6 per unit.

There is proposal to reduce prices by 10%. Calculate present and future P/V ratio. How many units must be sold to earn the present total profit?

Solution:

Sales (200 x 10)	2,000
Less: Variable cost (200 x 6)	1,200
Contribution	800
Less: Fixed cost	400
Profit	400

$$\begin{aligned} \text{Present P/V ratio} &= \frac{\text{Contribution}}{\text{Sales}} \times 100 \\ &= \frac{800}{2,000} \times 100 = 40\% \end{aligned}$$

$$\text{B.E.P} = \frac{\text{Fixed cost}}{\text{P/V ratio}} = \frac{400}{40\%} = 1,000$$

When price is reduced by 10%

Selling price	9
Less: Variable cost	6
Contribution per unit	3

$$\text{P/V ratio} = \frac{3}{9} \times 100 = 33.33\%$$

$$\text{Required sales} = \frac{\text{F.C.} + \text{Desired profit}}{\text{P/V ratio}} = \frac{400 + 400}{33.33} = ₹ 2,400$$

Illustration – 11

An Analysis of cost of X Manufacturing Ltd. from the following information -

Cost element	Variable cost % of sales	Fixed cost
Direct material	32.8	-
Direct labour	28.4	-

NOTES	Factory overhead	12.6	189900
	Distribution expenditure	4.1	58400
	General expenditure	1.1	66700

Budget sales for the next year ₹ 18,50,000. We are required to determine -

- (i) Break even sales volume
- (ii) The profit in budget sales volume
- (iii) The profit and actual sales
 - (a) Drop by 10%
 - (b) Increase 5% by budget.

Solution:

Total % of variable cost to sales -

Direct material	32.8%
Direct labour	28.4%
Factory over head	12.6%
Distribution Exp.	4.1%
General Expenditure	1.1%

Total = 79%

Now total fixed cost = 1,89,900 + 58,400 + 66,700 = 3,15,000

Contribution = Sales - Variable cost
 = (100 - 79)% = 21%

$$(i) \quad \text{Break even sales volume} = \frac{\text{Fixed Cost}}{\text{P/V ratio}}$$

$$= \frac{315000}{21\%} = \frac{315000 \times 100}{21} = 15,00,000 \text{ ₹}$$

(ii) Profit, when budget of Sales ₹ 18,50,000

$$\begin{aligned} \text{Profit} &= \text{Sales} \times \text{P/V ratio} - \text{Fixed cost} \\ &= 18,50,000 \times 21\% - 3,15,000 \\ &= 18,50,000 \times \frac{21}{100} - 3,15,000 \\ &= 18,500 \times 21 - 3,15,000 \\ &= 3,88,500 - 3,15,000 = 73,500 \end{aligned}$$

(iii) (a) Profit, when sales drop by 10%

∴ Sales – 18,50,000

Less: 10% ↓ – 1,85,000

∴ Sales – 16,65,000

∴ Profit = Sales × P/V ratio – Fixed cost
 = 16,65,000 × 21% – 3,15,000 = 34,650

- (b) Profit, when sales Increase by 5%

$$\therefore \text{Sales} - 18,50,000$$

$$\text{Add: } 5\% \quad \uparrow 92,500$$

$$\therefore \text{Sales} \quad 19,42,500$$

$$\begin{aligned} \therefore \text{Profit} &= \text{Sales} \times \text{P/V ratio} - \text{Fixed cost} \\ &= 19,42,500 \times 21\% - 3,15,000 \\ &= 4,07,925 - 3,15,000 = 92,925 \end{aligned}$$

NOTES

Illustration – 12

The following information related to production and sales of an article for January and February 2014.

	January (₹)	February (₹)
Sales	38,000	65,000
Profit	—	3,000
Loss	2,400	—

Calculate: (a) P/V ratio (b) Fixed cost (c) BEP (d) Profit or Loss at ₹ 46,000 sales (e) Sales to earn a profit of ₹ 5,000.

Solution:

$$\begin{aligned} \text{(a) P/V Ratio} &= \frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100 \\ &= \frac{3,000 - (-2,400)}{65,000 - 38,000} \times 100 = \frac{5,400}{27,000} \times 100 = 20\% \end{aligned}$$

$$\begin{aligned} \text{(b) Fixed cost} &= \text{Sales} \times \text{P/V Ratio} - \text{Profit} \\ &= 65,000 \times \frac{20}{100} - 3,000 \\ &= 13,000 - 3,000 = ₹ 10,000 \end{aligned}$$

$$\begin{aligned} \text{(c) Break even point} &= \frac{\text{Fixed Cost}}{\text{P/V ratio}} \\ &= \frac{10,000}{20\%} = \frac{10,000 \times 100}{20} = ₹ 50,000 \end{aligned}$$

- (d) Profit or Loss when sales at ₹ 46,000
 Profit or Loss = Sales × P/V ratio – Fixed cost

$$\begin{aligned} &= 46,000 \times \frac{20}{100} - 10,000 \\ &= 9,200 - 10,000 = -800 \end{aligned}$$

$$\therefore \text{Loss} = ₹ 800$$

- (e) Sales to earn profit ₹ 5,000

$$\begin{aligned} \text{Sales} &= \frac{\text{Fixed cost} + \text{Desire Profit}}{\text{P/V ratio}} \\ &= \frac{10,000 + 5,000}{20\%} \end{aligned}$$

$$\text{NOTES} = \frac{15,000 \times 100}{20} = ₹ 75,000$$

Illustration – 13

The sales and profit figures of two years are given below:

<i>Year</i>	<i>Sales</i>	<i>Profit</i>
31/3/2014	1,50,000	20,000
31/3/2015	1,70,000	25,000

You are required to calculate (a) P/V ratio (b) Break even point (c) The sales required to earn profit of ₹ 40,000 (d) Margin of safety at a profit of ₹ 50,000 (e) The profit made when sales are ₹ 2,50,000.

Solution:

$$\begin{aligned} \text{(a) P/V Ratio} &= \frac{\text{Change in profit}}{\text{Change in Sales}} \times 100 \\ &= \frac{25,000 - 20,000}{1,70,000 - 1,50,000} \times 100 \\ &= \frac{5,000}{20,000} \times 100 = 25\% \end{aligned}$$

$$\begin{aligned} \text{(b) Break even point} &= \frac{\text{Fixed Cost}}{\text{P/V ratio}} \\ &= \frac{17,500}{25\%} = \frac{17,500 \times 100}{25} = 70,000 \end{aligned}$$

Note: Fixed Cost = Sales x P/V ratio – Profit

$$\begin{aligned} &= 1,50,000 \times \frac{25}{100} - 20,000 \\ &= 37,500 - 20,000 = ₹ 17,500 \end{aligned}$$

(c) The sales when profit earn of ₹ 40,000

$$\begin{aligned} \text{Sales} &= \frac{\text{Fixed Cost} + \text{Desired Profit}}{\text{P/V ratio}} \\ &= \frac{17,500 + 40,000}{25\%} \\ &= \frac{57,500 \times 100}{25} = ₹ 2,30,000 \end{aligned}$$

(d) Margin of Safety at a profit of ₹ 50,000

$$\text{Margin of Safety} = \frac{\text{Profit}}{\text{P/V ratio}}$$

$$= \frac{50,000}{25\%} = \frac{50,000 \times 100}{25} = 2,00,000$$

NOTES

(e) Profit, when sales are ₹ 2,50,000

Profit = Sales × P/V ratio – Fixed cost

$$= 2,50,000 \times \frac{25}{100} - 17,500$$

$$= 62,500 - 17,500 = ₹ 45,000 .$$

Illustration – 14

The following information is obtained from A Ltd. for the year 2014.

Sales 60,000

Variable cost 30,000

Fixed cost 15,000

You are required to: (a) calculate the P/V ratio, Break even point and Margin of safety at this level. (b) Calculate the effect of 10% increase in sales price.

Solution:

Given, Sales 60,000

Variable cost 30,000

and Fixed cost 15,000

$$\begin{aligned} \text{(a) P/V Ratio} &= \frac{\text{Contribution}}{\text{Sales}} \times 100 \\ &= \frac{\text{Sales} - \text{Variable Cost}}{\text{Sales}} \times 100 \\ &= \frac{60,000 - 30,000}{60,000} \times 100 = \frac{30,000}{60,000} \times 100 = 50\% \end{aligned}$$

$$\begin{aligned} \text{Break even point} &= \frac{\text{Fixed Cost}}{\text{P/V ratio}} \\ &= \frac{15,000}{50\%} = \frac{15,000 \times 100}{50} = 30,000 \end{aligned}$$

$$\begin{aligned} \text{Margin of Safety} &= \text{Sales} - \text{Break even sales} \\ &= 60,000 - 30,000 = ₹ 30,000 \end{aligned}$$

(b) The effect of 10% increase in sales

Sales	60,000
Increase 10%	6,000
<u>Total Sales</u>	<u>66,000</u>

Now,

NOTES

$$\begin{aligned} \text{P/V Ratio} &= \frac{\text{Sales} - \text{Variable Cost}}{\text{Sales}} \times 100 \\ &= \frac{66,000 - 33,000}{66,000} \times 100 = \frac{33,000}{66,000} \times 100 = 50\% \end{aligned}$$

$$\begin{aligned}\text{Break even point} &= \frac{\text{Fixed Cost}}{\text{P/V ratio}} \\ &= \frac{15,000}{54.55\%} = \frac{15,000 \times 100}{54.55} = 27,498\end{aligned}$$

$$\begin{aligned}\text{Margin of Safety} &= \text{Sales} - \text{Break even sales} \\ &= 66,000 - 27,498 = 38,502\end{aligned}$$

Illustration – 15

‘M’ Ltd. Manufactures and sells three products *A, B, C* with a sales mix of $33\frac{1}{3}\%$, $16\frac{2}{3}\%$ and 50% respectively. The total budgeted sales during the month of December 2014 is ₹ 2,00,000 (2,000 units). The following are the operating costs:

Fixed cost	₹ 50,000
Variable cost	A 70% of sales
	B 60% of sales
	C 65% of sales.

Calculate Break even point for the products on an overall basis. What will be the *BEP* if the sales mix is changed as follows:

A 33.33%, B 33.33% and C 33.33% in change worth trying.

Solution:

Marginal cost statement of given sales:

<i>Particulars</i>	<i>Amount</i>
Total sales	2,00,000

Less: Variable cost

$$A = 2,00,000 \times \frac{33.33}{100} \times \frac{70}{100} = 46,662$$

$$B = 2,00,000 \times \frac{16.67}{100} \times \frac{60}{100} = 20,004$$

$$C = 2,00,000 \times \frac{50}{100} \times \frac{65}{100} = 65,000$$

	1,31,666
Contribution	68.334

NOTES

$$= \frac{68,334}{2,00,000} \times 100 = 34.17\%$$

$$= \frac{50,000}{34.17\%} = \frac{50,000 \times 100}{34.17} = 1,46,327$$

<i>Particulars</i>	<i>Amount</i>
Total sales	2,00,000
<i>Less:</i> Variable cost	

$$C = 2,00,000 \times \frac{33.33}{100} \times \frac{65}{100} = 43,329$$

$$= \frac{70,013}{2.00.000} \times 100 = 35\%$$

$$= \frac{50,000}{35\%} = \frac{50,000 \times 100}{35} = 1,42,857$$

P/V ratio has been increase 34.17% to 35% as sales mix is changed. Hence, for the company sales mix is important.

NOTES

Illustration – 16

A retail dealer in a garment is currently selling 24,000 shirts annually. He supplies the following details for the year ended 31 December 2014.

Selling price per shirt ₹ 400

Variable cost per shirt ₹ 250

Fixed Cost:

(a) Salaries for the year ₹ 12,00,000

(b) General office costs for the year ₹ 8,00,000

(c) Advertising cost for the year ₹ 4,00,000

From the above details:

- Calculate break-even point and margin of safety in sales revenue and number of shirts sold.
- Assume that 20,000 shirts were sold in a year and find out the net profit of the firm.
- If it is decided to introduce selling commission of ₹ 30 per shirt, how many shirts would require to be sold in a year to earn a net income of ₹ 1,50,000?
- Assuming that for the year 2015, an additional staff cost of ₹ 3,30,000 is anticipated and price of a shirt is likely to be increased by 15%, what should be break-even point in number of shirts and sales volume?

Solution:

(a) Breakeven point and margin of safety in sales revenue and number of shirts sold:

$$(i) \text{ BEP (in units)} = \frac{\text{Fixed cost}}{\text{Contribution/Unit}} = \frac{24,00,000}{150} = 16,000 \text{ Shirts}$$

$$\text{Fixed cost} = 12,00,000 + 8,00,000 + 4,00,000 = 24,00,000$$

$$\text{Contribution/unit} = \text{SP/unit} - \text{VC/unit} = 400 - 250 = 150$$

$$(ii) \text{ Breakeven sales (value)} = 16,000 \text{ shirts} \times 400 = ₹ 64,00,000 \text{ or}$$

$$\text{BEP (Value)} = \frac{\text{Fixed cost}}{37.5\%} = \frac{24,00,000}{37.5\%} = 64,00,000$$

$$\text{PV ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{150}{400} \times 100 = 37.5\%$$

$$(iii) \text{ Margin of safety (in units)} = \text{Actual} - \text{Breakeven Sales}$$

$$= 24,000 \text{ shirts} - 16,000 \text{ shirts}$$

$$= 8,000 \text{ Shirts}$$

$$(iv) \text{ Margin of safety (value)} = 8,000 \text{ shirts} \times ₹ 400 = ₹ 32,00,000$$

(b) Net profit when 20,000 shirts were sold:

NOTES

$$\begin{aligned} \text{Sales} &= \frac{\text{Fixed cost} + \text{Desired Profit}}{\text{P/V Ratio}} \\ (20,000 \text{ shirts} \times 400) &= \frac{24,00,000 + \text{Desired Profit}}{37.5\%} \\ 80,00,000 \times 37.5\% &= 24,00,000 + \text{Desired profit} \\ 30,00,000 &= 24,00,000 + \text{Desired profit} \\ \text{Desired profit} &= 30,00,000 - 24,00,000 = 6,00,000 \end{aligned}$$

(c) Sales when profit is ₹ 1,50,000 and increase in variable cost (selling commission)

$$\begin{aligned} \text{Sales} &= \frac{\text{Fixed cost} + \text{Profit}}{\text{New P/V ratio}} \\ \text{New PV Ratio} &= \frac{\text{Sales} - \text{New Variable Cost}}{\text{Sales}} \times 100 \\ &= \frac{400 - 280}{400} \times 100 = 30\% \\ \text{Sales} &= \frac{24,00,000 + 1,50,000}{30\%} \\ &= \frac{25,50,000}{30\%} = 85,00,000 \\ \text{No. of shirts sold} &= \frac{85,00,000}{400} = 21,250 \text{ shirts} \end{aligned}$$

(d) Breakeven point in number of shirts and sales volume when fixed cost is increased by ₹ 3,30,000 and selling price by 15%

$$\text{New selling price} = ₹ 400 + 15\% = ₹ 460$$

$$\text{New fixed cost} = ₹ 24,00,000 + ₹ 3,30,000 = ₹ 27,30,000$$

$$\text{New contribution/Unit} = \text{New SP} - \text{VC} = 460 - 250 = 210$$

$$\begin{aligned} \text{BEP (in units)} &= \frac{\text{New fixed cost}}{\text{New contribution/unit}} \\ &= \frac{27,30,000}{210} = 13,000 \text{ shirts} \end{aligned}$$

NOTES

13.4 SUMMARY

Marginal costing is based on the distinction between fixed cost and variable cost. Only variable cost is applied to products. All fixed cost is written off to the profit and loss account. Even the semi-variable costs are for this purpose segregated into fixed and variable components. It makes a basic assumption that excess of selling price over variable cost provides a fund to meet firstly the fixed costs and then to provide company's profit.

A fixed cost is one which remains unchanged in total amount over a wide range of production level e.g., building rent, permanent staffs salaries etc. Fixed cost per unit will vary with a change in the volume of output. According to ICMA, London "a cost which tends to be unaffected by variations in volume of output".

Variable cost per unit remains constant while the total amount of variable cost changes in direct proportion to changes, in the level of production e.g. Raw materials consumed. According to ICMA, London, "variable cost is a cost which tends to vary directly with volume of output".

Cost is not necessarily either fixed or variable. Some costs increase with the increase in the volume of production but not in the same proportion, e.g. Supervisory salaries. According to ICMA, London, "a cost which is partly fixed and partly variable".

Profit of an organization depends on the some numerous factors such as (i) selling price of the product (ii) cost of producing those products and (ii) volume of sales. There is a close relationship between these three factors and in fact, they are interdependent, e.g., selling price to a greater extent will depend upon the costs; total sales depend on total output and cost and output are again interdependent. Hence, there is a close relationship between cost, volume and profit.

Profit volume ratio is established the relationship between contribution and sales. It is another method used to calculate the cost volume profit relationship is P/V ratio. It helps for studying the profitability of operations of a business. This ratio sometimes is referred as "marginal income ratio" or "contribution to sale ratio".

Breakeven point represents the level of activity where the total cost is equal to total revenue. It is a point of "no Profit no Loss" and at this level, firm is said to break even. Firm will earn profits, it attains, a levels of activity higher than this point. Activity below the breakeven point results into losses.

13.5 GLOSSARY

NOTES

- (a) **Marginal costing:** Marginal costing is based on the distinction between fixed cost and variable cost. Only variable cost is applied to products. All fixed cost is written off to the profit and loss account.
- (b) **Fixed Cost:** A fixed cost is one which remains unchanged in total amount over a wide range of production level e.g., building rent, permanent staffs salaries etc. Fixed cost per unit will vary with a change in the volume of output.
- (c) **Variable Cost:** Variable cost per unit remains constant while the total amount of variable cost changes in direct proportion to changes, in the level of production e.g. Raw materials consumed.
- (d) **Semi Variable Cost:** Cost are not necessarily either fixed or variable. Some costs increase with the increase in the volume of production but not in the same proportion, e.g. Supervisory salaries. According to ICMA, London, “a cost which is partly fixed and partly variable”.
- (e) **Profit volume ratio:** Profit volume ratio establishes the relationship between contribution and sales. It is another method used to calculate the cost volume profit relationship is P/V ratio. It helps for studying the profitability of operations of a business. This ratio sometimes is referred as “marginal income ratio” or “contribution to sale ratio”.
- (f) **Breakeven point:** Breakeven point represents the level of activity where the total cost is equal to total revenue. It is a point of “no Profit no Loss” and at this level, firm is said to break even. Firm will earn profits, it attains, a levels of activity higher than this point. Activity below the breakeven point results into losses.

13.6 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What is P/V ratio?
2. What is break even analysis?
3. What do you mean by breakeven point?
4. Expand BEP.
5. What is break even chart?
6. What is margin safety?

NOTES

(B) Extended Answer Questions

1. What are the main objectives of marginal costing?
2. Explain cost, volume and profit relationship.
3. State the advantages and disadvantages of marginal costing.
4. Explain the applications of marginal costing.

(C) True or False

1. Marginal costing is based on the distinction between fixed cost and variable cost.
2. Fixed cost is one which remains unchanged in total amount over a wide range of production level e.g., building rent, permanent staffs salaries etc.
3. Variable cost per unit remains constant while the total amount of variable cost changes in direct proportion to changes, in the level of production.
4. Profit volume ratio establishes the relationship between contribution and sales.
5. Breakeven point represents the level of activity where the total cost is equal to total revenue.

(D) Multiple Choice Questions

1. What is based on the distinction between fixed cost and variable cost?
(a) Marginal costing (b) Cost Accounting
(c) Variable Cost (d) None of the above
2. What is one which remains unchanged in total amount over a wide range of production level e.g., building rent, permanent staffs salaries etc?
(a) Fixed cost (b) Variable cost
(c) Profit volume ratio (d) All the above
3. Which of the following establishes the relationship between contribution and sales?
(a) Fixed cost (b) Variable cost
(c) Profit volume ratio (d) All the above

(E) Fill in the Blanks**NOTES**

1. Marginal costing is based on the distinction between fixed cost and.....
2.is one which remains unchanged in total amount over a wide range of production level e.g., building rent, permanent staffs salaries etc.
3.per unit remains constant while the total amount of variable cost changes in direct proportion to changes, in the level of production.
4.is established the relationship between contribution and sales.
5. Breakeven point represents the level of activity where the total cost is equal to.....

13.7 KEY TO CHECK YOUR ANSWER

- (C) 1. True, 2. True, 3. True, 4. True, 5. True
- (D) 1. (a), 2. (a), 3. (c)
- (E) 1. Variable cost, 2. Fixed cost, 3. Variable cost, 4. Profit volume ratio, 5. Total revenue

13.8 BIBLIOGRAPHY

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NOTES

13.9 SUGGESTED READINGS

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13.10 TERMINAL QUESTIONS

1. "Profit of an organization depends on the some numerous factors." Discuss.

UNIT 14

BUDGETING

Structure:

- 14.1 Introduction
- 14.2 Cocept of Budgeting
- 14.3 Budgetary Control
- 14.4 Preparation of Various Budgets
- 14.5 Zero-base Budgeting
- 14.6 Summary
- 14.7 Glossary
- 14.8 Check Your Progress (Multiple Choice/Objective Type Questions)
- 14.9 Key to Check Your Answer
- 14.10 Bibliography
- 14.11 Suggested Readings
- 14.12 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Budget
- Budgetary Control
- Framework for Budgeting
- Performance Budgeting
- Zero-Base Budgeting

NOTES

14.1 INTRODUCTION

Budgetary control refers to how well managers utilize budgets to monitor and control costs and operations in a given accounting period. In other words, budgetary control is a process for managers to set financial and performance goals with budgets, compare the actual results, and adjust performance, as it is needed.

14.2 COCEPT OF BUDGETING

Budgeting refers to the procedure followed to prepare the budget. In other words the procedure for preparing plan in respect of future financial and physical requirement. Thus, budgeting is a forward planning and involves the preparation in advance of the quantitative as well as financial statement to indicate the intention of the management in respect of various aspects of business. In the words of W.J. Vatter “Budgeting is a kind of future accounting in which the problems of future are met on the paper before the transaction actually occurs.

Functions of Budgeting

The basic purpose of budgeting is to assist management in its main functions. The main functions are planning, co-ordination and control. The other functions are:

1. To provide a means of evaluating the performance of different budget centres. This can be done by comparing the actual with the budgeted results.
2. To provide a comprehensive plan of action in the form of guidance to departmental heads to achieve the budgeted results.
3. To communicate to different hands of budget centres about what they are required to achieve during a budget period, to ensure the accomplishment of the targeted results.
4. To create definite ideas about the long term & short term desired aims and objectives of the enterprise.

14.3 BUDGETARY CONTROL

The word ‘control’ refers to a systematic and an organised effect to keep the costs under control and the revenue at the high level.

It aims at mobilisation and utilisation of available resources more efficiently, productively and effectively to achieve the targets set for the period.

The ICMA England has defined the budgetary control as “establishment of a policy and the continuous comparison of actual with budgeted results either to secure by individual action the objects of that policy or a basis for a re-union”.

NOTES**Features of Budgetary Control**

1. Preparation of budgets in advance for a future period.
2. Measurement of actual performance at the end of the budgeted period.
3. Comparison of actual performance with the budgeted performance to find out whether the company has achieved the target set in the budget.
4. Analysis of the reason for not achieving the target, so that correcting measures may be taken.

Advantage of Budgetary Control

1. Co-ordination is established among the different departments and individuals through planning, policies and control.
2. It acts as a yard stick with which actual are compared & necessary corrections can be made, so that it promotes efficiency and there by helps the management for taking future course of action.
3. It helps the management to review the performance of different budget centres both continuously and periodically.
4. It creates a healthy competition among various divisional managers. It ensures the optimum utilisation of available resources to achieve the goals.
5. It provides valuable aids to the management by several managerial functions and thus helps the management to adopt the future course of action in a scientific way.
6. The top management can exercise control over the various activities of the business, since each and every aspect of the business is reviewed.
7. It facilitates introduction of standard costing.
8. It ensures effective and efficient usage of resources.

Limitations of Budgetary Control

1. This system proves useless in those firms where policies, processes, techniques etc. are frequently changing since it does not take into account such changes.
2. Budgets are based on estimates. If forecasts are made on the basis of inadequate and in accurate data, budgeted figures would be far away from realities. The targets set would also be in accurate.

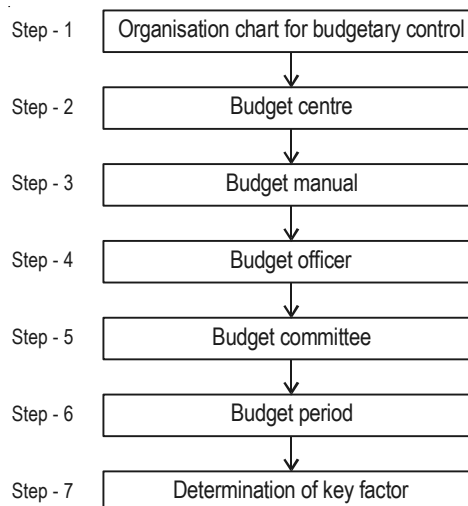
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3. Budgets clearly specifies the targets and ways through which targets can be achieved, mere preparation of budgets will not ensure the desired result.
4. There are many factors over which the management has no control but the budgetary control system depends on them. In such a case it may be inaccurate and fails to serve the purpose for which it is meant.
5. Budgeting is an expensive tool. It involves expenditure which small concerns may not afford.
6. Budgets are not substitute for management.

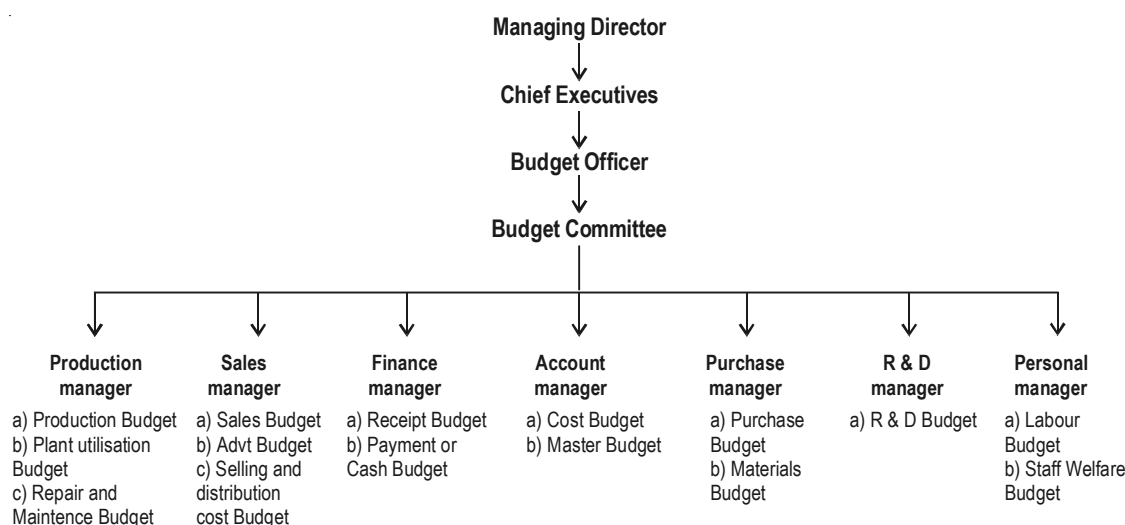
Steps in Budgetary Control

There are certain steps which are necessary for the successful implementation of a budgetary control.

They are as follows –



It throws light on the functional responsibilities of each member of the team, so that he/she can be acquainted with his/her own position in the organisation and also his/her relationship with other members. The structural pattern of the organisation chart depends upon the size & nature of business with.

Step-1: Organisation on Chart for Budgetary Control

The chief executive is the overall in charge of budgetary system. He/she constitutes a budget committee. A budget officer is the convener of the budget committee who co-ordinate the budgets of different departments. The manager of different departments are made responsible for their departmental budgets.

Step-2: Budget Centre

A budget centre is that part of the organisation for which the budget is prepared. A budget centre may be a department, section of a department or any other part of the department. The establishments of budget centres is essential for covering all parts of the organisation. The budget centres are necessary for cost control purpose.

Step-3: Budget Manual

A budget manual is a document which spells out the duties and also the responsibilities of the various executives concerned with the budgets. It specifies the relations among various functionaries.

Step-4: Budget Officer

The chief executive who is at the top of the organisation appoints some person as budget officers. He/she is empowered to scrutinise the budgets prepared by different heads and to make changes in their if the situation demands. The actual performance of different department is communicated to the budget officer.

Step-5: Budget Committee

A budget committee is a group of executives of various major functions. *Example:* General manager, Factory Manager, Productions Manager, Sale Manager, Accountant etc. General Manager acts as a chairman and the functional managers will prepare their respective budgets and submit them to the committee for approval. The committee will make necessary changes and co-ordinate all the budgets and ultimately approve them.

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In small scale concerns, the accountant is made responsible for preparation and implementation of budgets.

Step-6: Budget Period

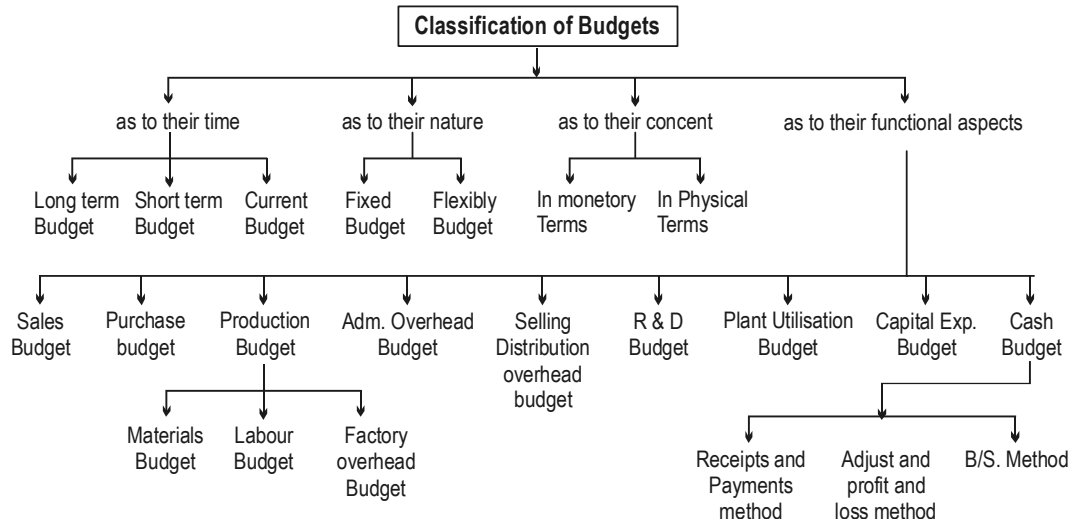
A budget period is the length of time for which budget is prepared. It depends upon a number of factors. It differs from industries to industries. A capital expenditure budget may be for a longer period i.e. 3 to 5 years. Purchase, sale budget may be for one year.

Determinations of Key Factor

The budgets are prepared for all functional areas. These budgets are inter-dependent and inter-related. A proper co-ordination among different budgets is necessary to make a budgetary control. Example, there may be a high demand for a particular product, but due to non-availability of the supply of raw materials, production may have to be restricted and this factor is known as key factor. It is highly significant during budgeting for production or sale. There may be several key factors such as labour, capital, management, sales, etc.

Classification of Budgets

Budgets can be classified according to their time, their content, their nature and their financial aspects.

**1. On the basis of Time**

- (a) **Long-term budgets:** These budgets are prepared for long-term planning of the business which varies between 5 to 10 years. It is done by the top level management, which is generally not known to lower levels of management. *Example:* Capital expenditure, R & D, Long-term finance etc.

- (b) **Short-term budget:** These budgets are generally for one or two years and are in the form of monetary terms.
- (c) **Current budget:** These budgets are generally of months and weeks. It relates to the current activities of the business.

2. On the basis of Nature

- (a) **Fixed budget:** Fixed budget are those which are prepared on the basis of fixed or given level of activity. It does not make any change even if the level of activity changes in comparison with the budget.
- (b) **Flexible budget:** Flexible budget are those which may frequently change according to the level of activity.

3. On the basis of their Content

- (a) **Budget in monetary term:** Budgets may be expressed in monetary terms i.e. in rupee terms, e.g. Cash, capital expenditure budget etc.
- (b) **Budget in physical term:** Budget may also be prepared in physical terms e.g. Material budget, production budget etc.

4. On the basis of their Functions

These budgets relate to the different activities or operations of a firm. The number of such budgets depends upon the size and nature of business.

Master budget: Various functional budgets are integrated into master budget. This budget is prepared by the ultimate integration of separate functional budgets.

According to ICWA, London “The master budget is the summary budget incorporating its functional budgets”. This budget is used to co-ordinate the activities of various functional departments and also act as a control device.

Functional Budgets

Preparation of important functional budgets is given in the following pages:

Sales Budgets

Sales budgets is a forecast of total sales expressed in quantities and money. It is the sales manager who prepares the sales budget. In almost all organizations, it is sales budgets which holds the key for the success of all other budgets. While preparing the sales budgets, the following factors should be considered:

1. Past sales data.
2. Market conditions.

NOTES

3. General trade and business conditions.
4. Advertisement campaign.
5. Reports of salesmen.

Selling and Distribution Cost Budget

This is the forecast of selling and distribution expense during the budget period. This is inter-related with sales budget because it is based on the quantity of sales estimated as per the sales budget.

Production Budget

Production budget is usually based on the sales budget and the desired inventory levels. It is the forecast of the quantity of production for the budget period. Production budget is usually expressed in the physical quantity –units of output, material requirements and labour requirements.

Production may be computed as follows:

Units to be produced = Budgets sales + desired closing stock of finished goods - opening stock of finished goods.

Thus, Production budget shows the units that must be produced to meet anticipated sale.

Production Cost Budget

It is a forecast of the cost of production as per the production budget. It expresses the physical quantity of the Production budget in terms of money. It shows cost broken into elements-material,labour and overheads. Thus ,Production cost budget is based upon the production budget, material budget, labour budget and manufacturing overhead budgets.

Materials Budget

A material budget shows the estimated quantities as well as cost of raw material required for the production of different products during the budgets period. This budget also helps in determining the requirements of raw materials at maximum and minimum levels.

Purchased Budget

This shows the quantity of different type of materials to be purchased during the budget period taking into consideration the level of activity and the inventory levels.

Labour Budget**NOTES**

It is the forecast of the labour requirements during the budget period. Generally, the labour budget shows the requirements of direct labour indirect labour requirements are included in the manufacturing expense budget. labour budgets enable the personnel department to plan ahead in recruitment, selection and training of labourers.

Productions Overhead Budget

It represents the forecast of all production overheads to be incurred during the budget period. This budget includes the cost of indirect material, indirect labour and indirect work expenses. It may be classified into fixed cost, variable cost and semi-variable cost.

14.4 PREPARATION OF VARIOUS BUDGETS

Cash Budget

Cash budgeting is the process of forecasting the expected receipts (in flows) and expected payments (out flow) of cash to meet the future obligations. The budget showing the various estimates regarding receipt and payment for a particular period is called cash budget. In other words, cash budget is a mere forecast of cash position of an undertaking for a definite period.

Illustration – 1

From the following information, prepare a cash budget for 3 months ending 30.9.2014.

<i>Month</i>	<i>Sales</i> ₹	<i>Purchases</i> ₹	<i>Wages</i> ₹	<i>Expenses</i> ₹
June 2014	2,00,000	1,30,000	20,000	10,000
July 2014	1,50,000	1,40,000	30,000	10,000
Aug. 2014	2,50,000	1,60,000	20,000	15,000
Sep. 2014	2,20,000	1,80,000	15,000	15,000

Additional Information:

1. Opening cash balance on 1st July is ₹ 60,000.
2. Debtors (Cr. Sales) pays in the month of following the month of sales.
3. Creditors (purchases) are paid in the month, following the month of purchases.
4. Expenses are paid in the same month. Assume that wages are paid on monthly basis on the first of very next month.

Solution:**Cash Budget**

	<i>July</i>	<i>August</i>	<i>September</i>
Receipts:			
Opening Balance	60,000	1,00,000	65,000
Collections from Debtors	2,00,000	1,50,000	2,50,000
Total Receipt	2,60,000	2,50,000	3,15,000
Less: Payments:			
Creditors	1,30,000	1,40,000	1,60,000
Wages	20,000	30,000	20,000
Expenses	10,000	15,000	15,000
Total Payment	1,60,000	1,85,000	1,95,000
Closing Balance	1,00,000	65,000	1,20,000

Illustration – 2

Archita Co. wishes to arrange overdraft facilities with its bankers during the period April to June 2014, when it will be manufacturing mostly for stock. Prepare a cash budget for the above period from the following data, indicating the extent of the bank facilities the company will require at the end of each month.

<i>2014</i>	<i>Sales</i>	<i>Purchases</i>	<i>Wages</i>
February	1,80,000	1,24,800	12,000
March	1,92,000	1,44,000	14,000
April	1,08,000	2,43,000	11,000
May	1,74,000	2,46,000	10,000
June	1,26,000	2,68,000	15,000

Additional Information:

- 50% of credit sales are realised in the month following sales and the remaining 50% in the second month following.
- Creditors are paid in the month, following the month of purchase.
- Estimated cash at bank on 1st April 2014 ₹ 50,000.

Solution:**Cash Budget**

<i>Items</i>	<i>April</i>	<i>May</i>	<i>June</i>
Opening balance	50,000	81,000	–22,000
Add: Receipts:			
Cash collected from debtors	1,86,000	1,50,000	1,44,000
(A) Total receipt	2,36,000	2,31,000	1,22,000

Less: Payments:

Purchases	1,44,000	2,43,000	2,46,000
Wages	11,000	10,000	15,000
(B) Total payment	1,55,000	2,53,000	2,61,000
Closing balance (A – B)	81,000	(–22,000)	(–1,39,000)
Overdraft needed	–	–22,000	–1,39,000

Working Note on Collection From Debtors:

April – 50% of February + 50% of March.

May – 50% of March + 50% of April

June – 50% of April + 50% May.

Illustration - 3

‘Aditri Ltd wants you to prepare the cash budget of the company for 3 months from April to June 2013. You are given the following information.

<i>Month</i>	<i>Credit Sales</i> ₹	<i>Credit Purchase</i> ₹	<i>Wages –</i> ₹	<i>Selling Expenses</i> ₹	<i>Overhead –</i> ₹
January	1,60,000	85,000	32,000	8,000	10,000
February	1,85,000	92,000	37,000	9,500	11,500
March	2,10,000	1,00,000	42,000	10,500	13,000
April	2,45,000	1,20,000	49,000	12,500	14,500
May	1,78,000	90,000	35,000	8,900	10,500
June	1,82,000	98,000	36,000	9,000	11,000

Additional information:

1. Periods of credit allowed to debtors 2 months.
2. Period allowed by creditors – 1 month.
3. Lag in payment of wages, selling expenses and overhead one month
4. Expected cash sales ₹ 15,000 P. M.
5. Expenditure on machinery is payable in April ₹ 50,000
6. Expected cash balance in April ₹ 10,500

Solution:**Cash Budget**

<i>Items</i>	<i>April</i>	<i>May</i>	<i>June</i>
Opening balance	10,500	–5,000	24,000
Add: Receipts			
Cash sales	15,000	15,000	15,000
Collection from Debtors	1,85,000	2,10,000	2,45,000
(A) Total receipt	2,10,500	2,20,000	2,84,000
Less: Payments			
Payments to creditors	1,00,000	1,20,000	90,000
Wages	42,000	49,000	35,000

Selling expenses	10,500	12,500	8,900
Overhead	13,000	14,500	10,500
Purchase of Machinery	50,000	—	—
(B) Total payment	2,15,500	1,96,000	1,44,400
∴ Closing balance (A – B)	–5,000	24,000	1,39,600

Illustration - 4

The following particulars extracted from the books of a company for the quarter ending 31-3-2014.

Opening balance of Cash on 1-1-14 ₹ 30,000

	<i>Sales Budget</i>	<i>Purchase Budget</i>
Nov 2013	80,000	-
Dec. 2013	90,000	60,000
Jan. 2014	75,000	55,000
Feb. 2014	75,000	45,000
March 2014	80,000	55,000

Analysis of records shows that the debtors settle according to the following pattern 60% within the month of sale, 25% the following month, 15% the month following.

All the purchases are on credit and the past experience show that 90% are settled in the month of sales and the balance in the month following. Calculate sales revenue and payment to suppliers.

Solution:**Preparation of cash budget for Jan, Feb and March - 2014**

<i>A Sales Receipts</i>	<i>Jan</i>	<i>Feb</i>	<i>March</i>
I Receipts	45,000	45,000	48,000
II Receipts	22,500	18,750	18,750
III Receipts	12,000	13,500	11,250
A =	79,500	77,250	78,000
B. Purdued budget			
I payment	49,500	40,500	49,500
II payment	6,000	5,500	4,500
B =	55,500	46,000	54,000
C. Balance cash available (A – B)	24,000	31,250	24,000
D. Opening balance	30,000	54,000	85,250
E. Closing balance	54,000	85,250	1,09,250

Illustration – 5

A company is expecting to have ₹ 16,000 cash in hand on 1-4-2015 and it requests you to prepare cash budget for the three months, April to June 2015. The following information is supplied to you:

<i>Month</i>	<i>Sales (₹)</i>	<i>Purchase (₹)</i>	<i>Wages (₹)</i>	<i>Expenses (₹)</i>
February	35,000	22,000	3,000	2,500
March	40,000	28,000	4,500	3,000
April	48,000	30,000	4,500	3,500
May	50,000	34,000	5,500	4,500
June	60,000	31,000	7,000	4,500

Other information:

- Period of credit allowed by suppliers is two months.
- 25% of sales is for cash and the period of credit allowed to customers for credit sales is one months.
- Delay in payment of wages and expenses and expenses one month.
- Income tax ₹ 14,000 is to be paid in June 2015.

Solution:

Cash Budget for April to June 2015

	April	May	June
Opening balance	16,000	28,500	41,000
Add: Receipts			
Cash sales (25%)	12,000	12,500	15,000
Collection from DRS	30,000	36,000	37,500
Total (A)	58,000	77,000	93,500
Less: Payments			
Suppliers	22,000	28,000	30,000
Wages	4,500	4,500	5,500
Expenses	3,000	3,500	4,500
Income	—	—	14,000
Total (B)	29,500	36,000	54,000
Closing Balance (A – B)	28,500	41,000	39,500

Illustration – 6

A newly formed company desires to prepare a cash budget for 4 months from March to June 2014. The following information is available.

<i>Months</i>	<i>Sales (₹)</i>	<i>Purchases (₹)</i>	<i>Wages (₹)</i>	<i>Overhead (₹)</i>
Jan	20,000	20,000	4,000	4,000
Feb	22,000	14,000	4,400	4,200

NOTES	March	28,000	14,000	4,600	4,300
	April	36,000	22,000	4,600	4,500
	May	30,000	20,000	4,000	4,100
	June	40,000	25,000	5,000	4,800

Additional Information:

- Cash balance on 1st March 2014 ₹ 10,000.
- New machinery is to be installed at a cost at ₹ 20,000 in the month of February which is to be paid in two equal instalments in March and April.
- ₹ 12,000 is to be collected in March as 2nd call money.
- Period of credit allowed by creditors is 2 months and allowed to customers 1 month.
- 50% of sales and purchases are for cash.
- Delay in payment of wages $\frac{1}{2}$ month overheads are paid in the same month.

Solution:**Cash Budget for four months from March to June**

	<i>March</i>	<i>April</i>	<i>May</i>	<i>June</i>
Opening Balance	10,000	11,200	6,100	9,700
Add: Receipts				
Cash Sales	14,000	18,000	15,000	20,000
Credit sales of 50% of Previous month	11,000	14,000	18,000	15,000
Call money	12,000	-	-	-
Total Receipts (A)	47,000	43,200	39,100	44,700
Less: Payments				
Cash purchase 50%	7,000	11,000	10,000	12,500
50% Credit purchase	10,000	7,000	11,000	10,000
Purchase of New machinery	10,000	10,000	-	-
Payment of wages $\frac{1}{2}$ month	4,500	4,600	4,300	4,500
Overhead same month	4,300	4,500	4,100	4,800
Total payment (B)	35,800	37,100	29,400	31,800
Closing Balance (A – B)	11,200	6,100	9,700	12,900

Working Notes:

Calculation of wages:

For March = $\frac{1}{2}$ of Feb. + $\frac{1}{2}$ of March

= 2,200 + 2,300 = 4,500

For April = $\frac{1}{2}$ of March + $\frac{1}{2}$ of April
 = 2,300 + 2,300 = 4,600

For May = $\frac{1}{2}$ of April + $\frac{1}{2}$ of May
 = 2,300 + 2,000 = 4,300

For June = $\frac{1}{2}$ of May + $\frac{1}{2}$ of June
 = 2,000 + 2,500
 = 4,500

NOTES

Illustration – 7

A company expects to have ₹ 25,000 in bank on 1st May 2014 and requires you to prepare an estimate of cash position during the three months - May, June and July 2014.

The following information is supplied:

<i>Month</i>	<i>Sales</i>	<i>Purchases</i>	<i>Wages</i>	<i>Office Expenses</i>	<i>Factory Expenses</i>	<i>Selling Expenses</i>
	₹	₹	₹	₹	₹	₹
March	50,000	30,000	6,000	4,000	5,000	3,000
April	56,000	32,000	6,500	4,000	5,500	3,000
May	60,000	35,000	7,000	4,000	6,000	3,500
June	80,000	40,000	9,000	4,000	7,500	4,500
July	90,000	40,000	9,500	4,000	8,000	4,500

Other Information:

- 20% of sales are in cash, remaining amount is collected in the month following that of sales.
- Suppliers supply goods at two month's credit.
- Wages and all other expenses are paid in the month following the one in which they are incurred.
- The company pays dividends to shareholders and bonus to workers of ₹ 10,000 and ₹ 15,000 respectively in the month of May.
- Plant has been ordered and is expected to be received in June. It will cost ₹ 80,000 to be paid in June.
- Income tax ₹ 25,000 is payable in July.

Solution:

<i>Particulars</i>	<i>May</i>	<i>June</i>	<i>July</i>
Opening balance	nil	nil	nil
Add: Receipts			
Opening balance	25,000	7,800	(60,700)
Cash Sales	12,000	16,000	18,000

Receipts from debtors	44,800	48,000	64,000
Total receipts (A)	81,800	71,800	21,300
Less: Payments			
Purchase	30,000	32,000	35,000
Wages	6,500	7,000	9,000
Office Expenses	4,000	4,000	4,000
Factory expenses	5,500	6,000	7,500
Selling expenses	3,000	3,500	4,500
Paid dividend	10,000	-	-
Bonus	15,000	-	-
Plant	-	80,000	-
Income tax	-	0	25,000
Total Payments (B)	74,000	1,32,500	85,000
Closing balance (A – B)	7,800	(60,700)	(63,700)

Illustration – 8

From the following budgeted figures prepare a cash budget in respect of three months to June 30th 2015.

<i>Month</i>	<i>Sales (₹)</i>	<i>Purchases (₹)</i>	<i>Wages (₹)</i>	<i>Overheads</i>
Jan	30,000	20,000	5,500	3,100
Feb	28,000	24,000	5,800	3,300
March	32,000	25,000	6,000	3,400
April	40,000	28,000	6,200	3,600
May	42,000	31,000	6,500	4,300
June	38,000	25,000	7,000	4,000

Other Information:

1. Estimated cash balance on April 1st 2015 ₹ 10,000.
2. Materials and overheads are paid during the month following the month of supply. Wages are paid during the month.
3. Credit items of sales are paid by the end of the month following the month of sales. It is estimated that one half of sales are paid when due, the other half being paid during the next month.
4. A sales commission of 5% on sales is to be paid within the month following actual sales.
5. Preference share dividend of 10% on capital of ₹ 3,00,000 is to be paid on May 1, 2015.

6. Plant and Machinery to be installed in May at a cost of ₹ 10,000 will be payable on 1st June 2015.
7. 10% calls on equity share capital of ₹ 2,50,000 are due on April 1st and June 1st 2015.

Solution:

Calculation of amount received from debtors

<i>April</i>		<i>May</i>		<i>June</i>	
1/2 of March sales	16,000	1/2 of April sales	20,000	1/2 of April sales	20,000
1/2 of Feb sales	14,000	1/2 of March sales	16,000	1/2 of May sales	21,000
	30,000		36,000		41,000

Cash Budget for the months April, May and June 2015

	<i>April (₹)</i>	<i>May (₹)</i>	<i>June (₹)</i>
Receipts:			
Opening Balance	10,000	28,800	(5,300)
Sales (Drs.)	30,000	36,000	41,000
Capital	25,000	—	25,000
Total Receipts	65,000	64,800	60,700
Payments			
Materials	25,000	28,000	31,000
Wages	6,200	6,500	7,000
Overheads	3,400	3,600	4,300
Sales Commission	1,600	2,000	2,100
Preference dividend	—	30,000	—
Plant and Machinery	—	—	10,000
Total Payment	36,200	70,100	54,400
Closing balance	28,800	(5,300)	6,300

Illustration – 9

A company has the opening balance of cash ₹ 37,500 on 1–4–15 and requires you to prepare a Cash Budget for 3 months April – June 2015. The following information is supplied to you.

<i>Month</i>	<i>Sales ₹</i>	<i>Purchases ₹</i>	<i>Wages ₹</i>	<i>Overheads ₹</i>
February	75,000	45,000	9,000	18,000
March	84,000	48,000	9,750	18,750
April	90,000	52,500	10,500	20,250
May	1,20,000	60,000	13,500	23,820
June	1,35,000	60,000	14,250	28,000

NOTES

Other Informations:

1. Period of credit allowed by suppliers – 2 months.
2. 20% of sales is for cash and period of credit allowed to customers for credit sales is one month.
3. Delay in payment of all expense – 1 month
4. Income tax of ₹ 57,500 is due to be paid on 15th June 2015.
6. The company is to pay dividends to share holders and Bonus to workers of ₹ 15,000 and ₹ 22,500 respectively in the month of April.
6. Plant has been ordered to be received and to be paid in May ₹ 1,20,000.

Solution:

Cash Budget

Items	April ₹	May ₹	June ₹
Opening balance	37,500	11,700	91,050(Cr)
Add: Receipts			
(20%) Cash sales			
(80%) Collection from debtors	85,200	96,000	1,23,000
(A) Total Receipts	1,22,700	1,07,700	31,950
Less: Payments			
Purchases	45,000	48,000	52,500
Wages	9,750	10,500	13,500
Overheads	18,750	20,250	23,820
Dividends	15,000	—	—
Bonus	22,500	—	—
Plant	—	1,20,000	—
Income-tax	—	—	57,500
(B) Total payment	1,11,000	1,98,750	1,47,320
∴ Closing balance (A–B)	11,700	91,050	1,15,370
		(Cr)	(Cr)
Over draft needed	N.L	(–) 91,050	(–)1,15,370

Working note:

Collection from debtors

		April	May	June
(1) April				
(a) Cash Sales	$90,000 \times \frac{20}{100} = 18,000$	85,200	—	—
(b) Collection from debtors	$84,000 \times \frac{80}{100} = 67,200$			

(2) May**NOTES**

(a) Cash Sales	$1,20,000 \times \frac{20}{100} = 24,000$	} -96,000
(b) Collection from debtors	$90,000 \times \frac{80}{100} = 72,000$	

(3) June

(a) Cash Sales	$1,35,000 \times \frac{20}{100} = 27,000$	} -1,23,000
(b) Collection from debtors	$1,20,000 \times \frac{80}{100} = 96,000$	

85,200 96,000 1,23,000

Flexible Budget

A budget prepared for a range of activities rather than a single level of activity is called flexible budget. It is capable of furnishing the budgeted cash at any level of activity. In order to have a good control through the operation of budgetary control a flexible budget is often established.

Illustration – 10

Mahindra Co. Ltd working at 50% capacity manufactures 10,000 units of a product cost is ₹ 180 and sale price is ₹ 200. The break – up of the cost is as follows –

<i>Cost per unit</i>	₹
Materials	10,000
Wages	3,000
Factory overheads	3,000 (40% fixed)
Administration Overhead	2,000 (50% fixed)

At 60% working, raw – material cost goes up by 2% and sales price falls by 2%. At 80% working, the material cost increase by 5% and sales price decrease by the same percentage i.e. 5%.

Prepare a statement to show profitability at 60% and 80% capacity.

Solution:

<i>Particular</i>	Flexible budget					
	<i>50%</i> <i>(10,000 units)</i>		<i>60%</i> <i>(12,000 units)</i>		<i>80%</i> <i>(16,000 units)</i>	
	<i>Total Amount</i>	<i>Per unit</i>	<i>Total</i>	<i>Per unit</i>	<i>Total Amount</i>	<i>P.Unit</i>
Materials	10,00,000	100	12,24,000	102	16,80,000	105
Wages	3,00,000	30	3,60,000	30	4,80,000	30
Prime cost	13,00,000	130	15,84,000	132	21,60,000	135
Add: Factory Overhead						
60% variable	1,80,000	18	2,16,000	18	2,88,000	18
40% fixed	1,20,000	12	1,20,000	10	1,20,000	7.5
Works cost	16,00,000	160	19,20,000	160	25,68,000	160.5
Add: Office and Administration overhead						
50% variable	1,00,000	10	1,20,000	10	1,60,000	10
50% fixed	1,00,000	10	1,00,000	8.3	1,00,000	6.25
Cost of Production	18,00,000	180	21,40,000	178.3	28,28,000	176.75
Add: Selling and Distribution overheads:	—	—	—	—	—	—
Cost of Sales	18,00,000	180	21,40,000	178.33	28,28,000	176.75
Profit	2,00,000	20	2,12,000	17.67	2,12,000	13.25
Selling price	20,00,000	200	23,52,000	196	30,40,000	190
∴ Profitability	—	10%	—	8.081	—	6.986

Illustration – 11

Zenith Ltd. has prepared the budget for the production of 1,00,000 units from a costing period as under:

	<i>Per Unit (₹)</i>
Raw materials	10.08
Direct labour	3.00
Direct Expenses	0.40
Works overhead (60% fixed)	10.00
Administration overhead (80% fixed)	1.60
Sales overhead (50% fixed)	0.80

Actual production in the period was only 60,000 units. Prepare budgets for the original and revised levels of output.

Solution:

Zenith Ltd.
Flexible Budget for the period.....

<i>Items of cost</i>	<i>Original Budget 1,00,000 Units</i>		<i>Revised Budget 60,000 Units</i>	
	<i>Per Unit ₹</i>	<i>Total ₹</i>	<i>Per Unit ₹</i>	<i>Total ₹</i>
Raw Materials	10.08	10,08,000	10.08	6,04,800
Direct Labour	3.00	3,00,000	3.00	1,80,000
Direct Expenses	0.40	40,000	0.40	24,000
Prime cost	13.48	13,48,000	13.48	8,08,800
Works Overheads:				
Variable 40%	4.00	4,00,000	4.00	2,40,000
Fixed 60%	6.00	6,00,000	10.00	6,00,000
Works cost	23.48	23,48,000	27.48	16,48,800
Administration overheads:				
Variable 20%	0.32	32,000	0.32	19,200
Fixed 80%	1.28	1,28,000	2.13	1,28,000
Cost of production	25.08	25,08,000	29.93	17,96,000
Selling Overheads:				
Variable 50%	0.40	40,000	0.40	24,000
Fixed 50%	0.40	40,000	0.67	40,000
Total Cost	25.88	25,88,000	31.00	18,60,000

Illustration – 12

The expenses for budgeted production of 10,000 in a factory are given bellow:

<i>Particulars</i>	<i>Per Unit ₹</i>
Materials	50
Labour	20
Variable overheads	10
Fixed overhead (₹ 50,000)	5
Variable expenses (Direct)	2
Selling expenses (10% fixed)	10
Distribution expenses (20% fixed)	5
Administration expense (₹ 40,000)	4
Total cost per unit	106

Prepare a flexible budget for production of 8,000 units, indicating each item of cost per unit.

Solution:**Flexible Budget**

Particulars	10,000 units		8,000 unit	
	P/U	Total	P/U	Total
Materials	50	5,00,000	50	4,00,000
Labour	20	2,00,000	20	1,60,000
Variable overheads	10	1,00,000	10	80,000
Fixed over heads	5	50,000	6.25	50,000
Variable Express (Direct)	2	20,000	2	16,000
Selling Expenses				
10% Fixed	1	10,000	1.25	10,000
90% Variable	9	90,000	9	72,000
Distribution Expense				
20% Fixed	1	10,000	1.25	10,000
80% Variable	4	40,000	4	32,000
Administration Expenses	4	40,000	5	40,000
Total Cost	106	10,60,000	108.75	8,70,000

Illustration – 13

The expense for the production of 5000 units in a factory are given as follows:

Particulars	Amount Per unit (₹)
Materials	50
Labour	20
Variable overhead	15
Fixed overhead (₹) 50,000	10
Administrative expenses (5% variable)	10
Selling expense (20% fixed)	6
Distribution expenses (10% Fixed)	5
Total Cost of Sales	₹ 116

Prepare a budget for the production of 7,000 units.

Solution:**Flexible budget for 5,000 and 7,000 units**

Particulars	5,000 units		7,000 units	
	Per unit	Total	Per unit	Total
	₹	₹	₹	₹
Material labour	50	2,50,000	50	3,50,000
Labour	20	1,00,000	20	1,40,000
Prime cost	70	3,50,000	70	4,90,000

Factory overheads:

Variable	15	75,000	15	1,05,000
Fixed (50,000)	10	50,000	7.14	50,000
Factor cost	95	4,75,000	92.14	6,45,000

Administrative expenses

Variable 5% of 10	0.5	2,500	0.5	3,500
Fixed 95% of 10	9.5	47,500	6.78	47,500

Cost of production	105	5,25,000	99.42	6,96,000
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Selling expenses:

Fixed 20% of 6	1.2	6,000	0.85	6,000
Variable 80% of 6	4.8	24,000	4.8	33,600

Distribution overhead:

Fixed 10% of 5	0.5	2,500	0.36	2,500
Variable 90% of 5	4.5	22,500	4.5	31,500

Total cost of sales	116	5,80,000	109.93	7,69,600
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Illustration – 14

The expenses for budgeted production of 10,000 units in a factory are given below:

	<i>Per unit ₹</i>
Materials	70.00
Labour	25.00
Variable overheads	20.00
Fixed Over heads (₹1,00,000)	10.00
Variable expenses (Direct)	5.00
Selling expenses (10% fixed)	13.00
Distribution expenses (20% fixed)	7.00
Administration expenses (₹50,00,000)	5.00
Total Cost per unit (to make and sell)	155

Prepare a budget for production of (a) 8,000 units,
(b) 6,000 units and (c) indicate cost per unit at both the levels.

Solution:

Flexible Budget						
Particulars	at 6,000 units		at 8,000 units		at 10,000 units	
	Per unit	Total	Per unit	Total	Per unit	Total
Materials	70	4,20,000	70	5,60,000	70	7,00,000
Labour	25	1,50,000	25	2,00,000	25	2,50,000
Variable overheads	20	1,20,000	20	1,60,000	20	2,00,000
Fixed Overheads	16.67	1,00,000	12.5	1,00,000	10	1,00,000
Variable Expenses	5	30,000	5	40,000	5	50,000
Selling Expenses						
10% Fixed	2.17	13,000	1.625	13,000	1.3	13,000
90% variable	11.7	70,200	11.7	93,600	11.7	1,17,000
Distribution expenses	2.33	14,000	1.75	14,000	1.4	14,000
80% Variable	5.6	33,600	5.6	44,800	5.6	56,000
Administration	8.33	50,000	6.25	50,000	5	50,000
Total Cost	166.8	10,00,800	159.425	12,75,400	155	15,50,000

Illustration – 15

Cost of an article at a capacity level of 7,500 units is given under 'A' or variation of 20% on capacity above or below this level. The individual expenses vary as indicated under 'B' below.

A	B	
Materials	37,500	(100% varying)
Labour cost	22,500	(100% varying)
Power		1,875
(80% varying)		
Repair and Maintenance	3,000	(75% varying)
Stores	1,500	(100% varying)
Inspection	750	(20% varying)
Depreciation	15,000	(100% varying)
Administration overhead	7,500	(25% varying)
Selling overhead	4,500	(50% varying)
Total cost	94,125	

Find out the cost of the production level of 6,000 units and 9,000 units.

Solution:

Statement of Flexible Budget

Particulars	7,500 units		6,000 units		9,000 units	
	Amount	P.U	Amount	P.U	Amount	P.U
Material	37,500	5	30,000	5	45,000	5
Labour cost	22,500	3	18,000	3	27,000	3
Power–80% variable	1,500	0.2	1,200	0.2	1,800	0.2
20% fixed	375	0.05	375	0.06	375	0.04
Repairs & Maintenance						
75% of variable	2,250	0.3	1,800	0.3	2,700	0.3
25% fixed	750	0.1	750	0.13	750	0.08
Stores	1,500	0.2	1,200	0.2	1,800	0.2
Inspection						
20% variable	150	0.02	120	0.02	180	0.02
80% fixed	600	0.08	600	0.1	600	0.067
Depreciation	15,000	2.0	12,000	2	18,000	2
Administration						
overhead						
25% variable	1,875	0.25	1,500	0.25	2,250	0.25
75% fixed	5,625	0.75	5,625	0.94	5,625	0.625
Selling overhead						
50% variable	2,250	0.3	1,800	0.3	2,700	0.3
50% fixed	2,250	0.3	2,250	0.375	2,250	0.25
Total	94,125	12.55	77,220	12.875	1,11,030	12.335

Illustration – 16

Draw up a flexible budget for overhead expenses on the basis of the following data and determinate the overhead rate @ 70% and 90% Calculate direct labour rate at 70%, 80% and 90% capacity.

Overheads at the capacity level of 80%

Variable overheads

Indirect labour 9,00,000

Store including spares 3,00,000

Semi-variable overhead

(Power – 30% fixed – 70% variable) 15,00,000

Repair semi variables (60% fixed & 40% variable) 1,50,000

Fixed overheads

Depreciation 8,25,000

Insurance 2,25,000

Salary 7,50,000

Solution:**Statement of Flexible Budget**

<i>Particular</i>	<i>70%</i>	<i>80%</i>	<i>90%</i>
Variable overhead			
Indirect labour	7,87,500	9,00,000	10,12,500
Store including spare	2,62,500	3,00,000	3,37,500
(a) Semi – variable overhead			
Power – 70% variable	9,18,750	10,50,000	11,81,250
30% fixed	4,50,000	4,50,000	4,50,000
(b) Repair and Machinery			
40% variable	52,500	60,000	67,500
60% fixed	90,000	90,000	90,000
Fixed overhead			
Depreciation	8,25,000	8,25,000	8,25,000
Insurance	2,25,000	2,25,000	2,25,000
Salary	7,50,000	7,50,000	7,50,000
Total overhead	43,61,250	46,50,000	49,38,750

Illustration – 17

The expenses for production of 10,000 units in a factory are furnished below–

Materials	₹ 70 Per unit
Labour	₹ 25 Per unit
Variable Overhead	₹ 20 Per unit
Fixed overhead	₹ 1,00,000
Direct variable expenses	₹ 5 Per unit
Selling expenses (10% fixed)	₹ 13 Per unit
Distribution expenses (20% fixed)	₹ 7 Per unit

Prepare a budget for production of @ 10,000 units (b) 8,000 units & (c) 6,000 units show also unit and total cost at each levels of production.

Solution:**Statement of Flexible Budget**

<i>Particular</i>	<i>10,000 units</i>		<i>8,000 units</i>		<i>6,000 units</i>	
	<i>Amount</i>	<i>P.U</i>	<i>Amount</i>	<i>P.U</i>	<i>Amount</i>	<i>P.U</i>
Material	7,00,000	70	5,60,000	70	4,20,000	70
Labour	2,50,000	25	2,00,000	25	1,50,000	25
D. Variable expenses	50,000	5	40,000	5	30,000	5
Prime Cost	10,00,000	100	8,00,000	100	6,00,000	100
Add: Factory overhead						

Variable overhead	2,00,000	20	1,60,000	20	1,20,000	20
Fixed overhead	1,00,000	10	1,00,000	12.5	1,00,000	16.67
Works Cost	13,00,000	130	10,60,000	132.5	8,20,000	136.67
<i>Add: Office</i>						
Administration overhead	—	—	—	—	—	—
Cost of Production	13,00,000	130	10,60,000	132.5	8,20,000	136.67
<i>Add: Selling and Distribution overhead</i>						
<i>Selling Expenses</i>						
90% variable	1,17,000	11.7	93,600	11.7	70,200	11.7
10% fixed	13,000	1.3	13,000	1.63	13,000	2.17
<i>Distribution expenses</i>						
80% Variable	56,000	5.6	44,800	5.6	33,600	5.6
20% fixed	14,000	1.4	14,000	1.75	14,000	2.33
Total Cost of Sales	15,00,000	150	12,25,400	153.18	9,50,800	158.47
50 0.563 2250	0.375					
Total cost	62,750	12.55	51,630	12.907	73,870	12.31

Illustration – 18

The details given below related to 60% activity. When the production was 600 units.

Materials	—	₹ 120 Per unit
Labour	—	₹ 50 Per unit
Expenses	—	₹ 15 Per unit
Factory expenses	—	₹ 50,000 (40% fixed)
Administration expenses	—	₹ 35,000 (60% fixed)

Prepare a flexible budget showing marginal cost and total cost, for 60%, 80% and 100% activity.

Solution:**Statement of Flexible Budget**

<i>Particular</i>	<i>60%</i>		<i>80%</i>		<i>100%</i>	
	<i>(600 units)</i>		<i>(800 units)</i>		<i>(1,000 units)</i>	
	<i>Amount</i>	<i>P.U</i>	<i>Amount</i>	<i>P.U</i>	<i>Amount</i>	<i>P.U</i>
	₹	₹	₹	₹	₹	₹
<i>Marginal cost / Variable cost</i>						
Materials	72,000	120	96,000	120	1,20,000	120
Labour	30,000	50	40,000	50	50,000	50
Expenses	9,000	15	12,000	15	15,000	15

<i>Factory expenses</i> (60% variable)	30,000	50	40,000	50	50,000	50
<i>Administration expenses</i> (40% variable)	14,000	23.33	18,667	23.33	23,330	23.33
Total Marginal Cost	1,55,000	258.33	2,06,667	258.33	2,58,330	258.33
Fixed cost						
<i>Factory expenses</i> 40% fixed $\left(50,000 \times \frac{40}{100}\right)$	20,000	33.33	20,000	25.00	20,000	20.00
<i>Administrative expenses</i> 60% fixed $\left(35,000 \times \frac{60}{100}\right)$	21,000	35.00	21,000	26.25	21,000	21.00
Total cost	1,96,000	326.66	2,47,667	309.58	2,99,330	299.33

Illustration – 19

A printing Co. Ltd ended with the following profit and loss account during the year 2013.

Sales →	3,55,800
Less: Expenses	
Raw - materials	74,200
Stores	48,800
Expenses	2,04,000
Internal	20,000
Depreciation	20,000
	3,67,000
	<u>Loss ₹ 11,200</u>

The company had been working at 60% of capacity during 2013 of the expenses 2,04,000, 25% is variable. In 2013, production/sales volume at 80% capacity is expected to be achieved. Fixed cost is, however, expected to increase by ₹ 12,000 draw 2014 budget.

Budget for 2014**(Based on flexible budgeting)**

	80% Capacity (₹)
I. Sales $\left(\frac{3,55,800}{60} \times 80\right)$	<u>4,74,400</u>

(A) Variable costs	
Materials $\left(74,200 \times \frac{80}{60} \right)$	98,933
Stores $- \left(48,800 \times \frac{80}{60} \right)$	65,067
(A) Total \rightarrow Variable Cost	1,64,000
(B) Semi-variable cost	
Expenses	
$\left[\text{at } 60\% - 2,04,000 \begin{matrix} \text{25\% variable } 51,000 \\ \text{75\% fixed } 1,53,000 \end{matrix} \right] [1,53,000 + 68,000]$	2,21,000
$\therefore \text{V.C.} = \frac{51,000 \times 80}{60} = 68,000 \text{ (A + B)} \rightarrow$	3,85,000
(C) Fixed cost	
Interest	20,000
Depreciation	20,000
Additional fixed cost	12,000
II. Total (A + B + C) \rightarrow	4,37,000
\therefore Profit (I – II)	37,400

14.5 ZERO-BASE BUDGETING

When management wishes to re-evaluate or re-value every task with a view to ensure better performance and utilisation of scarce resources, traditional budgeting is supposed to be meaningless. In such a situation zero-base budgeting is a better solution. Zero-base budgeting was developed originally by **Peter. A. Pyhrr** at Texas instrument. He has defined ZBB as “an operating, planning and budgeting process which require each manager to justify his entire budget request in detail from **serateh** (hence zero - base) and shifts the burden of proof to each manager to justify why he should spend any money at all”. Thus, ZBB reviews a programme or profit from “Scratch”. These are more appropriate for Government budgeting than business budgeting.

Programme Budgeting

It was introduced in 1961 in US Department of Defence and by 1968, its use was extended to all federal as well as local government, department of U.S.A. In Britain, it is referred as “Output budgeting”. This budgeting came into existence basically for government departments & non-profit organisation. Programme budgeting

NOTES

focuses on the achievements of specific goals and missions and on the **output** (results) of a programme, an attempt to relate available resources to such programmes, goals, missions, outputs and results. Thus, it involves.

- (a) Identification of programmes to achieve the mission.
- (b) Identification of the various elements of programme.
- (c) Allocation of resource to programme
- (d) Forecast and analysis of alternative.

Performance Budgeting

The budget has been used particularly in government. Administration for ensuring financial control and thus the total emphasis is only on financial aspects. The expenditure are not related to planned outputs. Thus, traditional budgeting does not provide a link between inputs in financial terms and 'output in physical terms.

14.6 SUMMARY

The word "Budget" is derived from French word "Bougette" representing a leather pouch into which funds are appropriated to meet the anticipated expenses. The word "budget" therefore refers the monetary or quantitative expression of business plans and policies to be pursued in the future. The ICMA, England defined a budget as "a financial and/or quantitative statement prepared and approved prior to a defined period of time, of the policy to be pursued during that period for the purpose of attaining a given objective. "In the words of J.L Brown and L.R. Howard "A budget is a pre-determined statement of management policy during a given period which provides a standard for comparison with the results actually achieved".

Budgeting refers to the procedure followed to prepare the budget. Thus, budgeting is a forward planning and involves the preparation in advance of the quantitative as well as financial statement to indicate the intention of the management in respect of various aspects of business. In the words of W.J. Vatter "Budgeting is a kind of future accounting in which the problems of future are met on the paper before the transaction actually occurs.

Budgetary control is the establishment of a policy and the continuous comparison of actual with budgeted results either to secure by individual action the objects of that policy or a basis for a re-union. Fixed budget: Fixed budget are those which are prepared on the basis of fixed or given level of activity. It does not make any change even if the level of activity changes in comparison with the budget. Flexible budget: Flexible budget are those which may frequently change according to the level of activity.

Production budget is usually based on the sales budget and the desired inventory levels. It is the forecast of the quantity of production for the budget period. Production budget is usually expressed in the physical quantity –units of output, material requirements and labour requirements.

NOTES

14.7 GLOSSARY

- (a) **Budget:** Budget refers the monetary or quantitative expression of business plans and policies to be perused in the future.
- (b) **Budgeting:** Budgeting refers to the procedure followed to prepare the budget. Thus, budgeting is a forward planning and involves the preparation in advance of the quantitative as well as financial statement to indicate the intention of the management in respect of various aspects of business.
- (c) **Budgetary control:** Budgetary control is the establishment of a policy and the continuous comparison of actual with budgeted results either to secure by individual action the objects of that policy or a basis for a re-union.
- (d) **Fixed budget:** Fixed budget are those which are prepared on the basis of fixed or given level of activity. It does not make any change even if the level of activity changes in comparison with the budget.
- (e) **Flexible budget:** Flexible budget are those which may frequently change according to the level of activity.
- (f) **Production budget:** Production budget is usually based on the sales budget and the desired inventory levels. It is the forecast of the quantity of production for the budget period. Production budget is usually expressed in the physical quantity –units of output, material requirements and labour requirements.

14.8 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. Define a Budget.
2. What do you mean by budget?
3. State the types of budget.
4. What is budgeting?
5. What do you mean by budgetary control?

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6. State the features of budgetary control.
7. What is organisational chart?
8. Give the meaning of budget centre.
9. What do you mean by budget manual?
10. What is budget committee?
11. What do you mean by budget period?
12. What do you mean by master budget?
13. What do you mean by cash budget?
14. What is flexible budget?
15. Define Key factors.
16. What is Zero base budget?

(B) Extended Answer Questions

1. What are the essential features of a budget?
2. State the objective of budget.
3. Explain the functions of budgeting.
4. Mention the advantages and disadvantages of budgetary control.
5. Explain classification of budgets.
6. Distinguish between budgetary control and standard costing.

(C) True or False

1. The word “Budget” is derived from French word “Bougette”.
2. A budget is a pre-determined statement of management policy during a given period which provides a standard for comparison with the results actually achieved.
3. Budgeting refers to the procedure followed to prepare the budget.
4. Cash control is the establishment of a policy and the continuous comparison of actual with budgeted results either to secure by individual action the objects of that policy or a basis for a re-union.
5. Flexible budget are those which are prepared on the basis of fixed or given level of activity.

(D) Multiple Choice Questions**NOTES**

1. The word “Budget” is derived from French word.....
(a) Bougette (b) Banquet
(c) Both a and b (d) None of the above
2. What refers to the procedure followed to prepare the budget?
(a) Budgeting (b) Controlling
(c) Planning (d) All the above
3. What is the establishment of a policy and the continuous comparison of actual with budgeted results either to secure by individual action the objects of that policy or a basis for a re-union?
(a) Budgetary control (b) Controlling
(c) Planning (d) All the above

(E) Fill in the Blanks

1. The word “Budget” is derived from French word.....
2. Budgeting refers to the procedure followed to prepare the.....
3.is the establishment of a policy and the continuous comparison of actual with budgeted results either to secure by individual action the objects of that policy or a basis for a re-union.
4.are those which are prepared on the basis of fixed or given level of activity.
5. Flexible budget are those which may frequently change according to the.....

14.9 KEY TO CHECK YOUR ANSWER

(C) 1. True, 2. True, 3. True, 4. False, 5. False

(D) 1. (a), 2. (a), 3. (a)

(E) 1. Bougette, 2. Budget, 3. Budgetary control, 4. Fixed budget, 5. Level of activity

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14.12 TERMINAL QUESTIONS

1. Explain various step of budgetary control.

UNIT 15 RESPONSIBILITY AND HUMAN RESOURCE ACCOUNTING

Structure:

- 15.1 Introduction
- 15.2 Social Responsibility
- 15.3 Meaning of Corporate Social Responsibility
- 15.4 Definitions of Corporate Social Responsibility
- 15.5 Corporate Social Responsibility – Indian Companies Act 2013
- 15.6 Benefits of Corporate Social Responsibility
- 15.7 CSR Issues for Management
- 15.8 Human Resource Accounting
- 15.9 Definitions of Human Resource Accounting
- 15.10 Need for Human Resource Accounting
- 15.11 Objectives of Human Resource Accounting
- 15.12 Benefits of Human Resource Accounting
- 15.13 Limitations of Human Resource Accounting
- 15.14 Summary
- 15.15 Glossary
- 15.16 Check Your Progress (Multiple Choice/Objective Type Questions)
- 15.17 Key to Check Your Answer
- 15.18 Bibliography
- 15.19 Suggested Readings
- 15.20 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Social Responsibility
- Human Resource Accounting

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15.1 INTRODUCTION

Human Resource Accounting is the process of identifying and reporting investments made in the human resources of an organization that are presently unaccounted for in the conventional accounting practices. It is an extension of standard accounting principles. Measuring the value of human resources can assist organizations in accurately documenting their assets.

15.2 SOCIAL RESPONSIBILITY

Social responsibility is an ethical framework and suggests that an entity, be it an organization or individual, has an obligation to act for the benefit of society at large. Social responsibility is a duty every individual has to perform so as to maintain a balance between the economy and the ecosystems. A trade-off may exist between economic development, in the material sense, and the welfare of the society and environment, though this has been challenged by many reports over the past decade. Social responsibility means sustaining the equilibrium between the two. It pertains not only to business organizations but also to everyone whose any action impacts the environment. This responsibility can be passive, by avoiding engaging in socially harmful acts, or active, by performing activities that directly advance social goals.

15.3 MEANING OF CORPORATE SOCIAL RESPONSIBILITY

Corporate social responsibility is the commitment of businesses to contribute for sustainable economic development by working with employees and local community to improve their living standards.

15.4 DEFINITIONS OF CORPORATE SOCIAL RESPONSIBILITY

According to Lord Holme and Richard Watts, “Corporate Social Responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large”.

According to the United Nations Industrial Development Organization (UNIDO), “Corporate Social Responsibility is a management concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders”.

15.5 CORPORATE SOCIAL RESPONSIBILITY – INDIAN COMPANIES ACT 2013

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Under Section 135: Corporate Social Responsibility

(1) Every company having net worth of rupees five hundred crore or more, or turnover of rupees one thousand crore or more or a net profit of rupees five crore or more during any financial year shall constitute a Corporate Social Responsibility Committee of the Board consisting of three or more directors, out of which at least one director shall be an independent director.

(2) The Board's report under sub-section (3) of section 134 shall disclose the composition of the Corporate Social Responsibility Committee.

(3) The Corporate Social Responsibility Committee shall,—

- (a) Formulate and recommend to the Board, a Corporate Social Responsibility Policy which shall indicate the activities to be undertaken by the company as specified in Schedule VII;
- (b) Recommend the amount of expenditure to be incurred on the activities referred to in clause (a); and
- (c) Monitor the Corporate Social Responsibility Policy of the company from time to time.

(4) The Board of every company referred to in sub-section (1) shall,—

- (a) After taking into account the recommendations made by the Corporate Social Responsibility Committee, approve the Corporate Social Responsibility Policy for the company and disclose contents of such Policy in its report and also place it on the company's website, if any, in such manner as may be prescribed; and
- (b) Ensure that the activities as are included in Corporate Social Responsibility Policy of the company are undertaken by the company.

(5) The Board of every company referred to in sub-section (1), shall ensure that the company spends, in every financial year, at least two per cent of the average net profits of the company made during the three immediately preceding financial years, in pursuance of its Corporate Social Responsibility Policy: Provided that the company shall give preference to the local area and areas around it where it operates, for spending the amount earmarked for Corporate Social Responsibility activities: Provided further that if the company fails to spend such amount, the Board shall, in its report made under clause (o) of sub-section (3) of section 134, specify the reasons for not spending the amount

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Explanation: For the purposes of this section “average net profit” shall be calculated in accordance with the provisions of section 198.

15.6 BENEFITS OF CORPORATE SOCIAL RESPONSIBILITY

Benefits of Corporate Social Responsibility can be summarized as follows:

1. Enhanced brand image & reputation

A company considered socially responsible can benefit -both by its enhanced reputation with the public, as well as its reputation within the business community, increasing a company’s ability to attract capital and trading partners.

2. Increased sales and customer loyalty

A number of studies have suggested a large and growing market for the products and services of companies perceived to be socially responsible. While businesses must first satisfy customers’ key buying criteria – such as price, quality, appearance, taste, availability, safety and convenience.

3. Increased ability to attract and retain employees

Companies perceived to have strong CSR commitments often find it easier to recruit employees, particularly in tight labor markets. Retention levels may be higher too, resulting in a reduction in turnover and associated recruitment and training costs.

4. It enhances better relationships with clients

A strong corporate social responsibility framework helps to build and maintain trust between the company and clients. It can strengthen ties, build alliances and foster strong working relationships with both existing and new clients.

5. It encourages both professional and personal development

Providing employees with the opportunity to be involved in a company’s socially responsible activities can have the benefit of teaching new skills to staff, which can in turn be applied in the workplace. By undertaking activities outside of their usual work responsibilities, employees have the chance to contribute to work and causes that they might feel passionate about, or learn something entirely new which can help enrich their own perspectives. By supporting these activities, organizations encourage growth and support for employees.

6. It supports public value outcomes

Public value is about the value that an organization contributes to society. A sound, robust corporate social responsibility framework and organizational mindset can genuinely help organizations deliver public value outcomes by focusing on how

their services can make a difference in the community. This might happen indirectly, where an organization's services enable others to contribute to the community.

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15.7 CSR ISSUES FOR MANAGEMENT

Various CSR Issues for Management are:

1. Human Resources

Corporate Social Responsibility can be an important aid to recruitment and retention, particularly within the competitive market. CSR can also help to build a 'feel good' atmosphere among existing staff.

2. Risk Management

Managing risk is a central part of many corporate strategies. Reputations that take decades to build up can be ruined in hours through incidents such as corruption scandals or environmental accidents. These events can also draw unwanted attention from regulators, courts, governments and media. Building a genuine culture of 'doing the right thing' within a corporation can offset these risks.

3. Brand Differentiation

In crowded marketplaces companies struggle for good brand which can separate them from the competition in the minds of consumers. Several major brands are built on ethical values.

4. License to operate

Corporations are keen to avoid interference in their business through taxation or regulations. By taking substantive voluntary steps they can persuade governments and the wider public that they are taking current issues like health and safety, diversity or the environment seriously and so avoid intervention.

5. Diverting Attention

Major corporations which have existing reputational problems due to their core business activities may engage in high-profile CSR programs to draw attention away from their perceived negative impacts. Thus British American Tobacco (BAT) will take part in health initiatives and the petroleum giant BP has installed very visible wind-turbines on the roofs of some petrol stations in the UK.

6. Quality of work life

Quality of work life is a process in an organization which enable its members at all levels to participate activity and effectively in shaping organization.

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7. Transparency

Transparency is the situation in which business and financial activities are done in an open way without secrets, so that people can trust that they are fair and honest.

15.8 HUMAN RESOURCE ACCOUNTING

Human resources are considered as important assets and are different from the physical assets. Physical assets do not have feelings and emotions, whereas human assets are subjected to various types of feelings and emotions. In the same way, unlike physical assets human assets never get depreciated.

Therefore, the valuations of human resources along with other assets are also required in order to find out the total cost of an organization. In 1960s, Rensis Likert along with other social researchers made an attempt to define the concept of human resource accounting (HRA).

15.9 DEFINITIONS OF HUMAN RESOURCE ACCOUNTING

The American Association of Accountants (AAA) defines, 'HRA is a process of identifying and measuring data about human resources and communicating this information to interested parties'.

Flamhoitz defines, "HRA is accounting for people as an organizational resource. It involves measuring the costs incurred by organizations to recruit, select, hire, train and develop human assets. It also involves measuring the economic value of people to the organization".

According to Stephen Knauf, "HRA is the measurement and quantification of human organizational inputs such as recruiting, training, experience and commitment".

15.10 NEED FOR HUMAN RESOURCE ACCOUNTING

The need for human asset valuation arose as a result of growing concern for human relations management in the industry. Behavioural scientists concerned with management of organizations pointed out the following reasons for HRA:

1. Under conventional accounting, no information is made available about the human resources employed in an organization, and without people the financial and physical resources cannot be operationally effective.
2. The expenses related to the human organization are charged to current revenue instead of being treated as investments, to be amortized over a period of time, with

the result that magnitude of net income is significantly distorted. This makes the assessment of firm and inter-firm comparison difficult.

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3. The productivity and profitability of a firm largely depends on the contribution of human assets. Two firms having identical physical assets and operating in the same market may have different returns due to differences in human assets. If the value of human assets is ignored, the total valuation of the firm becomes difficult.

4. If the value of human resources is not duly reported in profit and loss account and balance sheet, the important act of management on human assets cannot be perceived.

5. Expenses on recruitment, training etc. are treated as expenses and written off against revenue under conventional accounting. All expenses on human resources are to be treated as investments, since the benefits are accrued over a period of time.

15.11 OBJECTIVES OF HUMAN RESOURCE ACCOUNTING

Rensis Likert described the following objectives of HRA:

1. Providing cost value information about acquiring, developing, allocating and maintaining human resources.
2. Enabling management to monitor the use of human resources.
3. Finding depreciation or appreciation among human resources.
4. Assisting in developing effective management practices.
5. Increasing managerial awareness of the value of human resources.
6. For better human resource planning.
7. For better decisions about people based on improved information system.
8. Assisting in effective utilization of manpower.

15.12 BENEFITS OF HUMAN RESOURCE ACCOUNTING

There are certain benefits for accounting of human resources, which are explained as follows:

1. The system of HRA discloses the value of human resources, which helps in proper interpretation of return on capital employed.
2. Managerial decision-making can be improved with the help of HRA.

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3. The implementation of human resource accounting clearly identifies human resources as valuable assets, which helps in preventing misuse of human resources by the superiors as well as the management.
4. It helps in efficient utilization of human resources and understanding the negative effects of labour unrest on the quality of human resources.
5. This system can increase productivity because the human talent, devotion, and skills are considered as valuable assets, which can boost the morale of the employees.
6. It can assist the management for implementing best methods of wages and salary administration.

15.13 LIMITATIONS OF HUMAN RESOURCE ACCOUNTING

HRA is yet to gain momentum in India due to certain difficulties:

1. The valuation methods have certain disadvantages as well as advantages; therefore, there is always a bone of contention among the firms that which method is an ideal one.
2. There are no standardized procedures developed so far. So, firms are providing only as additional information.
3. Under conventional accounting, certain standards are accepted commonly, which is not possible under this method.
4. All the methods of accounting for human assets are based on certain assumptions, which can go wrong at any time. For example, it is assumed that all workers continue to work with the same organization till retirement, which is far from possible.
5. It is believed that human resources do not suffer depreciation, and in fact they always appreciate, which can also prove otherwise in certain firms.
6. The lifespan of human resources cannot be estimated. So, the valuation seems to be unrealistic.

15.14 SUMMARY

Human resource accounting is the process of identifying and reporting investments made in the human resources of an organization that are presently unaccounted for in the conventional accounting practices. It is an extension of standard accounting principles. Measuring the value of human resources can assist organizations in accurately documenting their assets.

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Social responsibility is an ethical framework and suggests that an entity, be it an organization or individual, has an obligation to act for the benefit of society at large. Social responsibility is a duty every individual has to perform so as to maintain a balance between the economy and the ecosystems. A trade-off may exist between economic development, in the material sense, and the welfare of the society and environment, though this has been challenged by many reports over the past decade. Social responsibility means sustaining the equilibrium between the two. It pertains not only to business organizations but also to everyone whose any action impacts the environment. This responsibility can be passive, by avoiding engaging in socially harmful acts, or active, by performing activities that directly advance social goals. Corporate social responsibility is the commitment of businesses to contribute for sustainable economic development by working with employees and local community to improve their living standards.

Quality of work life is a process in an organization which enable its members at all levels to participate activity and effectively in shaping organization.

Transparency is the situation in which business and financial activities are done in an open way without secrets, so that people can trust that they are fair and honest.

Human resources are considered as important assets and are different from the physical assets. Physical assets do not have feelings and emotions, whereas human assets are subjected to various types of feelings and emotions. In the same way, unlike physical assets human assets never get depreciated.

Flamhoitz defines, “HRA is accounting for people as an organizational resource. It involves measuring the costs incurred by organizations to recruit, select, hire, train, and develop human assets. It also involves measuring the economic value of people to the organization”.

According to Stephen Knauf, “HRA is the measurement and quantification of human organizational inputs such as recruiting, training, experience and commitment”.

15.15 GLOSSARY

- (a) **Human resource accounting:** Human resource accounting is the process of identifying and reporting investments made in the human resources of an organization that are presently unaccounted for in the conventional accounting practices. It is an extension of standard accounting principles. Measuring the value of human resources can assist organizations in accurately documenting their assets.
- (b) **Social responsibility:** Social responsibility is an ethical framework and suggests that an entity, be it an organization or individual, has an obligation to act for the benefit of society at large.

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- (c) **Corporate social responsibility:** Corporate social responsibility is the commitment of businesses to contribute for sustainable economic development by working with employees and local community to improve their living standards.

15.16 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What is Social Responsibility?
2. Give the meaning of Corporate Social Responsibility.
3. What is Human Resource Accounting?
4. Define the term Human Resource Accounting.

(B) Extended Answer Questions

1. Discuss Corporate Social Responsibility according to Indian Companies Act 2013.
2. Explain benefits of Corporate Social Responsibility.
3. Discuss CSR Issues for Management.
4. Explain need for Human Resource Accounting.
5. Discuss objectives of Human Resource Accounting.
6. Explain benefits of Human Resource Accounting.

(C) True or False

1. Human resource accounting is the process of identifying and reporting investments made in the human resources of an organization.
2. Social responsibility is an ethical framework and suggests that an entity, be it an organization or individual, has an obligation to act for the benefit of society at large.
3. Accountability is the commitment of businesses to contribute for sustainable economic development by working with employees and local community to improve their living standards.
4. Managing risk is a central part of many corporate strategies.
5. Quality of work life is a process in an organization which enable its members at all levels to participate activity and effectively in shaping organization.

6. HRA is the measurement and quantification of human organizational inputs such as recruiting, training, experience and commitment.

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(D) Multiple Choice Questions

1. What is the process of identifying and reporting investments made in the human resources of an organization?
(a) Human resource accounting (b) CSR
(c) Quality of work life (d) None of the above
2. What is a process in an organization which enable its members at all levels to participate activity and effectively in shaping organization?
(a) Human resource accounting (b) CSR
(c) Quality of work life (d) None of the above

(E) Fill in the Blanks

1.is the process of identifying and reporting investments made in the human resources of an organization.
2.is an ethical framework and suggests that an entity, be it an organization or individual, has an obligation to act for the benefit of society at large.
3.is the commitment of businesses to contribute for sustainable economic development by working with employees and local community to improve their living standards.
4.is the measurement and quantification of human organizational inputs such as recruiting, training, experience and commitment.

15.17 KEY TO CHECK YOUR ANSWER

(C) 1. True, 2. True, 3. False, 4. True, 5. True

(D) 1. (a), 2. (c)

(E) 1. Human resource accounting, 2. Social responsibility, 3. Corporate social responsibility, 4. HRA

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15.20 TERMINAL QUESTIONS

1. Discuss the limitations of Human Resource Accounting.

BLOCK IV: Analysis of Financial Statements

UNIT 16 FINANCIAL ANALYSIS

Structure:

- 16.1 Introduction
- 16.2 Concept of Financial Analysis
- 16.3 Nature of Financial Statements
- 16.4 Methods of Financial Statement Analysis
- 16.5 Types of Analysis and Interpretation of Financial Statements
- 16.6 Tools of Financial Analysis
- 16.7 Summary
- 16.8 Glossary
- 16.9 Check Your Progress (Multiple Choice/Objective Type Questions)
- 16.10 Key to Check Your Answer
- 16.11 Bibliography
- 16.12 Suggested Readings
- 16.13 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Nature of Financial Analysis
- Methods of Financial Analysis
- Tools of Financial Analysis

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16.1 INTRODUCTION

Financial Analysis is defined as being the process of identifying financial strength and weakness of a business by establishing relationship between the elements of balance sheet and income statement. The information pertaining to the financial statements is of great importance through which interpretation and analysis is made. It is through the process of financial analysis that the key performance indicators, such as, liquidity solvency, profitability as well as the efficiency of operations of a business entity may be ascertained, while short term and long term prospects of a business may be evaluated. Thus, identifying the weakness, the intent is to arrive at recommendations as well as forecasts for the future of a business entity.

The ultimate objective or result of the financial accounting is communicating the true and fair financial position to the needy people in the prescribed manner known as Financial Statements. It includes preparation of Income Statements and Balance Sheet. It is intended to convey the profitability position and the overall financial soundness of the concern. However only the financial statements like Income Statements and Balance Sheet in its actual form sometime cannot convey the true and fair financial position. It needs to be analysed as per the requirement of the circumstances and objectives of the needy people and it needs the different ways of presentation for different people so that the same facts and figures can serve different objectives. In this regard, it is essential to understand the concept of Financial Statement Analysis.

16.2 CONCEPT OF FINANCIAL ANALYSIS

Meaning of Financial Statements

Financial statements are the essential documents of business. They are the outputs of financial accounting. They are the final products of the accounting process. They are statements containing financial information of a business enterprise. They convey certain message to feel financial pulse of an organization. The basic purpose of preparing financial statements is to convey information about financial position of the enterprise to owners, creditors and the investors.

Objectives of Financial Statements

Financial statements serve as a horoscope of a business. This is so because they enable readers to measure financial position of a concern. The main objective of financial statements is to provide information about the financial position and performance of an enterprise that is useful to users in making decisions. The other objectives are summarized below:

1. To provide information about assets and liabilities of a firm.
2. To provide useful information to various parties interested in financial statements.
3. To present true and fair view of the business.
4. To estimate the earning capacity of the enterprise.
5. To determine the debt capacity of the concern.
6. To decide about the future prospects of the business.

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Thus, the ultimate objective of financial statements is to get better insight about the financial strengths and weakness of the firm.

16.3 NATURE OF FINANCIAL STATEMENTS

The following characteristics of financial statements indicate their nature:

1. Recorded Facts

The term recorded facts refers to the data drawn from accounting records. Only those facts which have been recorded in the books are shown in the financial statements.

2. Accounting Principles

In the preparation of financial statements, certain accounting principles, concepts and conventions are followed. *For example:* The principle of cost price or market price whichever is less is followed for valuation of stock.

3. Assumptions

Business transactions are recorded on certain assumptions. *For example:* In preparing financial statements, the accountants make many assumptions like that the value of money remains constant, going concern concept etc.

4. Personal Judgment

The financial statements are affected by the personal judgment of accountants. *For example:* The method of stock valuation, method of depreciation etc. depend on the personal judgment of the accountant. The accountant can select one of the available methods of stock valuation, depreciation etc.

Meaning of Analysis and Interpretation of Financial Statements

The term “analysis” can be understood as the process of splitting the facts or data found in the financial statements into simple elements. The term “interpretation” can be understood as the explanation of the meaning and significance of the financial data, so simplified with a view to throw light on the profitability and financial position

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of an enterprise. Thus, analysis and interpretation of financial statements is the process of classifying the facts and figures given in the financial statements into simple understandable component or elements and establishing the relationship between the elements, explaining the significance of the relationship between the classified component with a view to provide a full picture of the profitability and the financial position of the an enterprise.

In the words of **Myers**, “Financial statement analysis is largely a study of relationship among the various financial factors in a business as disclosed by a single set of statements, and a study of the trend of these factors as shown in a series of statements”.

In the words of **Metcalfe and Titard**, “Analyzing financial statements is a process of evaluating the relationship between component parts of a financial statement to obtain a better understanding of a firm’s position and performance.”

From the above definitions, it is clear that it is an attempt to determine the meaning and the significance of the data found in the financial statements and derive meaningful understanding for making effective decisions.

Essential of Financial Statements

The financial statements should possess the following essential qualities:

1. Understandability

Financial statements should be easily understandable by users. For this, the information contained in these statements should be clear and simple.

2. Relevance

The financial statements must contain only relevant information. Then only the users can evaluate past, present and future events and can take wise decisions.

3. Reliability and Accuracy

Financial statement should disclose information in such a way that the users can compare the current year’s progress with that of previous year. Users must also be able to compare the financial performance of reporting company with that of other companies.

4. Comparability

Financial statements should disclose information in such a way that the users can compare the current year’s progress with that of previous year. Users must also be able to compare the financial performance of reporting company with that of other companies.

5. Completeness

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The information contained in the financial statements should be complete in all respects. This means all information should be shown in these statements. It further means that the information shown in the financial statements should not mislead creditors, investors and other users.

6. Timeliness

The financial statements should be prepared within a reasonable time after the accounting period is over. If the statements are not prepared and presented in time, they cannot be properly used. Besides, the firm cannot formulate plans for future.

Importance of Financial Statements or Users of Financial Statements

The chief function of financial statements is providing valuable information about financial position and operating strength or weakness of the enterprise to various parties interested in the enterprise. The various interested parties are management, investors, creditors, banks, employees, government, customers, public, trade associations, stock exchanges etc. They are the users of the financial statements and financial statement analysis are actually the vehicles through which the financial information are transported to users of financial information. The following are the uses of financial statements to different parties are:

1. Importance for Management (Owners)

Financial statements supply valuable information to owners or management. They make use of financial statements for ascertaining the earning capacity, financial position, growth etc. Management can take decisions and manage the business efficiently on the basis of information provided by financial statement.

2. Importance for Investors

In the case of Joint Stock Company, shareholders and long term lenders (debenture holders) are the investors. Shareholders are the real owner of joint stock companies. Shareholders need information to decide whether to buy, hold or sell shares of the company. They also need information regarding financial position, earning of the firm. Debenture holders need information to know whether the company has ability to repay the debt and to pay the interest. The information required by investors will be provided by financial statements.

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3. Importance for Trade Creditors or Suppliers

Trade creditors or suppliers need information to determine whether amounts owing to them will be paid when due. Financial statements help them to know whether the company has the capacity to pay the amount due to them in time.

4. Importance for Banks

The banks will ensure that their loans along with interest will be paid on due dates while granting loans. For this, they want to know about the financial position and profit earning capacity of the borrowing company. Banks will get the required information from the financial statements.

5. Importance for Customers

Customers need information to know whether the company will be able to continue supply of goods and services to them. For knowing this, financial statements come to their help.

6. Importance for Employees

Employees require information to assess the profitability and stability of the enterprise. The profitability of the company affects the remuneration, bonus, retirement benefits, working conditions etc. of the employees. Therefore, the employees are also interested in the financial statements.

7. Importance for Government and their Agencies

Governments need information about the affairs of a company to formulate tax policies, export-import policies, annual budget etc. Controlling agency like SEBI is interested in the financial statements of companies to exercise control over them better. Similarly, tax authorities are also interested in income statements of the taxpaying companies. The income statement provides the basis for assessing the taxable income.

8. Importance for Public

Public also interested in financial statements of business enterprises. Financial statements provide information to public to judge whether the enterprise has fulfilled its social responsibility or not.

9. Importance for Trade Unions

Trade unions require information to initiate wage negotiations. This information is provided by financial statements.

Financial statements are also important for stock exchanges, research scholars etc. Thus, financial statements are able to satisfy the needs of all the parties interested in the business.

16.4 METHODS OF FINANCIAL STATEMENT ANALYSIS

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Types of Financial Statement Analysis

1. Basis of modes operating 2. Basis of material used

- | | |
|-------------------------|-----------------------|
| (a) Horizontal Analysis | (a) External Analysis |
| (b) Vertical Analysis | (b) Internal Analysis |

(a) **Horizontal Analysis:** Financial analysis is done for number of years, it is known as horizontal analysis. Such analysis set a trend wherein the figures of various years are compared with base year. Decision based on the trend percentage *example:* Trend Percentage and Comparative Financial Statement.

It is also known as dynamic analysis as it measures the change of position of the business over a number of years.

(b) **Vertical Analysis:** Analysis is made for data covering one year's periods it is known as vertical analysis. *Example:* Ratios and Common size financial statement

It is also known as static analysis as it measures the statement of affairs of the business as on given period of time.

(a) **External Analysis:** Financial statements analysis is made by outsiders who have no access to the books of accounts as they depend on the published accounts. *Example:* Shareholders, Creditors, Government agencies etc.

(b) **Internal Analysis:** Financial statements analysis is made by internal parties who have access to the books of accounts such as management, employees etc.

Process of Analysis and Interpretation of Financial Statements

The term "**analysis**" can be understood as the process of splitting the facts or data found in the financial statements into simple elements.

The term "**interpretation**" can be understood as the explanation of the meaning and significance of the financial data, so simplified with a view to throw light on the profitability and financial position of an enterprise.

Thus, analysis and interpretation of financial statements is the process of classifying the facts and figures given in the financial statements into simple understandable component or elements, and establishing the relationship between the elements,

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explaining the significance of the relationship between the classified component with a view to provide a full picture of the profitability and the financial position of the an enterprise.

16.5 TYPES OF ANALYSIS AND INTERPRETATION OF FINANCIAL STATEMENTS

Financial Statements can be analyzed by using the any one of the following method.

1. Comparative financial statement analysis.
2. Common-size statement analysis.
3. Trend analysis
4. Ratio analysis.
5. Fund flow analysis.
6. Cash flow analysis.

Comparative Financial Statements

Under this method the financial statements of the different period of the same concern will be compared in order to derive significant change in the financial and profitability position of the concern. It denotes the changes (i.e increase or decrease) in the financial figures between two or more years, in terms of money value and as well as in term of percentages. In other words, they are those financial statements which summarizes and present relative accounting data for a number of years, incorporating therein the changes in individual items of accounting figures.

Just by comparing the current year financial statement with the one previous year financial statement may not be sufficient to understand the true and fair financial efficiency and progress of the concern. In order to ensure effective and proper analysis and interpretation, it is expected to compare the figures of two or more preceding years, with the current year. That means, for proper analysis and interpretation, the comparative financial statements have to be prepared with the figures of two or more preceding years. It will bring out the trend change in the financial position as well as the profitability position of the concern.

Financial statement analysis can be performed by employing a number of methods or techniques. The following are the important methods or techniques of financial statement analysis.

16.6 TOOLS OF FINANCIAL ANALYSIS

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Various Tools of Financial Analysis are:

1. Balanced Scorecard

The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals. It was originated by Drs. Robert Kaplan (Harvard Business School) and David Norton as a performance measurement framework that added strategic non-financial performance measures to traditional financial metrics to give managers and executives a more ‘balanced’ view of organizational performance. While the phrase balanced scorecard was coined in the early 1990s, the roots of this type of approach are deep, and include the pioneering work of General Electric on performance measurement reporting in the 1950’s and the work of French process engineers (who created the Tableau de Bord – literally, a “dashboard” of performance measures) in the early part of the 20th century.

Gartner Group suggests that over 50% of large US firms have adopted the BSC. More than half of major companies in the US, Europe and Asia are using balanced scorecard approaches, with use growing in those areas as well as in the Middle East and Africa. A recent global study by Bain & Co listed balanced scorecard fifth on its top ten most widely used management tools around the world, a list that includes closely-related strategic planning at number one. Balanced scorecard has also been selected by the editors of Harvard Business Review as one of the most influential business ideas of the past 75 years.

The balanced scorecard has evolved from its early use as a simple performance measurement framework to a full strategic planning and management system. The “new” balanced scorecard transforms an organization’s strategic plan from an attractive but passive document into the “marching orders” for the organization on a daily basis. It provides a framework that not only provides performance measurements, but helps planners identify what should be done and measured. It enables executives to truly execute their strategies.

2. Benchmarking

Benchmarking is the process of comparing one’s business processes and performance metrics to industry bests and best practices from other companies. Dimensions typically measured are quality, time and cost. In the process of best

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practice benchmarking, management identifies the best firms in their industry, or in another industry where similar processes exist, and compares the results and processes of those studied to one's own results and processes. In this way, they learn how well the targets perform and, more importantly, the business processes that explain why these firms are successful.

Benchmarking is used to measure performance using a specific indicator (cost per unit of measure, productivity per unit of measure, cycle time of x per unit of measure or defects per unit of measure) resulting in a metric of performance that is then compared to others.

16.7 SUMMARY

Financial statements are the essential documents of business. They are the outputs of financial accounting. They are the final products of the accounting process. They are statements containing financial information of a business enterprise. They convey certain message to feel financial pulse of an organization. The basic purpose of preparing financial statements is to convey information about financial position of the enterprise to owners, creditors and the investors.

The term "analysis" can be understood as the process of splitting the facts or data found in the financial statements into simple elements. The term "interpretation" can be understood as the explanation of the meaning and significance of the financial data, so simplified with a view to throw light on the profitability and financial position of an enterprise. Thus, analysis and interpretation of financial statements is the process of classifying the facts and figures given in the financial statements into simple understandable component or elements and establishing the relationship between the elements, explaining the significance of the relationship between the classified component with a view to provide a full picture of the profitability and the financial position of the an enterprise.

Financial statement analysis is largely a study of relationship among the various financial factors in a business as disclosed by a single set of statements, and a study of the trend of these factors as shown in a series of statements.

Horizontal Analysis: Financial analysis is done for number of years, it is known as horizontal analysis. Such analysis set a trend wherein the figures of various years are compared with base year. Decision based on the trend percentage example: Trend percentage and Comparative financial statement.

Vertical Analysis: Analysis is made for data covering one year's periods it is known as vertical analysis. Example: Ratios and Common size financial statement

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External Analysis: Financial statements analysis is made by outsiders who have no access to the books of accounts they have depend on the published accounts. Example: Shareholders, Creditors, Government agencies etc.

Internal Analysis: Financial statements analysis is made by internal parties who have access to the books of accounts such as management, employees etc.

The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals.

Benchmarking is the process of comparing one's business processes and performance metrics to industry bests and best practices from other companies. Dimensions typically measured are quality, time and cost. In the process of best practice benchmarking, management identifies the best firms in their industry, or in another industry where similar processes exist, and compares the results and processes of those studied to one's own results and processes. In this way, they learn how well the targets perform and, more importantly, the business processes that explain why these firms are successful.

16.8 GLOSSARY

- (a) **Financial statements:** Financial statements are the essential documents of business. They are the outputs of financial accounting. They are the final products of the accounting process. They are statements containing financial information of a business enterprise. They convey certain message to feel financial pulse of an organization. The basic purpose of preparing financial statements is to convey information about financial position of the enterprise to owners, creditors and the investors.
- (b) **Analysis:** The term "analysis" can be understood as the process of splitting the facts or data found in the financial statements into simple elements.
- (c) **Financial statement analysis:** Financial statement analysis is largely a study of relationship among the various financial factors in a business as disclosed by a single set of statements, and a study of the trend of these factors as shown in a series of statements.
- (d) **Vertical Analysis:** Analysis is made for data covering one year's periods it is known as vertical analysis. Example: Ratios and Common size financial statement

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- (e) **Balanced scorecard:** The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals.
- (f) **Benchmarking:** Benchmarking is the process of comparing one's business processes and performance metrics to industry bests and best practices from other companies. Dimensions typically measured are quality, time and cost.

16.9 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What is financial statement?
2. What is Financial Statement analysis?
3. What is Vertical Analysis?
4. What is balanced scorecard?
5. What is Benchmarking?

(B) Extended Answer Questions

1. Discuss nature of Financial Analysis.
2. Explain various methods of Financial Analysis.
3. Discuss various tools of Financial Analysis.

(C) True or False

1. Financial statements are the essential documents of business.
2. Financial statement analysis is largely a study of relationship among the various financial factors in a business as disclosed by a single set of statements.
3. Financial analysis is done for number of years, it is known as horizontal analysis.
4. Analysis is made for data covering one year's periods it is known as vertical analysis.
5. The balanced scorecard is a strategic planning and management system that is used extensively in business and industry.

(D) Multiple Choice Questions

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1. Financial statements are the essential documents of
 - (a) Government
 - (b) Business
 - (c) Personal
 - (d) All the above
2. What is largely a study of relationship among the various financial factors in a business as disclosed by a single set of statements?
 - (a) Financial statement analysis
 - (b) Balanced scorecard
 - (c) Business analysis
 - (d) Financial analysis

(E) Fill in the Blanks

1.are the essential documents of business.
2.is largely a study of relationship among the various financial factors in a business as disclosed by a single set of statements.
3. Financial analysis is done for number of years, it is known as.....
4. Analysis is made for data covering one year's periods it is known as

16.10 KEY TO CHECK YOUR ANSWER

(C) 1. True, 2. True, 3. True, 4. True, 5. True

(D) 1. (b), 2. (a)

(E) 1. Financial statements, 2. Financial statement analysis, 3. horizontal analysis, 4. Vertical analysis

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16.12 SUGGESTED READINGS

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16.13 TERMINAL QUESTIONS

1. Discuss the need for financial statement analysis.

UNIT 17

INTERPRETATION OF FINANCIAL STATEMENTS

Structure:

- 17.1 Introduction
- 17.2 Interpretation of Financial Statements
- 17.3 Comparative Income Statement Analysis
- 17.4 Comparative Balance Sheet Analysis
- 17.5 Common-size Financial Statements Analysis
- 17.6 Trend Analysis
- 17.7 Summary
- 17.8 Glossary
- 17.9 Check Your Progress (Multiple Choice/Objective Type Questions)
- 17.10 Key to Check Your Answer
- 17.11 Bibliography
- 17.12 Suggested Readings
- 17.13 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Interpretation of Financial Statements

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17.1 INTRODUCTION

The term “interpretation” can be understood as the explanation of the meaning and significance of the financial data, so simplified with a view to throw light on the profitability and financial position of an enterprise. Thus, analysis and interpretation of financial statements is the process of classifying the facts and figures given in the financial statements into simple understandable component or elements and establishing the relationship between the elements, explaining the significance of the relationship between the classified component with a view to provide a full picture of the profitability and the financial position of the an enterprise.

17.2 INTERPRETATION OF FINANCIAL STATEMENTS

Interpretation of financial statements is the process of classifying the facts and figures given in the financial statements into simple understandable component or elements, and establishing the relationship between the elements, explaining the significance of the relationship between the classified component with a view to provide a full picture of the profitability and the financial position of the an enterprise.

Types of Analysis and Interpretation of Financial Statements

Financial Statements can be analyzed by using the any one of the following method.

1. Comparative financial statement analysis.
2. Common-size statement analysis.
3. Trend analysis
4. Ratio analysis.
5. Fund flow analysis.
6. Cash flow analysis.

Comparative Financial Statements

Under this method the financial statements of the different period of the same concern will be compared in order to derive significant changes in the financial and profitability position of the concern. It denotes the changes (i.e increase or decrease) in the financial figures between two or more years, in terms of money value and as well as in term of percentages. In other words, they are those financial statements which summarizes and present relative accounting data for a number of years, incorporating therein the changes in individual items of accounting figures.

Just by comparing the current year financial statement with the one previous year financial statement may not be sufficient to understand the true and fair financial

efficiency and progress of the concern. In order to ensure effective and proper analysis and interpretation, it is expected to compare the figures of two or more preceding years, with the current year. That means, for proper analysis and interpretation, the comparative financial statements have to be prepared with the figures of two or more preceding years. It will bring out the trend change in the financial position as well as the profitability position of the concern.

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Comparative Statement Analysis can be:

- (i) Comparative Income Statement Analysis
- (ii) Comparative Balance Sheet Analysis

Objectives or Purposes of Comparative Financial Statements

1. To make the data simpler and more understandable.
2. To ascertain the changes occurring year by year in financial position and performance of the enterprise.
3. To find out the strength and weakness of liquidity, solvency and profitability.
4. To help the management in forecasting and planning.

17.3 COMPARATIVE INCOME STATEMENT ANALYSIS

Illustration – 1

Prepare comparative income statement with the help of the following information.

<i>Details</i>	<i>2014</i>	<i>2015</i>
Sales	₹ 10,00,000	₹ 16,00,000
Cost of goods sold	75% of sale	80% of sales
Indirect expenses	40% of gross profit	30% of gross profit
Income tax	55% of profit before tax	50% of profit before tax

Solution:

Comparative Income Statement

<i>Details</i>	<i>2014</i>	<i>2015</i>	<i>Increase or Decrease</i>	<i>% of Increase Decrease</i>
Sales	10,00,000	16,00,000	6,00,000	37.5
Less: Cost of goods sold	7,50,000	12,80,000	5,30,000	41.4

Gross Profit	2,50,000	3,20,000	70,000	21.88
<i>Less: Indirect expenses</i>	1,00,000	96,000	4,000	4.16
Operating Profit	1,50,000	2,24,000	74,000	33.03
<i>Less: Income tax</i>	82,500	1,12,000	29,500	26.34
Profit After Tax	67,500	1,12,000	44,500	38.85

Illustration – 2

The information given below was taken from the financial statements of Shakthi Corporation. During 2015, the corporation has made the purchases from a new supplier,

	2015 (₹)	2014 (₹)
Gross profit on sales	2,40,000	1,50,000
Net income as a percentage on sales	5%	10%
Net income	40,000	60,000

You are required to prepare a condensed comparative income statement showing as many details as possible and point out the favourable and unfavourable trends.

Solution:

Particulars	2014	2015	Increase/ Decrease	% Increase/ Decrease
Sales	6,00,000	8,00,000	2,00,000	33.33
(2015: 40,000/5%) (2014: 60,000/10%)				
<i>Less: Cost of goods sold</i>	4,50,000	5,60,000	1,10,000	24.44
Gross Profit	1,50,000	2,40,000	90,000	60.00
<i>Less: Operating expenses</i>	90,000	2,00,000	1,10,000	122.22
Net Profit	60,000	40,000	(20,000)	(33.33)

1. Sales in year 2015 has increased by 33.33% in comparison with 2014 and the cost of goods sold has increased by only 24.44% thereby having a favourable impact on Gross profit.
2. The operating expenses have increased by 122.22% thereby resulting in the fall of Net Profit by ₹20,000.

Illustration – 3

From the following Profit and Loss A/c for the years ended 31.12.2012 and 31.12.2011, prepare a comparative income statements:

<i>Particulars</i>	<i>2010</i>	<i>2011</i>	<i>Particulars</i>	<i>2010</i>	<i>2011</i>
To Cost of goods sold	72,000	78,000	By Sales	1,00,000	1,30,000
To Depreciation	5,000	6,000	By Dividend	20,000	10,000
To Selling and Distribution exp.	8,000	12,000	By Interest on investments	10,000	-
To Interest on debt	15,000	14,000			
To Provision for taxation	15,000	15,000			
To Net profit	15,000	15,000			
	1,30,000	1,40,000		1,30,000	1,40,000

Solution:

Comparative Income Statement

<i>Particulars</i>	<i>2010</i> ₹	<i>2011</i> ₹	<i>Increase or Decrease in ₹</i>	<i>Increase or Decrease in %</i>
Sales	1,00,000	1,30,000	+30,000	+30%
Less: Cost of goods sold	72,000	78,000	+6,000	+8.33%
Gross Profit	28,000	52,000	+24,000	+85.71%
Less: Selling and Distribution Exp.	8,000	12,000	+4,000	+50%
Operating profit	20,000	40,000	+20,000	+100%
Less: Interest and debt	15,000	14,000	-1,000	-6.67%
Depreciation	5,000	6,000	+1,000	+20%
Profit before tax	0	20,000	+20,000	0
Less: Provision for taxation	15,000	15,000	0	0
Profit after tax	-15,000	5,000	+20,000	-133%
Add: Dividends	20,000	10,000	-10,000	-50%
Interest on investments	10,000	-	-10,000	-100%
Net profit	15,000	15,000	0	0

Illustration – 4

Prepare a Comparative Income Statement from the following:

<i>Particulars</i>	<i>As at 31-3-2014</i> ₹	<i>As at 31-3-2015</i> ₹
Sales	21,50,000	25,00,000
Cost of goods sold	13,00,000	14,50,000
Operating Expenses:		
Administrative Expenses	2,10,000	1,80,000

Selling Expenses	1,90,000	2,50,000
Non-operating Expenses:		
Interest	1,40,000	1,20,000
Income Tax	1,70,000	2,30,000

Solution:**Comparative Income statement**

<i>Particulars</i>	<i>Years</i>		<i>↑ or ↓ in</i>	<i>↑ or ↓ in</i>
	<i>2014</i>	<i>2015</i>	<i>Amount</i>	<i>Percent</i>
Net Sales	21,50,000	25,00,000	+3,50,000	16.28
Less: Cost of goods sold	13,00,000	14,50,000	+1,50,000	11.54
Gross Profit	8,50,000	10,50,000	+2,00,000	+23.53
Less: Operating expenses:				
Administrative expenses	2,10,000	1,80,000	−3,00,000	14.29
Selling expenses	1,90,000	2,50,000	+60,000	31.58
Total Operating expenses	4,00,000	4,30,000	+30,000	7.5
Operating profit	4,50,000	6,20,000	1,70,000	37.78
(G.P-T.O. expenses)				
Less: Other deduction				
Interest paid	1,40,000	1,20,000	−20,000	−14.29
Net profit before tax	3,10,000	5,00,000	1,90,000	61.29
Less: Income tax	1,70,000	2,30,000	60,000	35.29
Net profit after tax	1,40,000	2,70,000	1,30,000	92.86

Illustration – 5

From the following data prepare Comparative Income Statement and submit a report to the General Manager, NSK Ltd., on your findings and suggestions.

<i>Year</i>	<i>Net Sales</i>	<i>Cost of Goods</i>	<i>Operating</i>	<i>Non Operating</i>	<i>Non</i>	<i>Taxes</i>
	<i>(₹)</i>	<i>Sold (₹)</i>	<i>Expenses</i>	<i>Expenses</i>	<i>Operating</i>	<i>(₹)</i>
			<i>(₹)</i>	<i>(₹)</i>	<i>Income (₹)</i>	
2014	1,85,400	78,560	36,450	12,500	24,000	12,400
2015	1,94,840	82,640	38,210	13,800	32,000	16,500

Solution:**Comparative Income Statement**

<i>Particulars</i>	<i>2014</i>	<i>2015</i>	<i>↑ or ↓ in</i>	<i>↑ or ↓ in</i>
	<i>₹</i>	<i>₹</i>	<i>Amount</i>	<i>Percent</i>
Net Sales	1,85,400	1,94,840	+9,440	5.09

Less: Cost of Goods Sold	78,560	82,640	+4,080	5.19
Gross profit	1,06,840	1,12,200	+5,360	5.02
Less: Operating Expenses	36,450	38,210	+1,760	4.83
Operating profit	70,390	73,990	+3,600	5.11
Less: Non-operating expenses	12,500	13,800	+1,300	10.4
Profit before tax	57,890	60,190	+2,300	3.97
Less: Taxes	12,400	16,500	+4,100	33.06
Profit After tax	45,490	43,690	-1,800	-3.96
Add: Non-Operating income	24,000	32,000	+8,000	33.33
Net Profit	69,490	75,690	+6,200	8.92

Illustration – 6

Following are income statements of Star Ltd. Mumbai for the years 2015-16.

Prepare comparative income statement and comment on the profitability of the company.

Trading and Profit & Loss Account

Particulars	31.3.15	31.3.16	Particulars	31.3.15	31.3.16
To Opening stock	85,000	2,00,000	By Sales	10,00,000	12,00,000
To Purchases	5,00,000	5,50,000	By Closing stock	2,00,000	2,25,000
To Wages	60,000	80,000	By Income from investment	12,000	15,000
To Salaries	42,000	64,000	By dividend received	5,000	7,500
To Rent & taxes	35,000	40,000			
To Depreciation	40,000	60,000			
To Selling expenses	12,000	12,000			
To Discount allowed	5,000	7,000			
To loss on sale of plant	-	8,000			
To Interest paid	12,000	14,000			
To Net Profit	4,26,000	4,12,500			
	12,17,000	14,47,500		12,17,000	14,47,500

Solution:**Comparative Income Statements of Star Ltd.**

Particulars	31.3.15	31.3.16	↑ or ↓ in Amount	↑ or ↓ in Percentage
Net Sales	10,00,000	12,00,000	2,00,000	20%
Less: Cost of goods sold	4,45,000	6,05,000	1,60,000	35.95%
Gross Profit	5,55,000	5,95,000	40,000	7.20%
Less: Operating Expenses				
Salaries	42,000	64,000	22,000	52.38%

Rent & Rates	35,000	40,000	5,000	14.28%
Depreciation	40,000	60,000	20,000	50%
Selling Expenses	12,000	12,000	-	-
Discount allowed	5,000	7,000	2,000	40%
Total Operating expenses	1,34,000	1,83,000	49,000	36.56%
Net operating profit	4,21,000	4,12,000	-9,000	-2.13%
<i>Add: Non-operating incomes</i>				
Income from investment	12,000	15,000	3,000	25%
Dividend received	5,000	7,500	2,500	50%
	17,000	22,500	5,500	32.35%
Total Income	4,38,000	4,34,500	-3,500	-0.79%
<i>Less: Non-operating expenses</i>				
Loss on sale of plant	-	8,000	8,000	-
Interest paid	12,000	14,000	2,000	16.67%
Total Non-operating expenses	12,000	22,000	10,000	83.33%
Net profit before tax	4,26,000	4,12,500	-13,500	-3.16%

Calculation of Cost of Goods Sold

<i>Particulars</i>	<i>31.03.15</i>	<i>31.03.16</i>
Opening stock	85,000	2,00,000
<i>Add: Purchases</i>	<i>5,00,000</i>	<i>5,50,000</i>
Wages	60,000	80,000
Total	6,45,000	8,30,000
<i>Less: Closing stock</i>	<i>2,00,000</i>	<i>2,25,000</i>
Cost of goods sold	4,45,000	6,05,000

Comments:

The gross profit has increased in 2016 as compared to 2015 by 7.20% but the cost of goods sold has increased by 35.95% in the same period due to which it is not proportionality decreased along with increase in sale i.e., 20%. Therefore, the company should keep cost of goods sold under check/control which will help to increase the gross profit rate in a better way.

Operating expenses have increased in 2016 as compared in 2015 which resulted in decrease in operating profit which is not a good sign of profitability.

The non-operating incomes have increased in 2016 as compared to 2015, but non-operating expenses are increased in 2016 as compared to 2015. The net result of non-operating items has decreased in 2016 as compared to 2015.

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$$\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

$$\text{For year 2015} = \frac{4,26,000}{10,00,000} \times 100 = 42.6\%$$

$$\text{For year 2016} = \frac{4,12,500}{12,00,000} \times 100 = 34.37\%$$

The company has high rate of net profit ratio in both the years i.e., 42.6% in 2015 and 34.37% in 2016 which is a good sign but net profit ratio has decreased by 8 % in 2016 which is not a good sign of profitability.

Overall the growth is decreased in 2016 as compared to 2016 and the probability rate is not good and encouraging when compared to 2016.

17.4 COMPARATIVE BALANCE SHEET ANALYSIS

Illustration – 7

The Balance Sheets of Sri Gopal and Co. Ltd. for the year 2014 and 2015 are given below:

	31-12-2014	31-12-2015
<i>Liabilities</i>		
Equity share capital	2,00,000	2,50,000
10% Preference.share capital	2,00,000	1,50,000
Reserve fund	80,000	1,00,000
Profit & Loss Account	1,00,000	1,50,000
12% Debentures	2,00,000	3,00,000
Creditors	1,00,000	1,20,000
Bank Overdraft	50,000	20,000
	9,30,000	10,90,000
<i>Assets</i>		
Building	3,00,000	3,20,000
Machinery	1,50,000	1,80,000
Furniture	40,000	35,000
Investment	1,00,000	1,50,000
Stock	1,50,000	2,00,000
Debtors	1,00,000	1,20,000
Cash at Bank	90,000	85,000
	9,30,000	10,90,000

You are required to comment on the financial position of business with the help of comparative Balance sheet technique.

Solution:

Comparative Balance Sheet

<i>Particulars</i>	<i>Years</i>		<i>Increase or Decrease</i>	
	<i>31-12-14</i>	<i>31-12-15</i>	<i>In amount</i>	<i>In %</i>
<i>Current Assets:</i>				
Stock	1,50,000	2,00,000	50,000	33.33
Debtors	1,00,000	1,20,000	20,000	20.00
Cash and Bank	90,000	85,000	(5,000)	(5.56)
Total	3,40,000	4,05,000	65,000	19.12
<i>Fixed Assets:</i>				
Building	3,00,000	3,20,000	20,000	6.67
Machinery	1,50,000	1,80,000	30,000	20.00
Furniture	40,000	35,000	(5,000)	(12.50)
Total	4,90,000	5,35,000	45,000	9.18
<i>Investments:</i>	1,00,000	1,50,000	50,000	50.00
Total	1,00,000	1,50,000	50,000	50
<i>Total Assets:</i>	9,30,000	10,90,000	1,60,000	17.20
<i>Loan Funds:</i>				
12% Debentures	2,00,000	3,00,000	1,00,000	50
Total	2,00,000	3,00,000	1,00,000	50
<i>Current Liabilities:</i>				
Creditors	1,00,000	1,20,000	20,000	20.00
Bank overdraft	50,000	20,000	(30,000)	(60.00)
Total	1,50,000	1,40,000	(10,000)	(6.67)
<i>Shareholder's Funds:</i>				
Equity Share capital	2,00,000	2,50,000	50,000	25.00
10% Preference				
Share capital	2,00,000	1,50,000	(50,000)	(25.00)
Reserve Fund	80,000	1,00,000	20,000	25.00
P/L Account	1,00,000	1,50,000	50,000	50.00
Total	5,80,000	6,50,000	70,000	12
<i>Total Liabilities</i>	9,30,000	10,90,000	1,60,000	55

Comment on the Financial position: The current ratio is 2.26:1 in year ending 31.12.14 and 2.89 in year ending 31.12.15. It can be concluded the short term financial position of the company is good in both the years. The liquid ratio of the company is 1.27 in year 2014 and 1.46 in year 2015. In both the years, the liquid ratio is more than the ideal ratio of 1:1.

The fixed assets of the company increased by 45,000 and on the other hand, the loan funds have increased by ₹ 1,00,000. This indicates that the company uses long term funds to finance its fixed assets. Also, part of the loan funds have been used to finance current assets.

NOTES

The overall financial position of the company is satisfactory.

Illustration – 8

The following are the Balance Sheets of a concern for the year 2015 and 2016. Prepare a comparative Balance Sheet and study the financial position of the concern.

X Co. Ltd.

	2015	2016		2015	2016
Equity share capital	12,00,000	16,00,000	Land and building	7,40,000	5,40,000
Reserves and surplus	6,60,000	4,44,000	Plant and Machinery	8,00,000	12,00,000
Debentures	4,00,000	6,00,000	Furniture and Fixtures	40,000	50,000
Long term loans			Other fixed assets	50,000	60,000
on mortgage	3,00,000	4,00,000	Cash in hand and		
Bills payable	1,00,000	90,000	at bank	40,000	1,60,000
Sundry creditors	2,00,000	2,40,000	Bills Receivable	3,00,000	1,80,000
Other current			Sundry Debtors	4,00,000	5,00,000
Liabilities	10,000	20,000	Stock	5,00,000	7,00,000
			Prepaid expenses	-	4,000
	28,70,000	33,94,000		28,70,000	33,94,000

Solution:**Comparative Statement as on 31.12.2015 and 31.12.2016**

Particulars	2015	2016	Increase/Decrease Percentage	
I. Assets:				
1. Fixed Assets:				
Land and Building	7,40,000	5,40,000	-2,00,000	-27.03%
Plant and Machinery	8,00,000	12,00,000	+4,00,000	50%
Furniture and Fixtures	40,000	50,000	+10,000	25%
Other fixed assets	50,000	60,000	+10,000	20%
(a) Total fixed assets	16,30,000	18,50,000	+2,20,000	13.05%
2. Current assets:				
Cash in hand and at bank	40,000	1,60,000	+1,20,000	+300%
Bills receivable	3,00,000	1,80,000	-1,20,000	-40%

Sundry debtors	4,00,000	5,00,000	+1,00,000	+25%
Stock	5,00,000	7,00,000	+2,00,000	+40%
Prepaid expenses	-	4,000	4,000	
(b) Total Current liabilities	12,40,000	15,44,000	+3,04,000	+24.52%
Total Assets (a + b)	28,70,000	33,94,000	+5,24,000	+18.26%
II. Liabilities:				
1. Share holders fund:				
Equity share capital	12,00,000	16,00,000	+4,00,000	+33.33%
Reserve and Surplus	6,60,000	4,44,000	-1,16,000	-17.57%
(a) Total Shareholders Fund	18,60,000	20,44,000	+1,84,000	+9.89%
2. Long term debt:				
Debentures	4,00,000	6,00,000	+2,00,000	+50%
Long term loan	3,00,000	4,00,000	+1,00,000	+33.33%
Total long term debt	7,00,000	10,00,000	+3,00,000	+42.86%
3. Current liabilities:				
Bills payable	1,00,000	90,000	-10,000	-10%
Sundry creditors	2,00,000	2,40,000	+40,000	+20%
Other current liabilities	10,000	20,000	+10,000	+100%
(b) Total current liabilities	3,10,000	3,50,000	+40,000	+12.90%
Total Liabilities (a + b + c)	28,70,000	33,94,000	+5,24,000	+18.26%

Interpretation:

1. During the year 2016 the total fixed assets has been increased by ₹ 1,10,000 i.e. 13.50%. Accordingly shareholders fund increased by 1,84,000 and long term debt increased by ₹ 3,00,000. This indicate that the policy of the concern is to finance its fixed assets through long term sources of finance, thereby not affecting the working capital.
2. The current assets have increased by ₹ 3,04,000 i.e. 24.52% and the current liabilities have increased only by ₹ 40,000 i.e., 12.90%. This indicates that the company has raised long term finance even for current assets. This results in improvement in the working capital position.
3. The cash was increased by ₹ 1,20,000 and debtors have increased by ₹ 1,00,000. This further conforms that the company is in good liquid position.
4. The reserve and surplus have decreased by ₹ 2,16,000 i.e., 32.73% which shows that the company has utilized reserves for working capital

purpose. Thereby it indicate that the company is not in a good profitability position.

Conclusion: The overall financial position of a company is satisfactory. The working capital position of a company has improved.

Illustration – 9

Following is the Balance sheet of Global Exports as on 31-3-2011 and 31-3-2012. You are required to prepare the comparative statement and comment on the financial position of the concern.

<i>Liabilities</i>	<i>31.3.2011</i>	<i>31.3.2012</i>	<i>Assets</i>	<i>31.3.2011</i>	<i>31.3.2012</i>
Share Capital	12,00,000	10,00,000	Fixed Assets		
Reserves and Surplus	20,000	25,000	Building	3,00,000	2,55,000
Secured Loans	45,000	30,000	Machinery	4,90,000	3,25,000
Unsecured Loans	2,00,000	2,50,000	Current Assets		
Current Liabilities	1,25,000	1,50,000	Stock	3,00,000	3,75,000
			Debts	3,00,000	
			Cash	2,00,000	
	15,90,000	14,55,000		15,90,000	14,55,000

Solution:

Comparative Balance Sheet of Global Exports

<i>Particulars</i>	<i>31/03/2011</i>	<i>31/03/2012</i>	<i>↑ or ↓ in</i>	<i>↑ or ↓ in</i>
	<i>₹</i>	<i>₹</i>	<i>Amount</i>	<i>in %</i>
Liabilities				
(a) Share capital	12,00,000	10,00,000	-2,00,000	-16.666
Total (a)	12,00,000	10,00,000	-2,00,000	-16.666
(b) Reserves and Surplus	20,000	25,000	+5,000	+25
Total (b)	20,000	25,000	+5,000	+25
(c) Long term Liabilities				
Secured loans	45,000	30,000	-15,000	-33.333
Unsecured Loans	2,00,000	2,50,000	+50,000	+25
Total (c)	2,45,000	2,80,000	+35,000	+14.285
(d) Current Liabilities	1,25,000	1,50,000	+25,000	+20
Total (d)	1,25,000	1,50,000	+25,000	+20
Total Liabilities (a + b + c + d)	15,90,000	14,55,000	+1,35,000	+8.49
Assets:				
Fixed Assets				
Building	3,00,000	2,55,000	-45,000	-15
Machinery	4,90,000	3,25,000	-1,65,000	-33.6735
Total Fixed Assets (a)	7,90,000	5,80,000	-2,10,000	-26.5823

Current Asset				
Stock	3,00,000	3,75,000	75,000	25
Debtors	2,50,000	3,00,000	50,000	20
Cash	2,50,000	2,00,000	–50,000	–20
Total (b)	8,00,000	8,75,000	75,000	9.375
Total Assets (a + b)	15,90,000	14,55,000	1,35,000	8.49

Conclusions or Interpretation of the financial statement:

- There has been overall increase in the Current Asset of ₹ 75,000, which indicates the strength of the short-term solvency position of the concern.
- It is found that there is fixed assets decreased by ₹ 2,10,000 that is not a healthy sign of long-term solvency and Resource base of the concern.
- There has been an increase in the Current Liabilities by ₹ 25,000 that means their immediate obligation has increased in the short term. However, since it is supported by increase in Current Asset by ₹ 75,000 it is a favorable development in the company.
- It also clear in the Balance sheet that there is increase in the Reserves and Surplus of the Company by ₹ 5,000.

Illustration – 10

Following is the Balance sheet of J.K Ltd as on 31-3-2011 and 31-3-2012. You are required to prepare the comparative statement and comment on the financial position of the concern

Liabilities	31/03/2011	31/03/2012	Assets	31/03/2011	31/03/2012
Share capital	1,00,000	1,25,000	Fixed Assets		
Reserves and Surplus	20,000	25,000	Building	75,000	1,50,000
8% Debentures	45,000	30,000	Furniture	2,00,000	2,40,000
Longterm Borrowings	2,00,000	2,50,000	Current Assets		
Creditors	1,25,000	1,50,000	Stock	1,00,000	35,000
Bills Payable	45,000	50,000	Debtors	40,000	1,00,000
Bank Overdraft	12,500	15,000	Cash	1,32,500	1,20,000
5,47,500	6,45,000		5,47,500	6,45,000	

Solution:

Comparative Statement as on 31-3-2011 and 31-3-2012

Particulars	31/03/2011	31/03/2012	↑ or ↓ in	↑ or ↓
	₹	₹	Amount ₹	in %
Liabilities:				
(a) Share capital	1,00,000	1,25,000	+25,000	+25
Total (a)	1,00,000	1,25,000	+25,000	+25
(b) Reserves & Surplus	20,000	25,000	+5,000	+25

	Total (b)	20,000	25,000	+5,000	+25
(c) Long term Liabilities					
8% Debentures		45,000	30,000	-15,000	-33.333
Long term borrowings		2,00,000	2,50,000	+50,000	+25
Total (c)		2,45,000	2,80,000	+35,000	+14.285
(d) Current Liabilities					
Creditors		1,25,000	1,50,000	+25,000	+20
Bills payable		45,000	50,000	-5,000	+11.11
Bank overdraft		12,500	15,000	+2,500	+20
Total (d)		1,82,500	2,15,000	+32,500	+17.80
Total Liabilities (a + b + c + d)		5,47,500	6,45,000	+97,500	+17.80
Assets:					
a) Fixed Assets					
Building		75,000	1,50,000	75,000	100
Furniture		2,00,000	2,40,000	40,000	20
b) Current Assets Total (a)		2,75,000	3,90,000	1,25,000	45.45
Stock		1,00,000	35,000	-65,000	-65
Debtors		40,000	1,00,000	60,000	150
Cash		1,32,500	1,20,000	-12,500	-9.433
Total (b)		2,72,500	2,55,000	-17,500	-6.422
Total (a + b)		5,47,500	6,45,000	97,500	+17.80

Conclusions or Interpretation of the financial statement:

- There has been overall increase in the Fixed Asset of ₹ 1,10,000, which is financed by the further equity issue and long-term borrowings. It indicates the sound financial policy of the concern.
- There has been overall decrease in the Current Asset of ₹ 17,500, and increase in Current Liabilities of ₹ 32,500. That means the companies Short-term solvency position is not favorable. It is always ideal to have current ratio of 2:1 i.e., for every rupee of Current liabilities there must be at least two rupee of current asset with the company so that it can meet its immediate financial obligation satisfactory.
- The reserves and surplus has increased by ₹ 5,000 which indicates good profitability of the concern. Overall, the financial position and profitability of the company is satisfactory.

17.5 COMMON-SIZE FINANCIAL STATEMENTS ANALYSIS

In Common-size financial statements the data or figures presented in the financial statements are converted into percentages, taking some common base. The total of Assets or Liabilities and capital is taken as 100% and all the items in the balance

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sheet are expressed as a percentage of this total. In case of the common size income statement, the Net sales figure is taken as 100% and all other items of the income statement are expressed as a percentage of Net Sales.

Common-size financial statements mainly include -

1. Common-Size Income Statement and
2. Common-Size Balance Sheet

1. Common-Size Income Statement

In case of common size income statement, the Net sales figure is taken as 100% and all other items of the income statement are expressed as a percentage of Net Sales. It enables to know relative contribution of each element of the income statement on sales and profit of the concern. It also facilitates for the effective controlling of the operations so as optimize the return on investments.

Illustration – 11

Prepare a Common size Income statement and give your comments.

<i>₹ in 000's</i>	<i>Sales</i>	<i>Cost of goods sold</i>	<i>Admn. Expenses</i>	<i>Selling Expenses</i>	<i>Net profit</i>
31.3.2015	1,000	600	150	100	150
31.3.2016	1,500	750	225	175	350

Solution:

<i>Particulars</i>	<i>31.3.2015</i>		<i>31.3.2016</i>	
	<i>Amount</i>	<i>%</i>	<i>Amount</i>	<i>%</i>
Sales	1,000	100%	1,500	100%
Less: Cost of Goods sold	600	60%	750	50%
Gross profit (a)	400	40%	750	50%
Less: Operating expenses				
Admn expenses	150	15%	225	15%
Selling expenses	100	10%	175	11.67%
Total Operating expenses (b)	250	25%	400	26.67%
Net profit (a - b)	150	15%	350	23.33%

Comments:

- (a) Compared to the year 2015, in the year 2016, the cost of goods sold has decreased. It is only 50% of sales of against 60% of sales in 2015.
- (b) Due to decrease in cost of goods sold, the gross profit has increased from earlier 40% of sales to 50% of sales.

- (c) Among the operating expenses, selling expense has increased from 10% to 11.67% however, this increase has been off set by increase in G/P, thereby ultimately increasing the net profit from the earlier 15% to 23.33% in 2016.

NOTES

Illustration – 12

Following is the details of M/S BSL as on 31-3-2013 and 31-3-2014. You are required to prepare the Common-Size Income Statement for the year ending 31-3-2013 and 31-3-2014 and comment on the financial position of the concern.

<i>Particulars</i>	<i>31/03/2013</i>	<i>31/03/2014</i>
Sales	3,50,000	4,50,000
Cost of Goods Sold	2,75,000	4,00,000
Operating Expenses	11,000	22,500
Office expenses	4,500	15,000
Selling expenses	2,500	3,000
Distribution expenses	1,250	1,000
Financial expenses	10,000	12,500
Tax rate is 35%		

Solution:**Common-Size Income Statement for the year ending 31-3-2013 and 31-3-2014**

Particulars	31/03/2013	%	31/03/2014	%
Sales	3,50,000	100.00%	4,50,000	100.00%
<i>Less:</i> Cost of Goods Sold	2,75,000	78.57%	4,00,000	88.89%
Gross Profit	75,000	21.43%	50,000	11.11%
<i>Less:</i> Operating expenses	11,000	3.14%	22,500	5.00%
Office expenses	4,500	1.29%	15,000	3.33%
Selling expenses	2,500	0.71%	3,000	0.67%
Distribution expenses	1,250	0.36%	1,000	0.22%
Net Operating Profit	55,750	15.93%	8,500	1.89%
<i>Less:</i> Financial expenses	10,000	2.86%	12,500	2.78%
Net Profit Before Tax (EBT)	45,750	13.07%	–4,000	–0.89%
<i>Less:</i> Tax	16,012.5	4.58%	0	0.00%
Net Profit After Tax (PAT)	29,737.5	8.50%	–4,000	–0.89%

From the above statement, it is clear that the Gross Profit has decreased in the year 2014 (11.11%) as compared to 2013 (21.43%). It is due to increase in the cost of goods sold which was ₹ 2,75,000 (78.57%) in the year 2003, which has increased to ₹ 4,00,000 (88.89%) in 2014. It is also found that the proportion of increase in cost of goods sold is higher than the proportion of increase in sales of

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the concern. There is net fall in the profitability position, as there is increase in operating and non-operating expenses of the concern.

Necessary measures have to be taken by the company to reduce the cost of goods sold and other operating non-operating expenses.

Illustration – 13

Following is the details of Gallant Ltd. as on 31-3-2015 and 31-3-2016. You are required to prepare the Common-Size Income Statement for the year ending 31-3-2015 and 31-3-2016 and comment on the financial position of the concern

<i>Particulars</i>	<i>31/03/2015</i>	<i>31/03/2016</i>
Sales	45,00,000	72,00,000
Cost of goods sold	22,50,000	36,00,000
Operating expenses	1,25,000	24,50,000
Interest on loan	15,000	1,00,000
Depreciation	1,75,000	1,00,000
Advertisement expenses	45,000	75,000
Distribution expenses	10,000	-
Tax rate is 35%		

Solution:**Common-Size Income Statement for the year ending 31-3-2015 and 31-3-2016**

<i>Particulars</i>	<i>31/03/2015</i>	<i>%</i>	<i>31/03/2016</i>	<i>%</i>
Sales	45,00,000	100.00%	72,00,000	100.00%
<i>Less:</i> Cost of Goods Sold	22,50,000	50.00%	36,00,000	50.00%
Gross Profit	22,50,000	50.00%	36,00,000	50.00%
<i>Less:</i> Operating Expenses	1,25,000	2.78%	24,50,000	34.03%
Interest on loan	15,000	0.33%	1,00,000	1.39%
Depreciation	1,75,000	3.89%	1,00,000	1.39%
Advertisement expenses	45,000	1.00%	75,000	1.04%
Distribution expenses	10,000	0.44%	0	0.00%
Net Profit Before Tax (EBT)	18,80,000	41.78%	8,75,000	12.15%
<i>Less:</i> Tax	6,58,000	14.62%	3,06,250	4.25%
Net Profit After Tax (PAT)	12,22,000	27.16%	5,68,750	7.90%

Common-Size Balance Sheet

In Common-size Balance Sheet analysis, the data or figures presented in the financial statements are converted into percentages, taking some common base. The total of Assets or Liabilities and capital is taken as 100% and all the items in the balance sheet are expressed as a percentage of this total. It enables to understand the

structure of the financial position constituting the total assets and liabilities of the concern.

Illustration – 14

The Balance sheets of Karthik Company and Subash Company as on 31.12.2015 are as follows. Compare the financial position of both the firms with the help of common size balance sheets and interpret the results.

<i>Liabilities</i>	<i>Karthik Co.</i>	<i>Subash Co.</i>	<i>Assets</i>	<i>Karthik Co.</i>	<i>Subash Co.</i>
Preference share capital	1,20,000	1,80,000	Land & Bld	80,000	1,23,000
Equity share capital	1,50,000	4,00,000	Plant & M	3,34,000	6,00,000
Reserves & Surplus	14,000	18,000	Temporary Investment	1,000	40,000
Long term loans	1,15,000	1,30,000	Stock	10,000	25,000
Bills Payable	2,000	-	Book Debts	4,000	8,000
Sundry Creditors	12,000	4,000	Prepaid exp.	1,000	2,000
O/S Expenses	22,000	10,000	Cash at Bank		
Proposed Dividend	10,000	90,000	Balance	8,000	30,000
			Preliminary exp.	7,000	4,000
	4,45,000	8,32,000		4,45,000	8,32,000

Solution:

Common Size Balance Sheet

<i>Particulars</i>	<i>Karthik Co.</i>	<i>%</i>	<i>Subash Co.</i>	<i>%</i>
A. Current Assets:				
Temporary Investment	1,000	0.22	40,000	4.81
Stock	10,000	2.25	25,000	3.00
Book Debts	4,000	0.90	8,000	0.96
Prepaid Expenses	1,000	0.22	2,000	0.24
Cash and Bank Balance	8,000	1.80	30,000	3.62
Total (A)	24,000	5.39	1,05,000	12.63
B. Fixed Assets:				
Land & Building	80,000	17.98	1,23,000	14.78
Plant & Machinery	3,34,000	75.06	6,00,000	72.11
Preliminary Expenses	7,000	1.57	4,000	0.48
Total (B)	4,21,000	94.61	7,27,000	87.37
Total Assets (A + B)	4,45,000	100	8,32,000	100

A. Current Liabilities

Bills Payable	2,000	0.45	-	-
Sundry Creditors	12,000	2.70	4,000	0.48
O/S Expenses	22,000	4.94	10,000	1.20
Proposed Dividend	10,000	2.25	90,000	10.82
Total (A)	46,000	10.34	1,04,000	12.50

B. Long Term Debt

	1,15,000	25.84	1,30,000	15.63
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C. Shareholder Funds:

Preference Share Capital	1,20,000	26.97	1,80,000	21.63
Equity Share Capital	1,50,000	33.71	4,00,000	48.08
Reserves and Surplus	14,000	3.14	18,000	2.61
Total (C)	2,84,000	63.82	5,98,000	71.87
Total liabilities (A + B + C)	4,45,000	100	8,32,000	100

Intrepreation: The short term solvency position of both the companies are not satisfactory but long term solvency is satisfaction for the both the company.

Illustration – 15

Following are balance sheets of Shashi and Co. and Krian and Co. as on 31st March, 2015.

	<i>Shashi & Co.</i>	<i>Kiran & Co.</i>
Assets		
Land and buildings	40,000	60,000
Plant and Machinery	1,50,000	3,12,500
Investments	50,000	1,00,000
Stock	75,000	1,00,000
Sundry Debtors	50,000	60,000
Cash and bank balance	35,000	67,500
Total	4,00,000	7,00,000
Liabilities:		
Equity share capital	1,00,000	1,50,000
12% Debentures	50,000	1,00,000
10% preference share capital	1,00,000	1,25,0000
Reserves and surplus	50,000	60,000
Dividend provision	25,000	35,000
Sundry creditors	75,000	2,05,000
Bank overdraft	-	25,000
Total	4,00,000	7,00,000

Compare the financial position of the two companies with the help of commonsize balance sheets and comment.

Solution:

Common Size Balance Sheet

<i>Particulars</i>	<i>Shashi & Co.</i>		<i>Kiran & Co</i>	
	<i>₹</i>	<i>Increase or Decrease in %</i>	<i>₹</i>	<i>Increase or Decrease in %</i>
I. Assets				
(1) Fixed Assets:				
Land and Buildings	40,000	10%	60,000	8.57%
Plant and Machinery	1,50,000	37.5%	3,12,500	44.64%
Total fixed assets (a)	1,90,000	47.5%	3,72,500	53.21%
(2) Investment:				
	50,000	12.5%	1,00,000	14.29%
Investment (b)	50,000	12.5%	1,00,000	14.29%
(3) Current assets:				
Stock	75,000	18.75%	1,00,000	14.29%
Sundry debtors	50,000	12.5%	60,000	8.57%
Cash and Bank balance	35,000	8.75%	67,500	9.64%
Total current assets (c)	1,60,000	40%	2,27,500	32.5%
Total assets (a+b+c)	4,00,000	100%	7,00,000	100%
II. Liabilities				
(1) Shareholders fund:				
Equity share capital	1,00,000	25%	1,50,000	21.43%
Preference share capital	1,00,000	25%	1,25,000	17.86%
Reserves and surplus	50,000	12.5%	60,000	8.57%
Total shareholders funds (a)	2,50,000	62.5%	3,35,000	47.86%
(2) Long term debts				
Debentures	50,000	12.5%	1,00,000	14.29%
Total long term debts (b)	50,000	12.5%	1,00,000	14.29%
(3) Current liabilities:				
Dividend provision	25,000	6.25%	35,000	5.00%
Sundry creditors	75,000	18.75%	2,05,000	29.29%
Bank overdraft	-	-	25,000	3.57%
Total current liabilities(c)	1,00,000	25.00%	2,65,000	37.86%
Total liabilities (a+b+c)	4,00,000	100%	7,00,000	100%

*** Interpretion:**

- The above analysis reveals that the fixed assets of Shashi and Co. are 47.5% and the fixed assets of Kiran and Co. are 53.21%. It indicates that both the companies have invested more funds on fixed assets. However

Kiran and Co. has invested more funds in fixed assets than Shashi and Co.

2. In case of Shashi and Co. the current assets are 40% and current liabilities are 25%. In case of Kiran and Co. the current assets are 32.5% and current liabilities are 37.86%. It indicates that the Shashi and Co. has good working capital position compared to Kiran and Co.
3. In case of Shashi and Co. the shareholders fund is 62.5% and the outsiders is 12.5%. But in case of Kiran and Co. the shareholders fund is 47.86% and the outsider is 14.29%. However Shashi and Co. is more dependent on shareholders fund.
4. Shashi and Co. has less long term debts when compared to Kiran and Co.

*** Conclusion:** The overall financial position of both the companies is satisfactory Kiran and Co. working capital position is not good, Shashi and Co. profitability position is not sound. Hence steps have to be taken to improve the working capital position of Kiran and Co. and profitability of Shashi and Co.

Illustration – 16

From the following Balance Sheets of RKS Ltd., prepare Common Size Balance Sheet and comment upon the financial position of the company.

<i>Liabilities</i>	<i>31-03-15</i>	<i>31-03-16</i>	<i>Assets</i>	<i>31-03-15</i>	<i>31-03-16</i>
	(₹)	(₹)		(₹)	(₹)
Equity Share Capital	3,00,000	4,50,000	Land and Buildings	3,90,000	4,05,000
10% Preference Share Capital	1,50,000	1,50,000	Plant and Machinery	1,50,000	3,60,000
Reserves and Surplus	45,000	60,000	Furniture	30,000	45,000
Profit and Loss A/c	22,500	45,000	Shares in Apoorva Ltd.	37,500	75,000
12% Debentures	1,50,000	3,00,000	Government Bonds	22,500	30,000
Mortgage Loan	75,000	1,12,500	Stock	75,000	1,12,500
Bank Overdraft	15,000	30,000	Debtors	1,20,000	1,76,250
Creditors	75,000	90,000	Bills Receivable	30,000	60,000
Bills Payable	7,500	9,750	Cash and Bank		
Outstanding expenses	3,750	5,250	Balance	7,500	15,000
			Prepaid Expenses	3,750	7,500
Provision for taxation	22,500	30,000	Preliminary		

Proposed dividend	15,000	15,000	Expenses	15,000	11,250
	8,81,250	12,97,500		8,81,250	12,97,500

Solution:**Common Size Balance Sheet**

<i>Particulars</i>	<i>31-03-15</i>		<i>31-03-16</i>	
	₹	on/in%	₹	on/in%
I. Assets				
1. Fixed Assets:				
Land and Buildings	3,90,000	44.26	4,05,000	31.21
Plant and Machinery	1,50,000	17.02	3,60,000	27.75
Furniture	30,000	3.40	45,000	3.47
Total Fixed Assets (a)	5,70,000	64.68	8,10,000	62.43
2. Investment:				
Share in Apoorva Ltd.	37,500	4.26	75,000	5.78
Government Bonds	22,500	2.55	30,000	2.31
Total (b)	60,000	6.81	105,000	8.09
3. Current Assets				
Stock	75,000	8.51	1,12,500	8.67
Debtors	1,20,000	13.62	1,76,250	13.58
Bills Receivable	30,000	3.40	60,000	4.62
Cash and Bank balance	7,500	0.85	15,000	1.16
Prepaid Expenses	3,750	0.43	7,500	0.58
Total (c)	2,36,250	26.81	3,71,250	28.61
4. Miscellaneous Expenses				
Preliminary Expenses	15,000	1.70	11,250	0.87
Total (d)	15,000	1.70	11,250	0.87
Total Assets (a + b + c + d)	8,81,250	100	12,97,500	100
II Liabilities				
1. Share Holders Fund:				
Equity Share capital	3,00,000	34.04	4,50,000	34.68
10% pref. Share Capital	1,50,000	17.02	1,50,000	11.56
Reserves and surplus	45,000	5.11	60,000	4.62
Profit & Loss A/c	22,500	2.55	45,000	3.47
Total (a)	5,17,500	58.72	7,05,000	54.34
2. Long term debts				
12% Debentures	1,50,000	17.02	3,00,000	23.12
Mortgage loan	75,000	8.51	1,12,500	8.67

Total (b)	2,25,000	25.53	4,12,500	31.79
3. Current Liabilities				
Bank overdraft	15,000	1.70	30,000	2.31
Creditors	75,000	8.51	90,000	6.94
Bills payable	7,500	0.85	9,750	0.75
O/s expenses	3,750	0.43	5,250	0.40
Provision for taxation	22,500	2.55	30,000	2.31
Proposed dividend	15,000	1.70	15,000	1.16
Total (c)	1,38,750	15.74	1,80,000	13.87
Total Liabilities (a+b+c)	8,81,250	100	12,97,500	100

17.6 TREND ANALYSIS

Some times, it becomes necessary to know the trend changes in the financial position of the concern. When a concern needs to know the profitability trend of the organization only profit and loss account independently may not serve the purpose. In such case, it is necessary to prepare a statement of the profit or loss or Balance sheet for many years and taking any previous year as base the trend or changes in the financial position can be prepared. When the financial statements of a number of years are analyzed, the analysis is called trend analysis.

It is also called as horizontal analysis since it is prepared for many years taking any previous year as base year. In other words, horizontal analysis is a type of analysis in which there is comparison of the trend of each item in the financial statements over a number of years.

In the horizontal analysis, the figures of the financial statements are analyzed horizontally. The trend of each item in the financial statements is compared over a number of years. The current year's figures are compared with the figures of the or base year and the changes in each of the elements or items from the base year is computed. Such changes are denoted in terms of percentage.

It enables to find out the growth or decline percentage or the pattern of changes that are taking place in an organization. It enables managers to take necessary measures to curb the unhealthy trends in the organisations. It is also useful to Investors, Bankers and Creditors to make effective financial decisions on the company.

Trend analysis as a tool of Decision-making

Statement of trend analysis helps in many managerial decisions. It enables to find out the growth or decline percentage or the pattern of changes that are taking place in an organization. It enables managers to take necessary measures to curb

the unhealthy trends in the organisations. It is also useful to investors, Bankers and creditors to make effective financial decisions on the company. Its uses is outlined below:

- (i) Sales trend in the organization can reflect on the efficiency of the sales department.
- (ii) Sales trend enables management to take necessary steps wherever required to improve the overall operational efficiency.
- (iii) Trend on cost of operation facilitates to take decisions on cost control and improving profitability.
- (iv) Trend in the profitability reflects the overall efficiency of the organization in utilizing its resources and optimizing the return on investments.

Illustration – 17

From the following data compute trend percentages taking 2011 as base.

<i>Year</i>	<i>Sales (₹)</i>	<i>Closing Stock (₹)</i>	<i>Profit Before Tax (₹)</i>
2011	2,58,680	1,20,580	55,750
2012	3,53,460	1,25,760	63,520
2013	3,68,550	1,32,540	65,120
2014	4,12,430	1,34,780	72,460
2015	4,87,560	1,45,730	87,290

Solution:

<i>Year</i>	<i>Sales</i>	<i>Closing Stock</i>	<i>Profit Before Tax</i>
2011	100%	100%	100%
2012	137%	104%	114%
2013	142%	110%	117%
2014	159%	112%	130%
2015	188%	121%	157%

Illustration – 18

From the following information, interpret the results of operations of manufacturing concern, using trend ratios.

<i>Details</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Sales (Net)	100	90	120	150
Less: Cost of goods sold	60	60	70	80
Gross profit	40	30	50	70
Less: Operating expenses	10	10	15	20
Operating profit	30	20	35	50

<i>Less: Taxes</i>	15	10	17.5	25
Profit after tax	15	10	17.5	25

Solution:**Trend Purchase ratio (2007 taken as a base year)**

<i>Details</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Sales (net)	100	90%	120%	150%
<i>Less: Cost of goods sales</i>	100	100%	117%	133%
Gross Profit	100	75%	125%	175%
<i>Less: Operating expenses</i>	100	100%	150%	200%
Operating profit	100	67%	117%	167%
<i>Less: Taxes</i>	100	67%	117%	167%
Profit after tax	100	67%	117%	167%

Illustration – 19

From the following information compute trend ratios use 2005 as base amount in lakhs of Rupees for the year ended.

<i>Particulars</i>	<i>2005</i> ₹	<i>2006</i> ₹	<i>2007</i> ₹	<i>2008</i> ₹
Net sales	200	190	240	260
Cost of goods sold	120	117.8	139.2	145.6
Gross profit	80	72.2	100.8	114.4
Operating expenses	20	19.4	22	24
Net operating profit	60	52.8	78.8	90.4

Solution:**Trend % taking 2005 as the base year**

	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
Net Sales	200	190	240	260	100	95	120	130
<i>Less: C.O.G.S.</i>	120	117.8	139.2	145.6	100	98.17	116	121.33
Gross Profit	80	72.2	100.8	114.4	100	90.25	126	143
<i>Less: Operating exp.</i>	20	19.4	22	24	100	97	110	120
Net Operating Profit	60	52.8	78.8	90.4	100	88	131.33	150.67

Illustration – 20

Following is the details of RGS Ltd. as on and 2011, 2012 and 2013. You are required to prepare the Comparative Income Statement showing the trend of the financial position.

<i>Particulars</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>
Sales	1,00,000	2,25,000	2,75,000
<i>Less: Cost of Goods sold</i>	75,000	1,50,000	1,50,000
Gross Profit	25,000	75,000	1,25,000
Less: Operating Expenses			
Office expenses	5,000	27,500	35,000
Selling expenses	2,500	15,000	22,500
Distribution expenses	1,000	2,500	3,000
Less: Non-Operating Expenses			
Interest on Debentures	3,000	7,000	15,000
Interest on loans	7,500	10,000	25,000
Net profits	6,000	13,000	24,500

Solution:**Comparative Income Statement for the Year Ending 2011, 2012 and 2013**

	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>Trend % (Base Year 2012 = 100)</i>		
				<i>2011</i>	<i>2012</i>	<i>2013</i>
Sales	1,00,000	2,25,000	2,75,000	100	225	275
<i>Less: Cost of Goods sold</i>	75,000	1,50,000	1,50,000	100	200	200
Gross Profit	25,000	75,000	1,25,000	100	300	500
Less: Operating Expenses						
Office expenses	5,000	27,500	35,000	100	550	700
Selling expenses	2,500	15,000	22,500	100	600	900
Distribution expenses	1,000	2,500	3,000	100	250	300
Less: Non-Operating Expenses						
Interest on Debentures	3,000	7,000	15,000	100	233	500
Interest on loans	7,500	10,000	25,000	100	133	333
Net profit	6,000	13,000	24,500	100	217	408

The following conclusions can be drawn from the above analysis.

1. It is evident in the above analysis that there is increase in sales in the 2012 and 2013, which indicates efficient operations.
2. Cost of goods sold is increased in the year 2012 and 2013.
3. There is increase in the distribution expenses and non operating expenses in 2012 and 2013 that in turn has reduced the profitability of the concern.
4. The overall profitability position is not favorable and the company has to take necessary measures to reduce its cost of operations and non operating expenses.

Illustration – 21

Following is the details of Hidalgos Ltd. as on 31-3-2010, 31-3-2011 and 31-3-2012. You are required to prepare the Comparative Balance sheet showing the trend of the financial position.

<i>Particulars</i>	<i>31/03/2010</i>	<i>31/03/2011</i>	<i>31/03/2012</i>
Share capital	15,00,000	18,00,000	20,00,000
Reserves and Surplus	1,50,000	3,00,000	1,75,000
8% Debentures	45,000	90,000	40,000
Long term Bank Borrowings	2,00,000	2,50,000	2,00,000
Creditors	1,25,000	1,50,000	10,000
Bills Payable	45,000	60,000	5,000
Bank Overdraft	12,500	15,000	2,500
	20,77,500	26,65,000	24,32,500
Fixed Assets			
Building	14,50,000	17,50,000	21,75,000
Furniture	2,00,000	4,40,000	40,000
Current Assets			
Stock	1,00,000	1,85,000	1,10,000
Debtors	1,45,000	1,70,000	1,05,000
Cash	1,82,500	1,20,000	2,500
	20,77,500	26,65,000	24,32,500

Solution:

Comparative Balance Sheet as on 31-3-2010, 31-3-2011 and 31-3-2012

	<i>31/03/2010</i>	<i>31/03/2011</i>	<i>31/03/2012</i>	<i>Trend % (Base Year 2011 = 100)</i>		
	<i>2010</i>	<i>2011</i>	<i>2012</i>			
Share Capital	15,00,000	18,00,000	20,00,000	100	120	133
Reserves and Surplus	1,50,000	3,00,000	1,75,000	100	200	117
8% Debentures	45,000	90,000	40,000	100	200	89
Long term Bank Borrow.	2,00,000	2,50,000	2,00,000	100	125	100
Creditors	1,25,000	1,50,000	10,000	100	120	8

Bills Payable	45,000	60,000	5,000	100	133	11
Bank Overdraft	12,500	15,000	2,500	100	120	20
	20,77,500	26,65,000	24,32,500			
Fixed Assets						
Building	14,50,000	17,50,000	21,75,000	100	121	150
Furniture	2,00,000	4,40,000	40,000	100	220	20
Current Assets						
Stock	1,00,000	1,85,000	1,10,000	100	185	110
Debtors	1,45,000	1,70,000	1,05,000	100	117	72
Cash	1,82,500	1,20,000	2,500	100	66	1
	20,77,500	26,65,000	24,32,500			

The following conclusions can be drawn from the above analysis

1. It is evident in the above analysis that there is increase in Share capital in the 2011 and 2012, which means the company has made further public issues.
2. The company had raised further funds through issue of Debentures and borrowings from bank in the year 2011 and has redeemed in the year 2012.
3. It is found that there is decrease in Current Liabilities and increase in Current Assets in the year 2012, which indicated improvement in company's short-term solvency positions.
4. The overall financial position is satisfactory.

17.7 SUMMARY

The term "interpretation" can be understood as the explanation of the meaning and significance of the financial data, so simplified with a view to throw light on the profitability and financial position of an enterprise.

Thus, analysis and interpretation of financial statements is the process of classifying the facts and figures given in the financial statements into simple understandable component or elements, and establishing the relationship between the elements, explaining the significance of the relationship between the classified component with a view to provide a full picture of the profitability and the financial position of the an enterprise.

In Common-size Balance Sheet analysis, the data or figures presented in the financial statements are converted into percentages, taking some common base. The total of Assets or Liabilities and capital is taken as 100% and all the items in the balance sheet are expressed as a percentage of this total. It enables to understand the

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structure of the financial position constituting the total assets and liabilities of the concern.

Trend Analysis is necessary to know the trend changes in the financial position of the concern. When a concern needs to know the profitability trend of the organization only profit and loss account independently may not serve the purpose. In such case, it is necessary to prepare a statement of the profit or loss or Balance sheet for many years and taking any previous year as base the trend or changes in the financial position can be prepared. When the financial statements of a number of years are analyzed, the analysis is called trend analysis.

17.8 GLOSSARY

- (a) **Interpretation:** The term “interpretation” can be understood as the explanation of the meaning and significance of the financial data, so simplified with a view to throw light on the profitability and financial position of an enterprise.
- (b) **Common-size Balance Sheet analysis:** In Common-size Balance Sheet analysis, the data or figures presented in the financial statements are converted into percentages, taking some common base. The total of Assets or Liabilities and capital is taken as 100% and all the items in the balance sheet are expressed as a percentage of this total. It enables to understand the structure of the financial position constituting the total assets and liabilities of the concern.
- (c) **Trend Analysis:** Trend Analysis is necessary to know the trend changes in the financial position of the concern. When a concern needs to know the profitability trend of the organization only profit and loss account independently may not serve the purpose. In such case, it is necessary to prepare a statement of the Profit or Loss or Balance sheet for many years and taking any previous year as base the trend or changes in the financial position can be prepared. When the financial statements of a number of years are analyzed, the analysis is called trend analysis.
- (d) **Statement of trend analysis:** Statement of trend analysis helps in many managerial decisions. It enables to find out the growth or decline percentage or the pattern of changes that are taking place in an organization. It enables managers to take necessary measures to curb the unhealthy trends in the organizations. It is also useful to investors, Bankers and creditors to make effective financial decisions on the company.

17.9 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

NOTES**(A) Short Answer Questions**

1. What is interpretation of financial statements?
2. State the tools of financial statements analysis.
3. What is comparative balance sheet?
4. Give the meaning of comparative statement.
5. What is common size statement?
6. Give the meaning of trend analysis

(B) Extended Answer Questions

1. Discuss importance of interpretation of financial statements.
2. Explain the process of interpretation of financial statements.

(C) True or False

1. The term “interpretation” can be understood as the explanation of the meaning and significance of the financial data.
2. Common-size Balance Sheet analysis is the data or figures presented in the financial statements are converted into percentages, taking some common base.
3. Trend Analysis is necessary to known the trend changes in the financial position of the concern.
4. Statement of trend analysis helps in many managerial decisions.

(D) Multiple Choice Questions

1. The term “interpretation” can be understood as the explanation of the meaning and significance of the.....
 - (a) Financial data
 - (b) Assets
 - (c) Liability
 - (d) All the above
2. What is the data or figures presented in the financial statements are converted into percentages, taking some common base?
 - (a) Common-size Balance Sheet analysis
 - (b) Financial data
 - (c) Assets
 - (d) Liability

NOTES

(E) Fill-in-the-blanks

1. The termcan be understood as the explanation of the meaning and significance of the financial data.
2.is the data or figures presented in the financial statements are converted into percentages, taking some common base.
3. Trend Analysis is necessary to known the trend changes in theof the concern.
4. Statement of trend analysis helps in many.....

17.10 KEY TO CHECK YOUR ANSWER

(C) 1. True 2. True 3. True 4. True 5. True**(D)** 1. (a) 2. (a)**(E)** 1. “interpretation” 2. Common-size Balance Sheet analysis 3. financial position 4. managerial decisions

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17.12 SUGGESTED READINGS

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17.13 TERMINAL QUESTIONS

NOTES

1. Write short notes on: (i) Comparative Balance Sheet, (ii) Common size Balance Sheet, (iii) Trend Analysis

UNIT 18

RATIO ANALYSIS

Structure:

- 18.1 Introduction
- 18.2 Financial Analysis and Control: Ratio Analysis
- 18.3 Uses of Ratio
- 18.4 Types/Classification of Ratio
- 18.5 Limitations of Ratios
- 18.6 Practical Problems
- 18.7 Summary
- 18.8 Glossary
- 18.9 Check Your Progress (Multiple Choice/Objective Type Questions)
- 18.10 Key to Check Your Answer
- 18.11 Bibliography
- 18.12 Suggested Readings
- 18.13 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Financial Analysis and Control: Ratio Analysis

18.1 INTRODUCTION

NOTES

Ratio analysis is the process of determining and interpreting numerical relationships based on financial statements. A ratio is a statistical yardstick that provides a measure of the relationship between two variables or figures.

A financial statement depicts the financial position of the concern on a given date. To understand the financial position one should have accounting knowledge. And also many accounting statements on the apparent look do not reveal the actual solvency or profitability position of the concern. For instance the profitability of the concern cannot just be understood by looking at the net profit. It will be more meaning full if it is said in relation to the sales or capital employed in terms of percentages. Similarly operating expenses when it is expressed in relation to sales it gives more clarity for making decisions like cost control. Hence financial statements independently cannot serve the purpose of the needy people like Creditors, Bankers, Investors, and others. So the concept of ratio is more important in the modern financial transactions and managerial decisions.

Ratio is considered as one of the effective tool of financial analysis. It facilitates for interpretation of the profitability and solvency position of a concern. The term ratio, is understood as one number expressed in terms of another. It is an expression of relationship between two numbers by dividing one figure by another.

18.2 FINANCIAL ANALYSIS AND CONTROL: RATIO ANALYSIS

Meaning of Ratio Analysis

Ratio is the relationship between two accounting numbers by dividing one number by another. It is one of the effective tools of financial analysis. It indicates the relationship of accounting aspects like profit and sales, income and expenses, current assets and liabilities etc. with each other and reflects the soundness of the concern.

Ratio analysis is the technique of the computation of number of accounting ratios from the data derived from the financial statements, and comparing those with the ideal or standard ratios or the previous year's ratios or the ratios of other similar concerns. It is a technique of comparative analysis in which current year ratios are compared with the past or other organisations which are in similar line of operation so as to ascertain the financial soundness of the concern.

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Expression of Ratios*Ration can be espressed as:***(i) Time**

$$\text{Example: } \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{50,000}{25,000} = 2 \text{ times}$$

(ii) Percentage

$$\text{Example: } \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{50,000}{25,000} \times 100 = 200\%$$

(iii) Proportion

$$\text{Example: } \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{50,000}{25,000} = 2 : 1$$

- (i) It is better to express turnover ratio in 'Time'. *Example:* STR, DTR, CTR etc.
- (ii) Profitability ratio in percentage. *Example:* GPR, NPR, ROI etc.
- (iii) Liquidity and solvency ratio better to expressed in proportion. *Example:* C.R, L.R, R.R, etc.

There is no hard and fast rule expressing ratio in particular form it is convenient to expressing ratio on stated above.

Significance of Ratios

Ratio analysis has been identified as a very important tool for management accountant, facilitating several things, in the issues of simplifying financial information, measuring and studying the financial health, helping inter-firm and intra firm comparisons and above all, helping in co-ordination, communication and control which are the three C's of any-business.

1. Ratio analysis is an important and useful technique to check upon the efficiency with which working capital is being used in the enterprise. It helps the financial management in evaluating the financial position and performance of the firm.
2. Ratio helps in cost control. Through established ideal standards Ratios are very useful for measuring the performance and contributes for cost control and efficiency improvement.
3. It is a medium of communication of financial position of a concern. Financial ratios communicate the strength and financial standing of the firm to the internal and external parties.
4. Ratio analysis is very helpful in financial forecasting. A ratio relating to past sales, profits and financial position is the base for future trends.

5. Ratio facilitates for comparison. With the help of ratio analysis ideal ratios can be composed and they can be used for comparison of a particular firm's progress and performance.
6. Financial ratios are very helpful in the diagnosis and financial health of a firm. They highlight the liquidity, solvency, profitability and capital gearing, etc. of the firm. They are a useful tool of analysis of financial performance.

18.3 USES OF RATIO

Ratio analysis is one of the important tools of analyzing the financial statements. It helps in understanding the financial health and trend of a business. The utility of ratio analysis may be explained under the following heads:

1. Utility to Management

Ratio analysis helps the management in:

- (a) Formulating the policies.
- (b) Forecasting and planning.
- (c) Decision making.
- (d) Knowing the trends of business.
- (e) Measuring efficiency.
- (f) Communicating.
- (g) Controlling.

2. Utility to Shareholders and Investors

An investor would normally assess the financial position of a business before she/he invests his/her money in it. She/he is interested in the safety, security and profitability of his/her investment. Accounting ratios help the prospective investors in selecting best companies to invest their funds. Ratios enable the shareholders to evaluate the performance and future prospects of the company. On the basis of some ratios, they are able to calculate the price of their shares.

3. Utility to Creditors

The creditors or suppliers are those who supply goods to the firm on credit basis. They are interested in the liquidity position of the firm. To know the liquidity position or short term financial position, they use liquidity ratios.

4. Utility to Employees

The employees are interested in the profitability of the company. Their wages, fringe benefits, working conditions etc. are related to the profits earned by the

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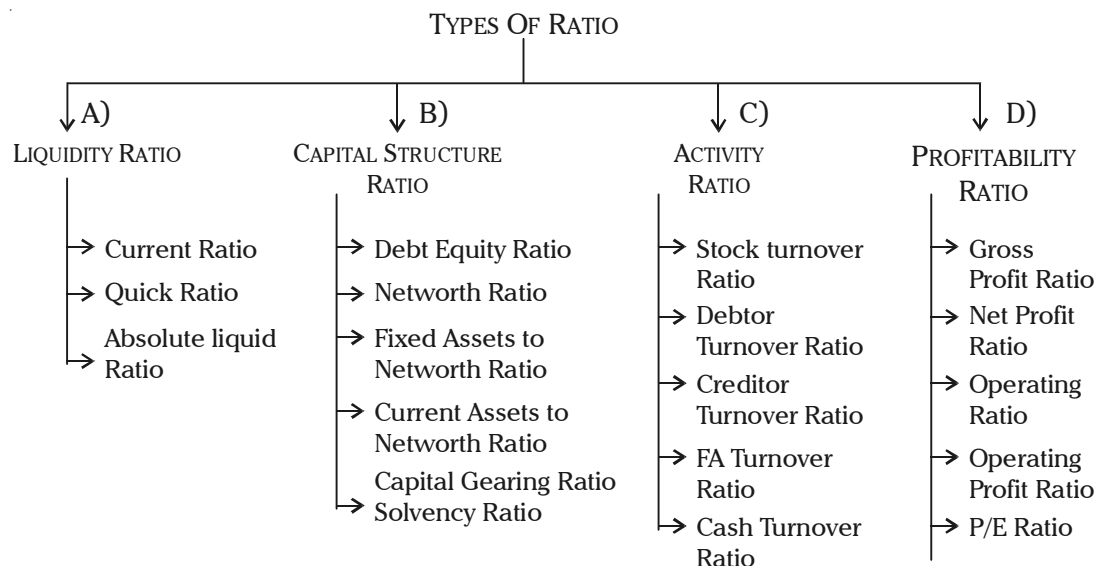
company. They want to ascertain the profitability for demanding wage increase and other benefits. For understanding the profitability of the company, profitability ratios come to their help.

5. Utility to Government

The government uses ratio analysis for studying the cost structure of the industries. On the basis of this study, the government can formulate various policies. It can implement the price control measures to protect the interest of consumers.

18.4 TYPES/CLASSIFICATION OF RATIO

Ratio can be classified as per the need and requirement of the users. Ratios are not only useful for internal users but also to many others like investors, bankers, creditors and government. In this view point, ratios can be classified as follows. On the basis of nature and significance of ratios it can be classified as follows:



Detailed understanding of ratio's are as follows:

(A) Liquidity Ratio

It is the ratio which measures the short-term solvency position of an organisation. It brings out the ability of an organisation to meet it's immediate or short term financial commitments with it's short term or liquid resources. Such ratio's are highly needful for parties like creditors, Banker's and other private lender's. It enables the lender's to know the repayment ability of an organisation with in short period.

Liquidity ratio can be broadly classified as follows:

- (i) Current Ratio
- (ii) Acid test Ratio or Quick Ratio/Liquid Ratio

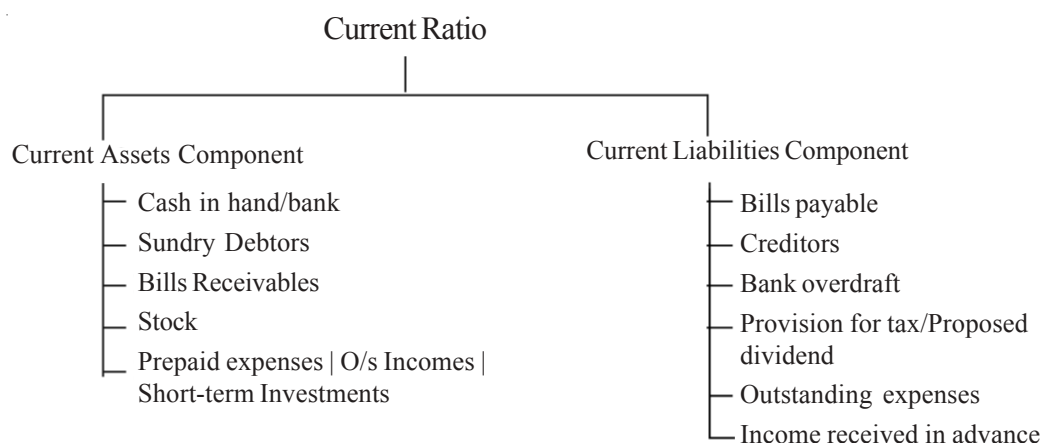
(iii) Absolute Liquid Ratio/ Cash position Ratio.

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Liquidity ratio signifies the short-term financial Capacity of an enterprise and clearly reflects the short term solvency position for investors, creditors, Banker's etc. detailed explanation of each of the liquidity ratio are as follows:

(i) Current Ratio

It is the ratio which is computed by taking into consideration the current assets and current liabilities of an organisation. Current assets and current liabilities included the following:



It is computed with the help of the following equation:

$$\text{Current Ratio} = \frac{\text{Current Asset}}{\text{Current Liability}} : \text{Ideal Ratio} = 2 : 1$$

Interpretation of Current ratio: The generally accepted current ratio or Ideal ratio is 2:1. It mean's for every one rupee of current liability, there should be Two rupee of current assets to ensure better solvency position. An organisation which has current ratio as 2 or more reflects the sufficient liquidity and enough working capital.

Illustration - 1

Calculate:

Current assets

Current ratio = 2.6:1 and current liability = 40,000

Solution:

We know that -

$$\text{Current ratio} = \frac{\text{Current Assets}}{\text{Current liabilities}} \Rightarrow \frac{2.6}{1} = \frac{\text{Current Assets}}{40,000}$$

$$= \text{Current assets} = 2.6 \times 40,000 \therefore \text{Current assets} = 1,04,000$$

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Illustration - 2

From the following calculate current ratio.

Fixed assets 5,00,000, Total assets of the company 8,00,000, Current liabilities 200,000.

Solution:

Current Asset = Total Asset – Fixed Asset

Current Assets = 8,00,000 – 5,00,000

Current Assets = 3,00,000.

Current liability given in the case ₹ 2,00,000

$$\therefore \text{Current Ratio} = \frac{\text{Current Asset}}{\text{Current Liabilities}} \text{ i.e., } \frac{3,00,000}{2,00,000} = 1.5$$

Since the ideal ratio is 2:1, it is clear that the companies short term solvency position is not satisfactory: Necessary step's should be taken to improve current asset position.

(ii) Acid Test Ratio or Quick or Liquid Ratio

Though the current Ratio reflects the liquidity position of the concern, it suffer's from serious draw backs, since it includes aspects like stock and prepaid expenses which are not, in practical, possible to realise with in short-term without financial loss. To over come this, liquidity ratio is the better reflector of the liquid or quick solvency position of an organisation.

Quick ratio is that ratio which measures the immediate solvency position of an enterprise. It establish relationship between quick assets and quick liabilities. It is computed as follows.

$$\text{Quick or Acid Test Ratio} = \frac{* \text{Quick Assets}}{** \text{Current Liabilities}}$$

Ideal or standard quick ratio, which is generally expected is 1:1. It mean's for every quick liability there should be at least once quick asset.

* **Quick Assets:** It includes all those Current Assets minus stock and prepaid expenses because, these two assets cannot be immediately realised without financial loss.

\ Quick Asset = Current Assets – (Stock + Prepaid expenses)

** **Quick or Current liabilities:** Generally current liabilities includes all aspects of current liability as specified in the previous topic discussion. But some scholars is of the opinion that current liability for this purpose should not include Bank over draft since it is has permanent arrangement

in the Bank. But it is advisable to consider it as the immediate obligation, which has to be met with the Quick Assets.

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Illustration - 3

From the following compute Quick Ratio of an organisation.

Cash in hand = 5,000

Bills payable = 10,000

Cash at Bank = 3,000

Sundry creditors = 5,000

Stock = 15,000

Out standing expenses = 25,000

Sundry Debtors = 20,000

Bank loan (short term) = 15,000

Prepaid expenses = 2,000

Solution:

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

Quick Assets = Current Assets – (Stock + Prepaid expenses)

Current assets = (5,000 + 3,000 + 15,000 + 20,000 + 2,000) = 45,000

$$\therefore \text{QA} = 45,000 - (15,000 + 2,000) = 28,000$$

Current liabilities = Bills payable + Creditors + Outstanding expenses + Bank loan

$$\therefore = 10,000 + 5,000 + 25,000 + 15,000 = 55,000$$

$$\therefore \text{Quick Ratio} = \frac{28,000}{55,000} = 0.51.$$

Quick ratio of this organisation is 0.51 which is less than the ideal ratio i.e., 1. It indicates that it does not have sufficient quick resources to meet its immediate obligation & hence it is advisable to take necessary steps like increase investments in quick assets of the concern.

(iii) Absolute Liquid Ratio or Pure Liquid Ratio/ Cash position ratio

It is the ratio which takes in to consideration only those assets, which are purely liquid in nature like cash in hand, at Bank and tradable investments. It is computed as follows.

$$\text{Absolute liquid Ratio} = \frac{\text{Absolute Liquid Assets}}{\text{Quick Liabilities}}$$

Absolute liquid assets are Cash in hand, Cash at Bank and immediately reliable market securities. Quick liabilities are those which should be settled immediately and includes all current liabilities except Bank overdraft and cash credit.

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The Generally expected level of ALR is 0.5:1 or 1:2 which means for every one rupee of quick liabilities, there should be two rupee of quick assets in hand.

Illustration - 4

From the following calculate Absolute Liquid Ratio.

Cash in hand: 40,000

Stock: 65,000

Creditors: 80,000

Cash at Bank: 60,000

Debtors: 35,000

Bank Overdraft: 20,000. Bills payable 10,000, out standing Expenses ₹ 10,000.

Solution:

Calculation of Absolute liquid Ratio

$$\text{Absolute liquid Ratio} = \frac{\text{Absolute Liquid Assets}}{\text{Quick Liabilities}}$$

In the given case, Absolute liquid Assets are cash in hand and cash at Bank only.

$$\therefore \text{Absolute Assets} = 40,000 + 60,000 = 100,000.$$

$$\therefore \text{Quick liabilities} = \text{creditors} + \text{Bills Payable} + \text{Outstanding expenses} \\ 80,000 + 10,000 + 10,000 = 1,00,000$$

$$\therefore \text{Absolute liquid Ratio} = \frac{1,00,000}{1,00,000} = 1:1$$

From the above it is clear that ALR is 1:1 which is above the ideal ratio i.e. 0.5:1, hence it is satisfactory.

(B) Solvency Ratio/Leverage Ratio/Capital Structure ratio

Capital structure ratio is that ratio which reflects the ability of an organisation to meet it's obligation in the long-term. It signifies the financial capacity of a concern over a period of time to meet it's financial commitments through it's capital allocation in various assets. It is a very useful ratio for creditors, Investors, and long-term lender's since it reflects the long term solvency position of an enterprise.

Some of the imperative Capital structure Ratio are as follows:

- (i) Debt-equity ratio
- (ii) Net worth ratio
- (iii) Fixed assets to net worth ratio
- (iv) Current assets to networth ratio
- (v) Capital gearing ratio.
- (vi) Solvency ratio.

Detailed discussion of the above ratio's are as follows:

NOTES**(i) Debt-Equity Ratio**

It is the ratio of Debts or long-term liabilities, and equity or owner's fund's. Debt includes long-term as well as short term liabilities of an organisation. Equity includes equity capital, reserves and surplus and any other reserves created out of past profits.

Debt-equity ratio is computed as follows:

$$\text{Debt equity Ratio} = \frac{\text{Debt}}{\text{Equity}} \text{ or } \frac{\text{External Equity}}{\text{Internal Equity}}$$

The generally expected level of debt equity ratio is 2:1 i.e. when there is two rupees of debt for every one rupee of equity fund, it is understood as the financial soundness of a firm is satisfactory.

(ii) Net-worth Ratio

This ratio is also known as owner's fund ratio or proprietary ratio. It is the ratio between networth or equity and tangible assets. In other words, it is the ratio of equity and releasible assets. It is expressed as under:

$$\text{Networth Ratio} = \frac{\text{Networth}}{\text{Total Assets}}$$

* Networth or equity is Equity capital + All reserves created out of profits.

Total assets means all assets except Goodwill.

The generally expected networth ratio is 5:1. When this ratio is more, it is said that the financial soundness is more favorable.

(iii) Fixed Assets to Networth Ratio

The equity capital which are also termed as long term source of fund is generally utilised to structure the fixed assets of an organisation. The ratio between these two elements is of great importance for ascertaining the financial soundness of a firm.

It is the ratio which establishes the relationship between the fixed assets and Networth. It is computed as follows:

$$\text{Fixed assets to Networth Ratio} = \frac{\text{Net Fixed Assets}}{\text{Net worth}}$$

Net fixed assets = Gross fixed assets – Depreciation

Networth = Equity and equity related item's.

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The generally expected ratio between Fixed Assets and Networth is 2/3. i.e. out of one rupee of equity capital 2/3 should be used for financing fixed assets. Fund allocation more than 2/3 or 67% towards fixed assets is a sign of blocking of funds and shortage of funds for working capital.

(iv) Current Assets to Networth Ratio

It is the ratio between Current Assets and Networth of an organisation. It is expressed as follows:

$$\text{Current assets to Net worth Ratio} = \frac{\text{Current Assets}}{\text{Networth}}$$

Generally it is interpreted as more the ratio more will be the solvency. And as such there is no ideal or standard CANW ratio.

(v) Capital Gearing Ratio

It is the ratio which is computed between equity capital and fixed interest bearing securities like debenture, long term loan's, public deposits, and preference share capital.

$$\text{CGR} = \frac{\text{Fixed interest / Dividend bearing securities}}{\text{Equity fund}}$$

Fixed interest dividend bearing securities = Debentures + Long term loans + Public deposits + Preference share capital.

Equity fund = Equity capital + Reserves.

When capital gearing ratio is more than one, it is interpreted as the company is highly geared, which poses threat for further fund raising, and need more consistent fund inflow for meeting those fixed commitments.

(vi) Solvency Ratio

It is the ratio between the total assets and total liabilities.

$$\text{S/R} = \frac{\text{Total Assets}}{\text{Total Liabilities}}$$

It indicates the financial ability of a concern to meet it's total liabilities out of total assets. It is said that more the solvency ratio, more is the financial soundness.

(C) Turnover Ratio or Activity Ratio/Efficiency Ratio

Turnover ratio's are those ratio's which measures the operational efficiency of an organisation. It reflects the efficient use of the organisation resources in term's of revenue generation. It is also termed as performance ratio since it measures the performance of different operation's. It reflects the number of times the stock's

have been rolled out, the frequency of debt collection, the frequency of creditors payment, cash turnover etc. It enables management to make decisions about the speedy movement of stocks, debt collection, creditors payment and many other such operational aspects.

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Some of the important turnover ratio's have been discussed as under:

- (i) Stock turnover ratio.
- (ii) Debtors turnover ratio.
- (iii) Creditors turnover ratio
- (iv) Working capital turnover ratio.
- (v) Fixed assets turnover ratio
- (vi) Current assets turnover ratio.

(i) Stock or Inventory Turnover Ratio

It is one of the important ratio used for measuring the operational efficiency. It indicates the number of time the stock have been turn over in a year. It is the ratio which is computed by taking the average stock and cost of goods sold.

$$\text{Stock turnover Ratio} = \frac{\text{Cost of Goods sold}}{\text{Average Stock}}$$

Cost of goods sold = Sales – Gross profit

Opening stock + Purchases + Direct expenses – Closing stock

$$\text{Average Stock} = \frac{\text{Opg. Stock} + \text{Clg. Stock}}{2}$$

Interpretation of stock turnover ratio:

No business organisation expects to keep it's stock for a longer period. It would like to sell it's goods as early as possible. Stock turnover ratio indicates the time with in which on an average, the stock have been turned over. As such there is no ideal stock turnover ratio, since it all depends on the type of goods, what we deals with. Generally more the ratio more will be the operational efficiency.

Stock turnover ratio is denoted in terms of number of times or months.

Alternatively STR also calculated as follows:

$$\text{STR} = \frac{\text{Net Sales}}{\text{Closing Stock}}$$

This ratio is used when COGS figure is not possible to ascertain in the given statement.

(ii) Debtors Turnover Ratio

Debtors are those who owes money to business due to purchase of goods on credit from the business. Debtors are imperative part of current assets in this modern

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business. Such debtors should be converted into money in a possible short span of time to improvise the revenue aspects.

Debtors turnover ratio is that ratio which reflects the number of times the debts are collected in a year. It is the ratio of debts and net credit sales. It is computed as follows.

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Annual Credit Sales}}{\text{Average Trade Debtors}}$$

This ratio is indicated in term's of number of times or months or days with in which debts have been collected in a year.

Net Annual credit sales = Total sales – Cash sales (Note : Total sales mean's net sales i.e. after deducting sales return's)

$$\text{Average trade debtors} = \frac{\text{Opening debtors} + \text{Closing debtors}}{2}$$

$$\text{Or} = \frac{\text{Opening debtors \& B/R} + \text{Closing debtors \& B/R}}{2}$$

Debtors for this purpose includes, Gross debtors + Bills receivables.

Interpretation of the ratio: Debtors turnover ratio reflects the average time taken to convert debt into cash. It enables, the management to decide upon the credit period to be allowed and to make decision on working capital fund allocation. As such there is no ideal debtor's turn over ratio. More the ratio more will be the operational efficiency.

Average collection period: Debtors turnover ratio together with average collection period.

$$\text{ACP} = \frac{\text{Average trade debtors}}{\text{Net credit sales per day}}$$

$$\text{or} = \frac{\text{Average debtors}}{\text{Net credit sales}} \times \text{No. of days/months}$$

$$\text{or} = \frac{360/12}{\text{DTR}}$$

(iii) Creditor's Turnover Ratio

It is the ratio between net annual credit purchases and average trade creditors. It is the ratio which indicates the duration with in which creditors are paid off or the number of times in a year creditors are to be paid. It is one of the important ratio which reflects the cash outflow in a given financial year. It is computed as follows.

$$\text{Creditors turnover Ratio} = \frac{\text{Net Annual Credit Purchases}}{\text{Average Trade Creditors}}$$

Net annual credit purchases = Total purchases – Cash purchases.

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(Note total purchases means net purchases after purchase returns)

$$\text{Average trade creditors} = \frac{\text{Opening creditors} + \text{Closing creditors}}{2}$$

(*Creditors for this purpose includes gross creditors i.e. creditors before any provision for discounts or reserves and bills payable)

$$\text{Average trade creditors} = \frac{NPBIT}{\text{Capital Employed}} \times 100$$

Interpretation of the ratio: Creditors turnover ratio indicates the number of times the payment made to creditors in a year. As such there is no ideal ratio of credit turn over. Generally it is said that more the ratio more will be the operational efficiency of an organisation.

Debt collection period: It is the ratio which clearly indicates the average time taken to collect or recover cash from debtors. In other word's it is the ratio which highlights the average period of debt allowed for debtors. It is calculated as follows.

$$\begin{aligned} \text{Debts collection period} &= \frac{\text{No. of months or days in a year}}{\text{Debtors turnover Ratio}} \text{ or} \\ &= \frac{\text{Average Creditors}}{\text{NCP}} \times \text{No. of days/months} \end{aligned}$$

Interpretation: This ratio acts as control technique, in which the actual time taken for debt collection is compared with the time allowed or duration of credit period, and it able management to take necessary measures to improvise the speedy collection of debts.

Debt payment period: It is the ratio which highlights the average time taken to make payments to creditors. In other words it is the ratio which indicates the debt payment period in a year.

$$\text{Debt payment period} = \frac{\text{No. of Months or days in a year}}{\text{Creditor turn over Ratio}}$$

(iv) Working Capital Turnover Ratio/Turnover to WCR

Generally the working capital is ascertained based on the turnover or sales. Working capital is the difference between current assets and current liabilities. Working capital turnover ratio is the ratio between net sales and working capital of an organisation.

$$\text{WC TR} = \frac{\text{Net Sales}}{\text{Working Capital}}$$

NOTES

Net sales = Total sales – Sales return

Working capital = Current assets – Current liabilities

Interpretation of the WCTR: Working capital is directly co-related with sales or turnover. More the turnover, more will be the working capital requirement. As such, there is no ideal working capital turnover ratio. It is said that more the ratio more will be the solvency and operational efficiency of an enterprise.

(v) Fixed Assets Turnover Ratio/Turnover to CAR

It is the ratio between fixed assets and sales or turnover. It reflects the efficient use of fixed assets for revenue generation. It is computed as follows.

$$\text{FATR} = \frac{\text{Net Sales}}{\text{Fixed Assets}}$$

Net sales means the total sales minus return's. Fixed assets mean gross fixed assets minus depreciation.

Interpretation of the ratio: The standard or ideal FATR is 5 times. i.e. the value of turnover or sales should be at least 5 times of the value of fixed assets to ensure efficient use of fixed resources of an organisation.

(vi) Current Assets Turnover Ratio

It is the ratio between net sales and current assets.

$$\text{CATR} = \frac{\text{Net Sales}}{\text{Current Assets}}$$

Net sales = Total sales – Sales return

Current assets = Debtors + Stock + Bills receivable + Cash in hand + Cash at bank + Short term investments

Interpretation: There is no ideal or standard current assets turnover ratio. More the ratio more will be the operational efficiency.

(D) Profitability Ratios

Profitability ratios are the real measures of the operational efficiency of an enterprise. It indicates the operational results in a given financial year. It is of great importance to managers, owners, share holders, creditors, bankers, Government and general public for making decisions.

These are the ratios which reflect the profitability position of a concern. It is the ratios in terms of sales and profit or cost of goods sold or profit at different level denoted in percentages.

Following are some of the important profitability ratios widely practised in organisations:

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- (i) Gross profit ratio
- (ii) Net profit ratio
- (iii) Operating ratio
- (iv) Expenses ratio
 - 1. Office and Administration expenses ratio.
 - 2. Selling and Distribution expenses ratio.
 - 3. Any other specific expenses ratio.
- (v) Operating profit ratio.
- (vi) Return on capital employed ratio.
- (vii) Earning per share ratio.
- (viii) Price earning ratio.

(i) Gross Profit Ratio

It is the ratio between net sales and gross profit. In other words it is the ratio of direct trading profit with respect to sales denoted in terms of percentage.

$$\text{Gross profit ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

$$\text{Gross profit} = \text{Net sales} - \text{Cost of goods sold} \quad \text{or} \quad \text{GPR} = \frac{1 - \text{COGSR}}{1} \times 100$$

$$= \frac{\text{Opening stock} + \text{Purchase} + \text{Direct expenses} - \text{Closing stock}}{\text{Net Sales}} \times 100$$

(ii) Net Profit Ratio

Gross profit ratio indicates the trading results of an organisation. This indeed does not reflect the overall profitability position of an organisation. Hence net profit ratio is essentially required in decision making.

Net profit ratio is the ratio between the net profit and net sales of an organisation.

$$\text{Net profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

$$\text{Net profit} = \text{Gross profit} + \text{Non-operating income} - \text{Operating and Non operating expenses.}$$

$$\text{Net sales} = \text{Total sales} - \text{Sales return.}$$

(iii) Operating Ratio

This ratio is also known as operating cost ratio. It is the ratio between the operating cost and net sales of an organisation.

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Operating cost refers to all those expenses or cost which are incurred in a financial year for running the business. It consist of the following.

Operating cost = Cost of goods sold + Operating expenses

Note: Operating expenses includes office and administrative expenses, selling and distribution expenses and any other expenses related to the operational aspect of a concern.

$$\text{Operating Ratio or Operating Cost Ratio} = \frac{\text{Operating Cost}}{\text{Net Sales}} \times 100$$

or

$$1 - \text{Opening Ratio} = \text{Operating profit Ratio}$$

(iv) Expenses Ratio

These are the ratios of specific expenses like office and administrative expenses ratio, selling and distribution expenses ratio etc. It deals with specific expenses and denoted interms percentage.

$$\text{Expenses Ratio} = \frac{\text{Specific Expenses}}{\text{Net Sales}} \times 100$$

It also includes individual expenses ratios the COGSR, Operating expenses ratio like, wages and salary ratio, advertisement expenses ratio, general expenses ratio.

(v) Operating Profit Ratio

It is the ratio between the operating profit and net sales of on organisation. Operating profit is the profit which is derived by only debiting the operating expenses and crediting the operating incomes in the profit and loss account. It does not take into consideration the non- Operating expenses and non-operating incomes.

$$\text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Net Sales}} \times 100$$

or

$$1 - \text{Operating Cost Ratio}$$

$$\text{Operating profit} = (\text{Net profit} + \text{Non-operating expenses}) - \text{Non-operating incomes}$$

(vi) Return on Capital Employed Ratio

This is the ratio, which establishes the relationship between the net profit and capital introduced in the business. Net profit for this purpose is the profit before the appropriation i.e. and profit before deducting interest and taxes. Capital employed refers to the capital of owners and borrowed capital, which is invested in the business.

$$\text{Return on capital employed ratio} = \frac{\text{NPBIT}}{\text{Capital Employed}} \times 100$$

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Return on capital employed = Operating profit or earnings before interest and taxes.

Capital employed = Owners fund + Long term borrowings – (Goodwill and fictitious assets)

(vii) Earning Per Share Ratio

This is the ratio between the net profit after tax and distribution of dividend to preference share holders and number of equity share holders. In other words it is the ratio between earnings available to equity share holder and number of share holders in an organisation.

$$\text{Earning per share Ratio} = \frac{\text{Earnings Available to Equity share holders}}{\text{Number of Share holders}}$$

⇒ Earnings available to equity share holder's means net profit after tax and distribution of dividend to preference share holder's.

$$\Rightarrow \text{Number of equity share} = \frac{\text{Total Equity Capital}}{\text{Face Value per Share}}$$

(viii) Price-Earning Ratio

This ratio indicates the number of times the earning per share is covered by its market price. It is the ratio between the market price per share and earning per share.

$$\text{P/E ratio} = \frac{\text{Market Price per Equity Share}}{\text{Earning per Equity Share}}$$

Interpretation of profitability ratio: Profitability ratios are the measurement of operational efficiency of an organisation in a given financial year. It indicates the use of organisational resources in generating better revenues and achieving organisational goals.

Profitability ratios like, gross profit ratio, net profit ratio, operating profit ratio, price earning ratio, earning per share ratio, when it is more it is said it is favourable to the organisation. Similarly when expenses ratio are less it is said it is favourable to the concern. As such there is no ideal or standard profitability ratio, in general.

18.5 LIMITATIONS OF RATIOS

Ratio analysis is no doubt, useful in many respects to different parties like, Creditors, Investors, Banker's and Government. Since ratio's are not independent and computed based on the financial data, its reliability can be questioned because, if

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the basic data itself is manipulated, then ratio's will also reflect the manipulated information. Following are some of the important draw back's of ratio's.

1. ***It is based on financial statement:*** Ratios are computed based on the financial statement of an organisation. Hence the ratio's may not reflect the true and fair financial position if there are manipulation or window dressing in the basic data itself.
2. ***Does not reflect the qualitative aspects:*** Some times it is necessary to evaluate, the qualitative aspects like, managerial abilities, nature of customers, employees etc., for making effective decisions. Ratios since deals with quantitative aspects, does not reflect these in its reports.
3. ***Ratios will not give decisions:*** It is just an information to make effective decisions.
4. Ratio's alone are not adequate for judging the financial position of a business.
5. ***There is no standardization in ratios:*** Ratios are interpreted in different ways based on the situation, requirement and view point of the persons. Hence it cannot give the same meaning to all.
6. Ratios are based on many assumptions and hence these may mislead the decision makers.
7. Ratios are meaningful only when they are studied with other ratios. A ratio alone cannot be meaningless by itself.
8. Understanding of ratios needs professional knowledge. Hence, it cannot be used by common people.

18.6 PRACTICAL PROBLEMS

Illustration - 5

Current ratio is 3.75:1 Working capital is ₹ 3,57,500. Calculate the amount of current assets and current liabilities.

Solution:

Let, Current liabilities = x

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

$$\Rightarrow 3.75 = \frac{\text{Current asset}}{x}$$

$$\therefore \text{Current asset} = 3.75 x$$

$$\text{Working capital} = (\text{Current asset} - \text{Current liabilities})$$

$$\Rightarrow 3,57,500 = 3.75 \times x$$

$$\Rightarrow 2.75 \times x = 3,57,500$$

$$\Rightarrow x = \frac{3,57,500}{2.75}$$

$$\therefore \text{Current liabilities} = ₹ 1,30,000$$

$$\begin{aligned} \text{Current assets} &= 3.75 \times 1,30,000 \\ &= 4,87,500 \end{aligned}$$

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Illustration - 6

Stock turnover is 5 times. Average stock is ₹ 60,000. Rate of gross profit is 20% on sales. Calculate sales and gross profit.

Solution:**(a) Calculation of Sales**

$$\text{Stock turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$\therefore 5 = \frac{\text{CGS}}{60,000} \therefore \text{CGS} = 60,000 \times 5, \text{ CGS} = 3,00,000$$

$$\text{Sales} = \text{Cost of goods sold} + \text{Gross profit.}$$

(Given % of gross profit is 20% on sales. Therefore % gross profit on cost of goods sold is 25%. i.e. when sales is 100 profit will be 20% on sales i.e. ₹ 20.

Therefore, cost = 100 – 20 = ₹ 80. The % of gross profit on cost = $\frac{20}{80} \times 100 = 25\%$)

$$\therefore \text{Sales} = 3,00,000 + \left(3,00,000 \times \frac{25}{100} \right) = 3,75,000$$

Illustration - 7

If the Current Ratio is 3:1 Quick Ratio is 1:1 and Current Liabilities are ₹ 1,80,000 Find Quick Assets.

$$\text{Current Ratio} = 3:1$$

$$\text{Quick Ratio} = 1:1$$

$$\text{Current liabilities} = 1,80,000$$

$$\text{Quick Assets} = ?$$

$$\text{Quick Ratio} = \frac{\text{Quick Asset}}{\text{Current Liability}}$$

$$1 = \frac{\text{Quick Asset}}{1,80,000} \quad \text{Quick Assets} = 1,80,000$$

NOTES

Illustration - 8

If Gross profit is ₹ 80,000 (25% of sales), opening stock is ₹ 29,000 (₹ 2,000) less than closing stock. Find Stock Turnover Ratio.

$$\text{Stock turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average stock}}$$

$$\text{GP} = 80,000$$

$$\text{GP Ratio} = 25\% \text{ of sales}$$

$$\therefore \text{Sales} = \frac{80,000}{25} \times 100 = 3,20,000$$

$$\text{Cost of good sold} = 3,20,000 - 80,000 = 2,40,000$$

$$\text{Average Stock} = \frac{\text{Opening stock} + \text{Closing stock}}{2}$$

$$= \frac{29,000 + 31,000}{2} = \frac{60,000}{2} = 30,000$$

$$\text{Stock turnover Ratio} = \frac{2,40,000}{30,000} = 8 \text{ times}$$

Working note:

$$\text{Closing Stock} = \text{Opening Stock} + 2,000 = 29,000 + 2,000 = 31,000$$

Illustration - 9

When current ratio is 2.5, current assets 1,00,000 and quick ratio is 1.5 find out the value of stock and current liabilities.

Solution:

Calculation of Current Liabilities:

$$\text{Current ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$2.5 = \frac{1,00,000}{\text{C.L.}}$$

$$\therefore \text{Current liabilities} = 1,00,000 / 2.5 = 40,000$$

Calculation of Stock-in-trade:

$$\text{Stock} = \text{Current asset} - \text{Quick asset}$$

$$\text{Quick ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}} = 1.5 = \frac{\text{Quick Assets}}{40,000}$$

$$\text{Quick assets} = 40,000 \times 1.5 = 60,000$$

$$\therefore \text{Stock} = 1,00,000 - 60,000 = ₹ 40,000$$

Illustration - 10

Current ratio = 2.5, working capital ₹ 9,00,000 Calculate current assets and current liabilities.

Solution:**NOTES**

Current ratio = 2.5

Working capital = 9,00,000

Current Liabilities and Current Assets?

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current Liabilities}} = 2.5$$

(i) Working Capital = Current Assets – Current Liabilities

$$9,00,000 = \text{C.A} - \text{C.L}$$

$$\text{CA} = 9,00,000 + \text{C.L}$$

$$\therefore 2.5 = \frac{9,00,000 + \text{C.L}}{\text{C.L}}$$

$$2.5 \text{ C.L} = 9,00,000 + \text{C.L}$$

$$2.5 \text{ C.L} - \text{C.L} = 9,00,000$$

$$1.5 \text{ C.L} = 9,00,000$$

$$\text{Current Liabilities} = 6,00,000$$

(ii) Working Capital = Current assets – Current Liabilities

$$9,00,000 = \text{C.A} - 6,00,000$$

$$\text{C.A} = 9,00,000 + 6,00,000$$

$$\text{C.A} = 15,00,000$$

Illustration - 11

Opening and closing balances of debtors are ₹ 40,000 and ₹ 60,000 respectively.

Debtors velocity is 2.4. Calculate credit sales.

Solution:

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Annual Credit Sales}}{\text{Avg. Trade Debtors}}$$

$$\therefore 2.4 = \frac{\text{Net Credit Sales}}{\frac{40,000 + 60,000}{2}}$$

$$\therefore \text{Credit sales} = 2.4 \times 50,000 = 1,20,000$$

Illustration - 12

Average stock of a firm is ₹ 50,000 and it's opening stock is ₹ 6,000 less than the closing stock. Find out it's opening and closing stock.

Solution:

Let, Closing Stock be x

$$\text{Average Stock} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

NOTES

$$\begin{aligned}
 50,000 &= \frac{(x - 6,000) + x}{2} \\
 1,00,000 &= (x - 6,000) + x \\
 1,00,000 &= 2x - 6,000 \\
 2x &= 1,00,000 + 6,000 \\
 x &= \frac{1,06,000}{2} = 53,000 \\
 \therefore \text{Closing Stock} &= 53,000 \\
 \therefore \text{Opening Stock} &= \text{Closing stock} - 6,000 \\
 &= 53,000 - 6,000 = 47,000
 \end{aligned}$$

Illustration - 13

Gross profit ratio = 20% on sales; Gross profit ₹ 1,00,000; Cash sales ₹ 1,20,000; Average Debtors ₹ 95,000. Calculate Debtors Turnover Ratio.

$$\begin{aligned}
 \text{Gross profit Ratio} &= \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100 \\
 20 &= \frac{1,00,000}{\text{Net Sales}} \times 100 \\
 20 \times \text{Net sales} &= 1,00,00,000 \\
 \text{Net Sales} &= \frac{1,00,00,000}{20} \\
 &= 5,00,000 \\
 \text{Debtors Turnover Ratio} &= \frac{\text{Net annual credit sales}}{\text{Average receivables}} \\
 \text{Net annual credit Sales} &= \text{Total Sales} - \text{Cash Sales} \\
 &= 5,00,000 - 1,20,000 \\
 &= 3,80,000 \\
 \text{Debtors Turnover Ratio} &= \frac{3,80,000}{95,000} \\
 &= 4 \text{ times}
 \end{aligned}$$

Illustration - 14

From the following compute a) Current ratio, b) Quick ratio, c) Absolute liquid ratio.

Stock-in-trade	1,00,000
Creditors	60,000
Debtors	80,000

Bills payable 10,000

Cash in hand 40,000

Prepaid expenses 5,000

Bills receivable 45,000

NOTES

Solution:

(a) Calculation of Current Ratio

$$\text{Current ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Current assets} = 1,00,000 + 80,000 + 40,000 + 5,000 + 45,000 = 2,70,000$$

$$\text{Current liabilities} = 60,000 + 10,000 = 70,000$$

$$\text{Current Ratio} = \frac{2,70,000}{70,000} = 3.86 / \text{Times}$$

(b) Calculation of quick ratio

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$\begin{aligned} \text{Quick Assets} &= \text{Current Assets} - (\text{Stock} + \text{Prepaid expenses}) \\ &= 2,70,000 - (1,00,000 + 5,000) = 1,65,000 \end{aligned}$$

$$\therefore \text{Quick Ratio} = \frac{1,65,000}{70,000} = 2.35 \text{ times.}$$

(c) Calculation of Absolute Liquid Ratio

$$\text{ALR} = \frac{\text{Absolute Assets}}{\text{Current Liabilities}}$$

$$\text{Absolute assets} = \text{Quick assets} - (\text{Debtors} + \text{Bills Receivable})$$

Quick assets as computed above is 1,65,000.

$$\therefore \text{Absolute liquid assets} = 1,65,000 - (80,000 + 45,000) = ₹ 40,000$$

$$\text{ALR} = \frac{40,000}{70,000} = 0.57 / \text{Times.}$$

Illustration - 15

From the following, calculate:

(a) Debtors turnover ratio

(b) Debt collection period in months

Total sales for the year ₹ 3,75,000

Cash sales for the year ₹ 75,000

NOTES

At the beginning of the year:

Debtors ₹ 30,000

Bills Receivable ₹ 10,000

At the end of the year:

Debtors ₹ 45,000

Bills receivables ₹ 15,000

Solution:

(a) Debtors Turnover Ratio

$$\text{Debtors Turnover Ratio} = \frac{\text{Net annual credit sales}}{\text{Average receivables}}$$

$$\begin{aligned} \text{Net annual credit sale} &= \text{Total sales} - \text{Cash sales} \\ &= 3,75,000 - 75,000 = 3,00,000 \end{aligned}$$

$$\text{Average receivable} = \frac{\text{Opening receivable} + \text{Closing receivable}}{2}$$

$$\begin{aligned} \text{Opening receivable} &= \text{Debtors} + \text{Bills receivable} \\ &= 30,000 + 10,000 = 40,000 \end{aligned}$$

$$\begin{aligned} \text{Closing receivable} &= \text{Debtors} + \text{Bills receivable} \\ &= 45,000 + 15,000 = 60,000 \end{aligned}$$

$$\text{Average receivable} = \frac{40,000 + 60,000}{2} = \frac{1,00,000}{2} = 50,000$$

$$\begin{aligned} \text{Debtors turnover ratio} &= \frac{3,00,000}{50,000} \\ &= \mathbf{6 \text{ times}} \end{aligned}$$

(b) Debt collection period in months

$$\begin{aligned} \text{Debt collection period (in months)} &= \frac{12 \text{ months}}{\text{Debtors turnover ratio}} \\ &= \frac{12}{6} = \mathbf{2 \text{ months}} \end{aligned}$$

Illustration - 16

The following information given about Bharath Nirman Company for the year ending 31st March 2010.

(i) Stock turn over ratio = 6 times

(ii) Gross profit ratio = 20% on sales (iii) Sales ₹ 2,00,000

(iv) Closing stock is ₹ 10,000 more than the opening stock

(v) Opening creditors ₹ 20,000

(vi) Closing creditors ₹ 30,000

(vii) Net working capital ₹ 50,000

Find out: (a) Average stock (b) Average payment period (c) Purchases (d) Working capital turnover ratio.

NOTES

Solution:

Given gross profit 20% of sales

$$GP = 2,00,000 \times \frac{20}{100}$$

$$= 40,000$$

$$\begin{aligned} \text{Cost of good sold} &= \text{Sales} - \text{Gross Profit} \\ &= 2,00,000 - 40,000 \\ &= 1,60,000 \end{aligned}$$

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$6 = \frac{1,60,000}{\text{Average Stock}}$$

$$\Rightarrow 6x \text{ Average stock} = 1,60,000$$

$$\begin{aligned} \text{Average stock} &= \frac{1,60,000}{6} \\ &= 26,667 \end{aligned}$$

Let, Opening stock x

$$\text{Closing stock} = x + 10,000$$

$$\text{Average} = \frac{x + x + 10,000}{2}$$

$$\Rightarrow 26,667 \times 2 = 2x + 10,000$$

$$\Rightarrow 2x = 53,333 - 10,000$$

$$x = \frac{43,333}{2}$$

$$\therefore \text{Opening stock} = 21,667$$

$$\begin{aligned} \text{Closing stock} &= (21,667 + 10,000) \\ &= 31,667 \end{aligned}$$

Calculation of Purchase:

$$\text{Opening stock} + \text{Purchase} + GP = \text{Sales} + \text{Closing Stock}$$

$$\Rightarrow 21,667 + \text{Purchase} + 40,000 = 2,00,000 + 31,667$$

$$\begin{aligned} \Rightarrow \text{Purchase} &= 2,31,667 - 61,667 \\ &= 1,70,000 \end{aligned}$$

NOTES

$$\text{Average payment period} = \frac{\text{Average Creditor}}{\text{Purchase}} \times \text{No. of days}$$

$$= \frac{25,000}{1,70,000} \times 365$$

$$= 53.67 \text{ or } 54 \text{ days}$$

$$\text{Note: Average creditor} = \frac{\text{Opening Creditor} + \text{Closing creditors}}{2}$$

$$= \frac{20,000 + 30,000}{2}$$

$$= \frac{50,000}{2} = 25,000$$

$$\begin{aligned} \text{Working Capital turnover ratio} &= \frac{\text{Cost of goods sold}}{\text{Net working Capital}} \\ &= \frac{1,60,000}{50,000} = 3.2 \text{ times} \end{aligned}$$

Illustration - 17

Following is the Balance Sheet of Nishanth Ltd., as at 31st March, 2010.

Liabilities	₹	Assets	₹
Equity Share Capital	5,00,000	Land & Buildings	9,00,000
8% Preference Share Capital	4,00,000	Plant & Machinery	8,00,000
Reserves and Surplus	4,00,000	Closing Stock	3,00,000
9% Debentures	6,00,000	Debtors	2,00,000
Current Liabilities	4,00,000	Bank & Cash	90,000
		Prepaid Expenses	10,000
	23,00,000		23,00,000

Additional Information:

Sales during the year ₹ 8,00,000; Cost of Goods Sold ₹ 6,00,000; Office and Administrative Expenses ₹ 1,12,000; Commission and Discount earned ₹ 12,000; Loss on sale of machinery ₹ 34,000; Profit on sale of building ₹ 54,000.

You are required to calculate Current Ratio, Liquid Ratio, Stock Turnover Ratio, Gross Profit Ratio, Operating Cost Ratio, Net Profit Ratio, Debt - Equity Ratio, Solvency Ratio, Proprietary Ratio and Fixed Assets to Net Worth Ratio.

Solution:**NOTES**

$$\begin{aligned}
 1. \text{ Current Ratio} &= \frac{\text{Current Assets}}{\text{Current Liabilities}} \\
 &= \frac{3,00,000 + 2,00,000 + 90,000 + 10,000}{4,00,000} \\
 &= 1.5:1
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Liquid Ratio} &= \frac{\text{Liquid Assets}}{\text{Liquid Liabilities}} \\
 &= \frac{2,00,000 + 90,000 + 10,000}{4,00,000} = 0.75:1
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Stock Turnover Ratio} &= \frac{\text{Cost of goods Sold}}{\text{Average inventory Cost}} \text{ or } \frac{\text{Cost of goods sold}}{\text{Closing Stock}} \\
 &= \frac{6,00,000}{3,00,000} = 2 \text{ times}
 \end{aligned}$$

$$\begin{aligned}
 4. \text{ Gross profit Ratio} &= \frac{\text{Gross profit}}{\text{Net Sales}} \times 100 \\
 &= \frac{8,00,000 - 6,00,000}{8,00,000} \times 100 = 25\%
 \end{aligned}$$

$$5. \text{ Operating Cost ratio} = \frac{\text{Operating Cost}}{\text{Net Sales}} \times 100$$

$$\begin{aligned}
 \text{Operating Cost} &= \text{COGS} + \text{Office and Administration expenses} \\
 &= 6,00,000 + 1,12,000 = 7,12,000 \\
 &= \frac{7,12,000}{8,00,000} \times 100 \\
 &= 89\%
 \end{aligned}$$

$$6. \text{ Net profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

$$\begin{aligned}
 &= \text{Gross Profit} + \text{Profit on sale of building} + \text{Commission} \\
 &- (\text{Office exp.} + \text{Loss on sale of machinery}) \\
 &=
 \end{aligned}$$

$$\frac{(2,00,000 + 54,000 + 12,000) - (1,12,000 + 34,000)}{8,00,000} \times 100$$

$$\begin{aligned}
 &= \frac{1,20,000}{8,00,000} \times 100 \\
 &= 15\%
 \end{aligned}$$

NOTES

$$\begin{aligned}
 7. \text{ Debt equity Ratio} &= \frac{\text{Outsiders Funds}}{\text{Owners funds}} \\
 &= \frac{6,00,000 + 4,00,000}{5,00,000 + 4,00,000 + 4,00,000} \\
 &= \frac{10,00,000}{13,00,000} = 0.77 : 1
 \end{aligned}$$

$$\begin{aligned}
 8. \text{ Proprietary Ratio} &= \frac{\text{Shareholder's Funds}}{\text{Total Assets}} \times 100 \\
 &= \frac{13,00,000}{23,00,000} \times 100 \\
 &= 56.52\%
 \end{aligned}$$

$$\begin{aligned}
 9. \text{ Fixed Assets to Net worth Ratio} &= \frac{\text{Fixed Assets}}{\text{Shareholder's funds}} \times 100 \\
 &= \frac{9,00,000 + 8,00,000}{13,00,000} \times 100 \\
 &= \frac{17,00,000}{13,00,000} \times 100 \\
 &= 130.76 = 131\%
 \end{aligned}$$

10. Solvency ratio

a) Current Assets to proprietary fund ratio

$$\begin{aligned}
 &= \frac{\text{Current Assets}}{\text{Share holders Funds}} \times 100 \\
 &= \frac{6,00,000}{13,00,000} \times 100 \\
 &= 46.15\%
 \end{aligned}$$

$$\begin{aligned}
 b) \text{ Capital gearing ratio} &= \frac{\text{P/s Capital + long term borrowings}}{\text{E/s capital + Reserves \& Surplus}} \\
 &= \frac{10,00,000}{9,00,000} = 1.11:1
 \end{aligned}$$

Illustration - 18

Using the following data complete the Balance Sheet

Gross Profit (20% of sales)	₹ 60,000
Share Capital	₹ 50,000

Credit Sales to total sales	80%	NOTES
Total assets turnover (on sales)	3 times	
Closing stock turnover (to cost of sales)	8 times	
Average collection period (for 360 days)	18 days	
Current Ratio	1.6	
Long term debt to equity	40%	

Balance Sheet

Share Capital	?	Fixed Assets	?
Long Term Debt	?	Stock	?
Creditors	?	Debtors	?
		Cash	?
	?		?

Solution:

Balance Sheet			
Liabilities	Amount	Assets	Amount
Share Capital	50,000	Fixed Assets (B/F)	52,000
Long Term debt	20,000	Stock	30,000
Creditors (B/F)	30,000	Debtors	12,000
		Cash	6,000
	1,00,000		1,00,000

Working Note:**Calculation of sales:**

$$\text{Let, Sales} = x$$

$$\text{Gross profit} = 20\% \text{ of } x = \frac{20x}{100} = \frac{x}{5}$$

$$\Rightarrow 60,000 = \frac{x}{5}$$

$$\Rightarrow x = 3,00,000$$

$$\therefore \text{Sales} = 3,00,000$$

Calculation of Total Assets:

$$\text{Now, Total assets turnover ratio} = \frac{\text{Sales}}{\text{Total Assets}}$$

$$3 = \frac{3,00,000}{\text{Total assets}}$$

$$\therefore \text{Total assets} = 1,00,000$$

NOTES

Calculation of Closing Stock:

$$\text{Closing stock turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Closing Stock}}$$

$$8 = \frac{\text{Sales} - \text{profit}}{\text{Closing Stock}}$$

$$\Rightarrow 8 = \frac{3,00,000 - 60,000}{\text{Closing Stock}}$$

$$\Rightarrow \text{Closing stock} = \frac{2,40,000}{8}$$

$$\therefore \text{Closing stock} = 30,000$$

Calculation of Debtors:

Again,

$$\text{Average collection period} = \frac{\text{No. of days in a year}}{\text{Credit Sales}} \times \text{Debtors}$$

$$18 = \frac{360}{2,40,000} \times \text{Debtors}$$

$$\Rightarrow 360 \text{ Debtors} = 43,20,000$$

$$\therefore \text{Debtors} = 12,000$$

Calculation of Current Assets:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$1.6 = \frac{\text{Current Assets}}{30,000}$$

$$\text{Current Assets} = 30,000 \times 1.6 = 48,000$$

Illustration - 19

Current ratio = 2.5,

Gross profit ratio = 20%,

Liquidity ratio = 1.5,

Fixed asset turnover ratio = 2,

Stock turnover ratio = 6,

Average debt collection = 2 months,

Fixed assets to Networth = 1:1

Reserves to share capital = 0.5:1

Networking capital = ₹ 3,00,000.

From the above details draw up a balance sheet.

Solution:

NOTES

(a) Calculation of Current assets and Current liabilities

Working capital = Current assets – Current liabilities

$$3,00,000 = 2.5 - 1$$

$$\therefore \text{Current assets} = \frac{3,00,000}{1.5} \times 2.5 = 5,00,000.$$

$$\text{Current liabilities} = \frac{3,00,000}{1.5} \times 1 = 2,00,000.$$

(b) Calculation of stock

Stock = Current asset – Quick assets

Quick asset can be computed with the help of quick ratio.

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$1.5 = \frac{\text{Quick Assets}}{2,00,000}$$

$$\therefore \text{Quick Assets} = 2,00,000 \times 1.5 = 3,00,000$$

$$\therefore \text{Stock} = 5,00,000 - 3,00,000 = 2,00,000$$

(c) Calculation of Fixed Assets

Fixed assets can be computed with the help of sales, which is not specifically given in the problem. Sales can be found out through stock turnover ratio.

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$6 = \frac{\text{Cost of Goods Sold}}{2,00,000}$$

$$\therefore \text{COGS} = 2,00,000 \times 6 = 12,00,000$$

$$\text{Sales} = \text{COGS} + \text{Gross profit}$$

Gross profit ratio is given on sales as 20%. But

When it is to be calculated on cost, it is computed as follows:

Assume when sales is 100

Less: Profit will be 20% 20

\therefore Cost will be 80

$$\therefore \text{Gross profit \% on sales is } \frac{20}{80} \times 100 = 25\%$$

$$\therefore \text{Gross profit} = 12,00,000 \times \frac{25}{100} = 3,00,000$$

$$\therefore \text{Sales} = \text{COGS} + \text{Gross profit}$$

$$\begin{aligned} \text{Sales} &= 12,00,000 + 3,00,000 \\ &= 15,00,000 \end{aligned}$$

NOTES

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Net Sales}}{\text{FA}}$$

$$\therefore 2 = \frac{15,00,000}{\text{FA}}$$

$$\therefore \text{Fixed assets} = 7,50,000$$

(d) Calculation of Debtors: Debtors can be ascertained with the help of debt collection period.

$$\text{Debt. Collection Period} = \frac{\text{No. of days or months}}{\text{D.T.R}}$$

$$2 \text{ months} = \frac{12 \text{ month}}{\text{D.T.R}}$$

$$\therefore \text{DTR} = \frac{12}{2} = 6 \text{ Times}$$

It mean's debtors will be $\frac{1}{6}$ times of total credit sales

$$\therefore \text{Debtors} = 15,00,000 \times \frac{1}{6} = 2,50,000$$

(e) Calculation of Proprietary fund or Networth Ratio

It is stated that fixed assets to networth is 1:1. It mean's networth or proprietors fund is equal to fixed assets.

$$\therefore \text{Fixed Assets} = \text{Proprietors Fund}$$

$$7,50,000 = 7,50,000 \quad \text{Proprietors fund} = 7,50,000$$

(f) Calculation of Reserves

Reserves to share capital is 0.5:1

$$\text{Capital} = \frac{7,50,000}{1.5} \times 1 = 5,00,000$$

$$\text{Reserves} = \frac{7,50,000}{1.5} \times 0.5 = 2,50,000$$

Balance Sheet

<i>Liabilities</i>		<i>Assets</i>	
Capital	5,00,000	Fixed Assets.	7,50,000
Reserves	2,50,000	Current assets:	
Current liabilities	2,00,000	Debtors	2,50,000
Long term liabilities	3,00,000	Stock	2,00,000
(B/F)		Cash	50,000
			5,00,000
	12,50,000		12,50,000

Note: Cash is the balancing figure of total current assets,

Illustration - 20**NOTES**

From the following information pertaining to Yogesh Ltd. Prepare its Trading A/c Profit and Loss A/c for the year ended 31.3.2007 and a summarised Balance Sheet as on the date:

Current Ratio	2.5
Quick Ratio	1.3
Proprietary Ratio $\left(\frac{\text{Fixed Assets}}{\text{Proprietary funds}} \right)$	0.6
Gross profit Ratio	10%
Debtors Velocity	40 days
Sales	₹ 7,30,000
Working Capital	₹ 1,20,000
Bank Overdraft	₹ 15,000
Share Capital	₹ 2,50,000

Closing stock is 10% more than opening stock

Net profit 10% of proprietary funds.

Working Notes:

$$1. \text{ Gross profit Ratio} = \frac{\text{Gross profit}}{\text{Sales}} \times 100$$

$$= 7,30,000 \times \frac{10}{100} = 73,000$$

$$2. \text{ Current Ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} = 2.5$$

Working capital = Current assets – Current liabilities

$$1,20,000 = \text{CA} - \text{CL}$$

$$\text{CA} = 1,20,000 + \text{CL}$$

$$\therefore 2.5 = \frac{1,20,000 + \text{CL}}{\text{CL}}$$

$$1.5\text{CL} = 1,20,000$$

$$\text{Current liabilities} = 80,000$$

$$\therefore \text{Current assets} = ₹ 2,00,000$$

$$3. \text{ Quick ratio} = \frac{\text{Quick Assets}}{\text{Quick liabilities}}$$

$$1.3 = \frac{\text{Current assets} - \text{Stock}}{\text{Current liabilities} - \text{Bank overdraft}}$$

$$1.3 = \frac{2,00,000 - \text{Stock}}{80,000 - 15,000}$$

NOTES

$$1.3 = \frac{2,00,000 - \text{Stock}}{65,000}$$

$$84,500 = 2,00,000 - \text{Stock}$$

$$84,500 - 2,00,000 = - \text{stock}$$

$$+1,15,500 = + \text{stock}$$

$$\therefore \text{Stock} = 1,15,500$$

4. Debtors

Debtors Velocity = 40 days

$$\frac{\text{Debtors}}{\text{Sales}} \times 365 = 40$$

$$\frac{\text{Debtors}}{7,30,000} \times 365 = 40$$

$$\text{Debtors} = 80,000$$

$$5. \text{ Proprietary Ratio} = \frac{\text{Fixed Assets}}{\text{Proprietary funds}} = \frac{1,80,000}{3,00,000} = 0.6$$

Proprietary fund + Long term loan = Fixed assets + Working capital

Assuming Long term loan as NIL

Let, Proprietary fund = x

$$x = 0.6x + 1,20,000$$

$$x - 0.6x = 1,20,000$$

$$0.4x = 1,20,000$$

$$x = \frac{1,20,000}{0.4} = 3,00,000$$

$$\text{Fixed Assets} = 3,00,000 \times 0.6 = 1,80,000$$

$$\text{Proprietary Fund} = \text{Fixed asset} + 1,20,000$$

$$\text{Proprietary Fund} = 0.6 \text{ proprietary Fund} + 1,20,000$$

$$\text{Proprietary Fund} = 3,00,000$$

6. Net profits = 10% of proprietary funds

$$= 3,00,000 \times \frac{10}{100} = 30,000$$

7. Closing stock is 10% more than opening stock

$$\text{Closing stock} = 1,15,500$$

$$\text{Opening stock} = 1,05,000 = \left(\frac{1,15,500 \times 100}{110} \right)$$

$$\text{Closing stock} = 1,15,500$$

Trading & P/L A/c for the year ending...

Dr.			Cr.
	₹		₹
To Opening stock	1,05,000	By Sales A/c	7,30,000
To Purchase a/c (bal fig)	6,67,500	By Closing stock	1,15,500
To Gross profit	73,000		
	8,45,500		8,45,500
To Operating exps (bal fig)	43,000	By Loss Profit	73,000
To Net profit	30,000		
	73,000		73,000

Balance Sheet

<i>Liabilities</i>	<i>Amount</i>	<i>Assets</i>	<i>Amount</i>
Share capital	2,50,000	Fixed assets	1,80,000
Reserces & Surplus	50,000	Current assets	
Current Liabilities		Stock	1,15,500
Bank overdraft	15,000	Debtors	80,000
Other liabilities	65,000	Cash (Bal fig)	4,500
			2,00,000
	3,80,000		3,80,000

18.7 SUMMARY

Ratio is the relationship between two accounting numbers by dividing one number by another. It is one of the effective tools of financial analysis. It indicates the relationship of accounting aspects like profit and sales, income and expenses, current assets and liabilities etc. with each other and reflects the soundness of the concern.

Ratio analysis is the technique of the computation of number of accounting ratios from the data derived from the financial statements, and comparing those with the ideal or standard ratios or the previous year's ratios or the ratios of other similar concerns. It is a technique of comparative analysis in which current year ratios are compared with the past or other organizations which are in similar line of operation so as to ascertain the financial soundness of the concern.

Liquidity Ratio is the ratio which measures the short-term solvency position of an organisation. It brings out the ability of an organisation to meet its immediate or short term financial commitments with its short term or liquid resources. Such ratios are highly needful for parties like creditors, Banker's and other private lender's. It enables the lenders to know the repayment ability of an organisation with in short period.

NOTES

Quick ratio is that ratio which measures the immediate solvency position of an enterprise. It establish relationship between quick assets and quick liabilities.

Quick Assets: It includes all those Current Assets minus stock and prepaid expenses because; these two assets cannot be immediately realized without financial loss.

Quick or Current liabilities includes all aspects of current liability. But some scholars are of the opinion that current liability for this purpose should not include Bank over draft since it is has permanent arrangement in the Bank. But it is advisable to consider it as the immediate obligation, which has to be met with the Quick Assets.

Absolute liquid assets are Cash in hand, Cash at Bank and immediately reliable market securities. Quick liabilities are those which should be settled immediately and includes all Current Liabilities except Bank overdraft and cash credit.

18.8 GLOSSARY

- (a) **Ratio:** Ratio is the relationship between two accounting numbers by dividing one number by another. It is one of the effective tools of financial analysis. It indicates the relationship of accounting aspects like profit and sales, income and expenses, current assets and liabilities etc. with each other and reflects the soundness of the concern.
- (b) **Ratio analysis:** Ratio analysis is the technique of the computation of number of accounting ratios from the data derived from the financial statements, and comparing those with the ideal or standard ratios or the previous year's ratios or the ratios of other similar concerns. It is a technique of comparative analysis in which current year ratios are compared with the past or other organizations which are in similar line of operation so as to ascertain the financial soundness of the concern.
- (c) **Liquidity Ratio:** Liquidity Ratio is the ratio which measures the short-term solvency position of an organization. It brings out the ability of an organization to meet its immediate or short term financial commitments with its short term or liquid resources. Such ratios are highly needful for parties like creditors, Banker's and other private lender's. It enables the lenders to know the repayment ability of an organization with in short period.
- (d) **Quick ratio:** Quick ratio is that ratio which measures the immediate solvency position of an enterprise. It establishes relationship between quick assets and quick liabilities.
- (e) **Quick Assets:** It includes all those Current Assets minus stock and prepaid expenses because; these two assets cannot be immediately realized without financial loss.

18.9 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

NOTES

(A) Short Answer Questions

1. What do you mean by ratio analysis?
2. What do you mean by balance sheet ratio?
3. What is current ratio?
4. What is debt equity ratio?
5. What do you mean by acid test ratio?
6. What is price earnings ratio?
7. What do you mean by net worth?
8. What is meant by operating profit?
9. What is meant by operating cost?
10. What are the profitability ratios?

(B) Extended Answer Questions

1. Discuss any two limitations of ratio analysis.
2. List out two advantages of ratio analysis.
4. What is Du-point analysis? Explain in brief.

(C) True or False

1. Ratio is the relationship between two accounting numbers by dividing one number by another.
2. Ratio analysis is the technique of the computation of number of accounting ratios from the data derived from the financial statements, and comparing those with the ideal or standard ratios or the previous year's ratios or the ratios of other similar concerns.
3. Liquidity Ratio is the ratio which measures the short-term solvency position of an organisation.
4. Capital structure ratio is that ratio which measures the immediate solvency position of an enterprise.
5. Absolute liquid assets are Cash in Hand, Cash at Bank and immediately reliable market securities.

NOTES

(D) Multiple Choice Questions

1. What is the relationship between two accounting numbers by dividing one number by another?
(a) Ratio (b) Ratio Analysis
(c) Capital ratio (d) All the above
2. What is the technique of the computation of number of accounting ratios from the data derived from the financial statements, and comparing those with the ideal or standard ratios or the previous year's ratios or the ratios of other similar concerns?
(a) Ratio (b) Ratio Analysis
(c) Capital ratio (d) All the above
3. What is the ratio which measures the short-term solvency position of an organization?
(a) Liquidity Ratio (b) Ratio Analysis
(c) Capital ratio (d) All the above

(E) Fill in the Blanks

1. is the relationship between two accounting numbers by dividing one number by another.
2. is the technique of the computation of number of accounting ratios from the data derived from the financial statements, and comparing those with the ideal or standard ratios or the previous year's ratios or the ratios of other similar concerns.
3. is the ratio which measures the short-term solvency position of an organisation.
4. Absolute liquid assets are cash in hand, cash at Bank and immediately reliable.....

18.10 KEY TO CHECK YOUR ANSWER/ANSWER TO CHECK YOUR PROGRESS

- (C) 1. True, 2. True, 3. True, 4. False, 5. True
- (D) 1. (a), 2. (b), 3. (a)
- (E) 1. Ratio, 2. Ratio analysis, 3. Liquidity Ratio, 4. Market securities

18.11 BIBLIOGRAPHY

NOTES

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18.12 SUGGESTED READINGS

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2. Chandra, Prasanna, "Financial Management: Theory and Practices", Tata Mc Graw Hill, New Delhi.
3. Khan and Jain, "Theory and Problems of Management and Cost Accounting", Tata Mc Graw Hill, New Delhi.
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18.13 TERMINAL QUESTIONS

1. Discuss any three accounting ratios based on sales.

NOTES

2. Which ratios are used to test the short term solvency of a company?

UNIT 19 STATEMENT OF CHANGES IN FINANCIAL POSITION-I: FUNDS FLOW STATEMENT

Structure:

- 19.1 Introduction
- 19.2 Concept of Funds Flow Statement
- 19.3 Steps Involved in Preparation of Fund Flow Statements
- 19.4 Methods of Calculation of Funds from Operation
- 19.5 Practical Problems
- 19.6 Summary
- 19.7 Glossary
- 19.8 Check Your Progress (Multiple Choice/Objective Type Questions)
- 19.9 Key to Check Your Answer
- 19.10 Bibliography
- 19.11 Suggested Readings
- 19.12 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Statement of Changes in Financial Position: Funds Flow Statement

NOTES

19.1 INTRODUCTION

Funds flow statement is a statement which discloses the analytical information about the different sources of a fund and the application of the same in an accounting cycle. It deals with the transactions which change either the amount of current assets and current liabilities (in the form of decrease or increase in working capital) or fixed assets, long-term loans including ownership fund.

The financial statements like trading account, profit and loss account and balance sheet shows the financial position of the business as on a particular date. But it does not state whether the assets or liabilities are increased or decreased when compared with the previous year. Hence, these statements are viewed as rigid. Therefore an additional statement is prepared to show the changes in assets, liabilities and capital between two balance sheet dates. This statement is known as statement of sources and application of funds or fund flow statement.

The financial position of a business enterprise gets changed with every transaction. In other words, there is a continuous movement of resources into the business, within the business and out of the business. Consequently, financial position changes. Unfortunately, both the balance sheet and income statement do not explain the changes in the firm's financial position during a particular period of time. They fail to explain the changes in assets, liabilities and net worth. Hence the balance sheet and income statement must be analyzed. For this purpose, additional statements are required to be prepared from basic financial statements. Such statements prepared from balance sheet and income statement are called Statements of Changes in Financial Position.

19.2 CONCEPT OF FUNDS FLOW STATEMENT

Meaning of Fund

The term fund can be used in three different ways. They are:

In a narrow sense: It means cash or money.

In a broad sense: It means all financial resources.

In a popular sense: In the context of funds flow statement, the term fund means working capital. It is the excess of current assets over current liabilities.

Thus there are three concepts of fund. They are cash, total resources and working capital.

Concept of Fund Flow**NOTES**

The term fund has different meanings. According to the International Accounting Standard 7 the term fund refers to cash or cash equivalent or working capital. The term flow means changes. Thus the term fund flow means change or flow of funds or changes in working capital. It also refers to any increase or decrease in working capital.

Meaning of Fund Flow Statement

Fund flow statement is a statement in a summary form depicting the changes in the items of financial position between two balance sheet dates and showing sources and application of funds.

Objectives or Purposes of Fund Flow Statement

The main objectives of preparing a fund flow statement is to know the sources from which they have come and the purpose for which they are used. The other objectives are as follows:

1. To know the changes in working capital during a period.
2. To understand the working capital position of the firm.
3. To assess the financial condition of the firm.
4. To anticipate the working capital position.
5. To reveal the most important changes those have taken place during a particular period.
6. To provide a basis for budgeting.

Importance or Uses/Benefits of Fund Flow Statement

Fund flow statement is an important technique of financial analysis. It supplies information which is not available in financial statements. It is useful to shareholders, management, creditors, banks etc. The various uses of fund flow statements are outlined as below:

1. Useful to shareholders

It is useful to shareholders in the following ways:

- (a) It provides information regarding the availability of funds in the business.
- (b) It indicates the earning capacity of the business.
- (c) It enables to know the ability of the company to pay dividend.

NOTES

2. Useful to long creditors and debenture holders

It is useful to long term creditors and debenture holders in the following ways:

- (a) It helps to understand whether the money borrowed is utilized or not.
- (b) It enables to judge the capacity of the company to repay the loan or debentures.

3. Useful to short term creditors, banks and financial institutions

It is useful to short term creditors, banks and financial institutions in the following ways:

- (a) It helps to know whether the money borrowed is utilized or not.
- (b) It helps to know whether the company can pay interest and to repay the principal in time.

4. Useful to Management

It helps the management in:

- (a) Planning temporary investment of funds.
- (b) Evaluating proper utilization of funds.
- (c) Formulating sound dividend policy.
- (d) Estimating future working capital requirement.
- (e) Testing whether working capital is effectively utilized.
- (f) Taking appropriate decisions regarding purchase of assets.
- (g) Identifying any unnecessary investment in fixed assets.
- (h) Understanding the reason for financial difficulties, if any.
- (i) Planning for redemption of long term debts.
- (j) Ascertaining funds from operation.

Limitations of Fund Flow Statement

Although fund flow statement is useful to various interested parties, yet it suffers from the following limitations:

1. It shows what happened in the past. Hence, it is historical in nature.
2. It is only a rearrangement of data given in financial statements. Hence, it is not original.
3. It can not reveal continuous changes.
4. It does not take into account those transactions which do not affect the working capital.

5. It is not as useful as cash flow statement.
6. It does not reveal the cash position of a firm.

NOTES

19.3 STEPS INVOLVED IN PREPARATION OF FUND FLOW STATEMENTS

The procedure or the steps involved in the preparation of fund flow statement are as follows:

- Step-1 Preparation of schedule of Changes in Working Capital.
- Step-2 Prepare necessary ledger accounts to identify the hidden transactions from the non-current assets and non-current liabilities. (ascertaining sources and uses of funds).
- Step-3 Compute the Fund from Operations from revenue expenses and incomes.
- Step-4 Preparation of Fund Flow Statement.

Step-1: Preparation of Schedule of changes in Working Capital

The schedule of changes in working capital is prepared by comparing the current assets and current liabilities of the two periods. The purpose of this statement is to find out net change in working capital. Working capital is the capital required for running the day-to-day activities of the business.

It is calculated as follows:

Working Capital = Current Assets – Current Liabilities

Current assets are the short term assets of a business.

For example: Cash, Bank Balance, Bills Receivables, Debtors Stock, prepaid expenses etc.

Current liabilities are the short term liabilities of a business.

For example: Outstanding expenses, Bills payable, Creditors, Bank overdraft etc.

Rules for preparing the schedules

1. Increase in Current Assets increases the working capital.
2. Decrease in Current Assets decreases the working capital.
3. Increase in Current Liabilities decreases the working capital.
4. Decrease in Current Liabilities increases the working capital.

Below given is the format of schedule of changes in working capital.

Schedule of Changes in Working Capital

<i>Particulars</i>	<i>2014</i>	<i>2015</i>	<i>Changes in working capital</i>	
			<i>Increase</i>	<i>Decrease</i>
	₹	₹	₹	₹
A. Current Assets:				
Cash				
Bank				
Debtors				
Bills Receivable				
Inventories				
Prepaid Expenses				
Short-term loans and advances				
(A) Total Current Assets				
B. Current Liabilities:				
Sundry Creditors				
Bills payable				
Banks Overdraft				
Outstanding Expenses				
(B) Total Current Liabilities				
C. Working Capital (A - B)				
D. Increase or Decrease in Working Capital				

Step-2: Analysing the Changes in Non-current Items (Preparation of non-current accounts)

For identifying inflow or outflow of fund on account of non-current items, ledger accounts should be prepared. If there is no additional information, it is easy to find out the change (inflow or outflow) in non-current items.

For example, the opening value of plant and machinery is ₹ 1,50,000 and its closing value is ₹ 2,00,000. Then we can assume that additional plant and machinery of ₹ 50,000 has been purchased during the year. It should be taken as outflow (i.e. use or application of fund) in the funds flow statement.

Points to Remember (In the absence of Additional Information)

1. Increase in non-current of fixed asset is purchase (application of fund).
2. Increase in intangible assets like goodwill, patent, trade mark etc. is purchase (application of fund).

NOTES

3. Decrease in non-current or fixed asset is due to depreciation or sale. However, the decrease in fixed asset is generally treated as depreciation.
4. Decrease in intangible and fictitious assets should be taken as amounts written off to Profit & Loss A/c. Hence, these are added back to current year profit or debited to P/L Adjustment A/c (for computation of funds from operation).
5. Increase in share capital or debentures or share premium is source.
6. Decrease in redeemable preference share capital or debenture is application.
7. Increase in long term loan is source and decrease in long term loan is application or use.
8. Increase in general reserves means transfer of profit from P/L A/c. It is added back to current year profit (or debited to P/L Adjustment A/c) to find out funds from operation.

For example: If the balance sheet on two different dates show Plant Machinery A/c at ₹ 1,20,000 and ₹ 80,000 respectively and the amount of depreciation is ₹ 15,000, the hidden information can be found out by preparing a Plant and Machinery A/c as below:

Plant and Machinery A/c			
		₹	₹
Balance b/d	1,20,000	Depreciation	15,000
		Cash (sale of machinery)	25,000
		(bal. figure)	
		Balance c/d	80,000
	1,20,000		1,20,000

Sale of machinery for ₹ 25,000 should be shown as source of fund (inflow) in the fund flow statement and depreciation ₹ 15,000 should be debited to Adjusted Profit and Loss Account for calculating funds from operation.

Step-3: Compute the Fund from Operations

Trading profit or profit from operation is an important source of fund. It is the funds generated from business operation. It is an internal source of fund. Sales are the main source of inflow of fund. At the same time cost of goods sold and all other expenses are the outflow of fund. The net effect of operation (profit) is a source of fund. If the net result is a loss, it will be an outflow of fund.

NOTES

19.4 METHODS OF CALCULATION OF FUNDS FROM OPERATION

1. Statement Method

Under this method, fund from operation is calculated by preparing a statement of funds from operation. The calculation begins from net profit of the current year. All non-fund and non-operating expenses (debited in the P/L A/c) are added back to net profit. These are added because these do not affect working capital or do not involve flow of fund so that actual funds from operation will be larger by the amount of such items. Then non-fund and non-operating incomes (credited in the P/L A/c) are deducted. The resultant amount is the funds from operation. The statement of funds from operation is prepared as follows:

Calculation of funds from operation

	₹	₹
Net profit for the current year		xxx
Add: All non-fund and non-operating expenses debited to P/L A/c:		
Depreciation	xxx	
Goodwill written off	xxx	
Preliminary expenses written off	xxx	
Loss on sale of fixed assets	xxx	
Transfer to reserves etc.	xxx	xxx
Less: Non-fund and non-operating income credited to P/L A/c:		
Dividend received	xxx	
Interest on investment	xxx	
Profit on sale of fixed assets	xxx	xxx
Funds from operation		xxx

2. Preparation of Adjusted Profit and Loss Account

Adjusted profit and loss account is prepared in order to find out the funds from operations. It takes into consideration the depreciation preliminary expenses losses, provisions and transfer of general reserve which are added to the net profit. From the resultant the profits and non-operating incomes are deducted in order to arrive at funds from operations.

Format of Adjusted Profit and Loss Account:

Dr.		Adjusted Profit and Loss Account		Cr.
Particulars	₹	Particulars	₹	
To Depreciation account	xxx	By Balance b/d		
To Preliminary expenses written off account	xxx	(Opening balance of profit and loss account)	xxx	
To Contribution to debenture redemption fund account	xxx	By Profit on sale of assets	xxx	
To Goodwill written off	xxx	By Profit on revaluation of assets	xxx	
To Transfer to general reserve A/c.	xxx	By Non-operating Income	xxx	
To Provision for taxation	xxx	By Funds from operation (balance figure)	xxx	
To Proposed dividend account	xxx			
To Loss on sale of assets	xxx			
To Balance c/d (closing balance of Profit and Loss account)	xxx			
To Fund to operation (balance figure)	xxx			
	xxx		xxx	

Step-4: Preparation of Fund Flow Statement

Fund flow statement is a statement in summary form indicating the sources and utilization of funds in a business concern.

Format of Fund Flow Statement is given below:

Statement of Sources and Application of Funds

Sources	₹	Applications	₹
1. Issue of share capital	xxx	1. Increase in working capital	xxx
2. Issue of debentures	xxx	2. Redemption of shares	xxx
3. Long term loans and advances	xxx	3. Redemption of debentures	xxx
4. Sale of fixed assets	xxx	4. Repayment of loans	xxx
5. Sale of investment	xxx	5. Payment of dividend	xxx
6. Funds from operation	xxx	6. Purchase of investments	xxx
7. Non trading incomes		7. Purchase of fixed assets	xxx
8. Decrease in working capital	xxx	8. Non-trading expenses	xxx
		9. Funds to operation	xxx
	xxx		xxx

*Speciman of vertical form of fund flow statement***Fund Flow Statement**

	₹
Sources:	
1. Issue of shares	xxx
2. Issue of debentures	xxx
3. Medium or long term borrowing	xxx
4. Sale of fixed assets	xxx
5. Sale of investment	xxx
6. Funds from operations	xxx
7. Non trading incomes (e.g. dividend received)	xxx
8. Decrease in working capital (as per the schedule of changes in working capital)	xxx
Total	xxxx
Uses of application:	
1. Redemption of shares	xxx
2. Redemption of debentures	xxx
3. Repayment of long term borrowing	xxx
4. Purchase of fixed assets	xxx
5. Purchase of investment	xxx
6. Non-trading expenses (e.g. dividend paid)	xxx
7. Increase in working capital (as per the schedule of changes in working capital)	xxx
Total	xxxx

Treatment of Special Items**1. Proposed Dividend**

Proposed dividend may be treated as non-current liability. The proposed dividend for the current year should be debited to Adjusted P/L A/c (or added back to current profit) in order to find out fund from operation. The dividend paid will be shown as application in the fund flow statement. Dividend proposed last year is assumed to have been paid during the year.

2. Dividend Paid

Sometimes proposed dividend is not given in the balance sheet. But dividend paid is given under adjustment. In such cases, it is added back to net profit while calculating fund from operation. It should also be taken in the Fund Flow Statement as an application.

3. Interim Dividend

NOTES

Interim dividend is always given as additional information. It should be added back to net profit (or debited in P/L Adjustment A/c) while calculating fund from operation. It should also be taken as application in Fund Flow Statement.

4. Provision for Taxation

It is treated as non-current liability. In this case, a ledger account is prepared for this item in the work sheet, the closing balance figure (on the credit side) being the provision made during the year, should be taken to the debit side of 'Adjusted P/L A/c' for calculating funds from operation. The amount of tax paid will be shown as application in the "Fund Flow Statement".

19.5 PRACTICAL PROBLEMS

Illustration-1

State with the reasons whether following transactions result in increase or decrease of working capital or do not affect the working capital.

- (i) Bills receivable ₹ 40,000 discounted for ₹ 39,000
- (ii) Fixed assets purchased by issuing of shares for ₹ 3,00,000
- (iii) Advance income tax paid ₹ 10,000
- (iv) Goodwill written off ₹ 5,000
- (v) 10% debentures ₹ 80,000 redeemed at 5% premium.

Solution:

- (i) Bills receivable ₹ 40,000 discounted at ₹ 39,000 indicates the movement of fund or bills receivable and highlight the decrease of assets because bills receivable is discounted at a lesser value. So here working capital decreased.
- (ii) When fixed assets are purchased by issuing shares, there is no change in the working capital as both the items does not affect current assets or current liabilities.
- (iii) Advance income tax does not affect the working capital because it is prepaid from cash.
- (iv) Goodwill written off does not affect the working capital because it goodwill is a fixed asset.

Illustration-2

State with reasons whether the following transactions result in increase/decrease/no change in working capital.

NOTES

- (a) Bills receivable ₹ 65,000 discounted for ₹ 63,400
- (b) Short term loans raised ₹ 1,50,000
- (c) Short term loans raised ₹ 1,50,000
- (d) Issue of shares ₹ 10,00,000 against fixed assets
- (e) Bills ₹ 60,000 accepted.

Solution:

- (a) Bills receivable ₹ 65,000 discounted for ₹ 63,400 indicates the movement of funds and highlights the decrease of assets because bills receivable is discounted at a lesser value, So working capital decreases.
- (b) Sale of fixed assets for cash will increase the working capital because the cash inflows
- (c) Short term loans raised by ₹ 1,50,000 will affect the working capital as current liabilities increases, so the working capital decreases
- (d) This transaction does not affect the working capital.
- (e) Bills ₹ 60,000 Accepted affects the working capital as current Assets increase hence working capital increases.

Illustration – 3

State with reasons whether the following transactions result in the increase or decrease of working capital or do not affect the working capital

- a) Machinery purchased for ₹ 4,00,000 by issue of equity shares of the same amount.
- b) Buildings purchased for cash ₹ 3,00,000
- c) Bills receivable ₹ 20,000 was discounted for ₹ 18,000
- d) 12% debentures of ₹ 1,00,000 redeemed at 10% premium
- e) Goodwill written off ₹ 10,000

Solution:

- (a) Machinery purchased by issue of equity shares do not affect the working capital, because both are non-current items.
- (b) Purchase of building for cash will decrease the working capital because cash outflows.
- (c) Bills receivable of ₹ 20,000 discounted for ₹ 18,000 indicates the movement of funds and highlights the decrease of assets because bills receivable is discounted at a lesser value, so working capital decreases.

(d) 12% debentures of ₹ 1,00,000 redeemed at 10% premium results in decrease in working capital.

(e) Goodwill written off will not affect the working capital.

Illustration – 4

From the following Balance Sheets of A Ltd. you are required to prepare a schedule of changes in working capital.

<i>Liabilities</i>	<i>31.3.2014</i> ₹	<i>31.3.2015</i> ₹	<i>Assets</i>	<i>31.3.2014</i> ₹	<i>31.3.2015</i> ₹
Capital	80,000	85,000	Land & Buildings	50,000	50,000
Profit and Loss A/c	14,500	24,500	Plants and		
Creditors	9,000	5,000	Machinery	24,000	34,000
Mortgage	-	5,000	Stock	9,000	7,000
			Debtors	16,500	19,500
			Cash at Bank	4,000	9,000
	1,03,500	1,19,500		1,03,500	1,19,500

Solution:

<i>Particulars</i>	<i>31.3.2014</i> ₹	<i>31.3.2015</i> ₹	<i>Changes in working capital</i>	
			<i>Increase</i> ₹	<i>Decrease</i> ₹
(A) Current Assets				
Stock	9,000	7,000		2,000
Debtors	16,500	19,500	3,000	
Cash at bank	4,000	9,000	5,000	
Total	29,500	35,500		
(B) Current Liabilities				
Creditors	9,000	5,000	4,000	
Total	9,000	5,000		
(C) Working Capital (A – B)	20,500	30,500		
Net increase in working Capital	10,000			10,000
	30,500	30,500	12,000	12,000

Illustration – 5

From the following information provided by M/s. Anandi Co., Ltd., on 31st December 2014 and 31st December 2015. Construct a schedule of changes in working capital.

Balance Sheet of M/s. Anandi Co., Ltd.

<i>Liabilities</i>	<i>2014</i>	<i>2015</i>	<i>Assets</i>	<i>2014</i>	<i>2015</i>
Equity share Capital	4,50,000	4,00,000	Land	3,00,000	2,50,000
			Building	2,00,000	1,50,000

Profit & Loss account	2,00,000	2,20,000	Plant and		
6% Debentures	3,00,000	3,00,000	Machinery	2,00,000	1,50,000
Sundry creditors	90,000	65,000	Inventories	1,25,000	75,000
Bills payable	10,000	10,000	Sundry debtors	1,50,000	2,00,000
Outstanding Expenses	2,000	5,000	Cash at Bank	70,000	1,70,000
Prepaid expenses	7,000	5,000	Prepaid expenses	7,000	5,000
	10,52,000	10,00,000		10,52,000	10,00,000

Solution:

Schedule of Changes in Working Capital

Particulars	2014 ₹	2015 ₹	Changes in working capital	
			Increase ₹	Decrease ₹
A. Current Assets:				
Inventories	1,25,000	75,000		50,000
Sundry debtors	1,50,000	2,00,000	50,000	
Cash at bank	70,000	1,70,000	1,00,000	
Prepaid expenses	7,000	5,000		2,000
(A) Total current assets	3,52,000	4,50,000		
B. Current Liabilities:				
Sundry creditors	90,000	65,000	25,000	
Bills payable	10,000	10,000	-	-
Outstanding expenses	2,000	5,000		3,000
(B) Total current liabilities	1,02,000	80,000		
C. Change in Working Capital (A – B)	2,50,000	3,70,000		
D. Increase in working Capital	1,20,000			1,20,000
	3,70,000	3,70,000	1,75,000	1,75,000

Illustration – 6

From the following prepare:

(a) Provision for tax account

(b) Machinery account

Opening provision for tax	20,000
Closing provision for tax	30,000
Tax paid during the year	25,000
Plant and machinery on 01-01-2013	5,00,000
Depreciation on plant and machinery during the year	50,000

Plant and machinery on 01-01-14 8,00,000

A piece of machinery costing ₹ 12,000 was sold for ₹ 8,000
depreciation of ₹ 7,000 had been provided on it.

Solution:

Dr.		Provision for Tax Account		Cr.	
Particulars	₹	Particulars	₹		
To Bank A/c (Tax paid)	25,000	By Balance b/d	20,000		
To Balance c/d	30,000	By Adj. P/L A/c (provision for Tax during the year) (b/f)	35,000		
	55,000		55,000		

Dr.		Plant and Machinery A/c		Cr.	
Particulars	₹	Particulars	₹		
To Balance b/d	5,00,000	By Depreciation (P/L a/c)	50,000		
To P/L A/c (profit on sale)	3,000	By Bank A/c (sales)	8,000		
(profit on sales)		By Balance c/d	8,00,000		
To Bank A/c	3,55,000				
	8,58,000		8,58,000		

Illustration – 7

From the following Profit and Loss account of M/s. Sheela & Co., Ltd. Calculate the funds from operations.

**Profit & Loss Account of M/s. Sheela & Co., Ltd.,
For the year ending 31st March 2014**

Dr.		Cr.	
Particulars	Amount	Particulars	Amount
To Printing and Stationery account	5,000	By Gross profit	60,000
To Depreciation account	4,000	By Profit on sale of fixed assets	5,000
To Cleaning charges	4,000		
To Preliminary expenses written off	3,000		
To Goodwill account	2,000		
To Provision for taxation account	3,000		
To Proposed dividend	6,000		
To Conveyance expenses account	4,000		
To Net Profit	34,000		
	65,000		65,000

Solution:

Adjusted Profit & Loss Account

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Depreciation account	4,000	By Balance b/d	-
To Preliminary expenses (Opening balance of profit written off and loss account)	3,000		
To Goodwill written off	2,000	By Profit on Sale of fixed assets	5,000
To Provision for taxation account	3,000	By Funds from operation	47,000
To Proposed dividend	6,000	(Balancing figure)	
To Balance c/d (Closing balance of profit & loss A/c)	34,000		
	52,000		52,000

Preparation of Ledger Accounts

If there is any hidden information prevailing in any particular account.
Then ledger account is opened to locate the hidden information.

Format of Ledger Accounts:

Dr. Machinery Account
Cr.

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Balance b/d	xxx	By Balance c/d	xxx
To Cash Account	xxx		
	xxx		xxx

Dr. Provision for Taxation Account
Cr.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Cash account (Income Tax paid)	xxx	By Balance b/d	xxx
To Balance c/d (Provision)	xxx	By Adjusted P/L account	xxx
	xxx		xxx

Illustration – 8

Calculate funds from operation from the following profit and loss account of M/s. Sharada and Co.

Profit and Loss Account

To Salaries	20,000	By Gross profit	4,00,000
To Commission	4,000	By Profit on sale of machine	8,000
To Rent	4,000	By Dividend received	4,000
To Provision for depreciation	28,000	By Refund of tax	6,000
To Discount allowed	2,000		
To Transfer to general reserve	40,000		
To Provision for tax	20,000		
To Loss on sale of investments	10,000		
To Discount on issue of debentures	4,000		
To Preliminary expenses	6,000		
To Selling expenses	40,000		
To Net Profit	2,40,000		
	4,18,000		4,18,000

Solution:

Particulars		Amount
Net Profit (as given)		2,40,000
<i>Add:</i> Non fund items debited to P/L account		
Provision for depreciation	28,000	
Transfer to general reserve	40,000	
Provision for taxation	20,000	
Loss on sale of investments	10,000	
Discount on issue of debentures	4,000	
Preliminary expenses	6,000	1,08,000
		3,48,000
<i>Less:</i> Non fund items credited to P/L account:		
Dividend received	4,000	
Profit on sale of machine	8,000	12,000
Fund from operations		3,36,000

Illustration – 9

Calculate funds form operation from the following income statement:

Income Statement

	₹		₹
To Rent paid	25,000	By Gross Income	5,00,000
To Salaries paid	1,00,000	By Profit on sales of Vehicle	3,000
To Provision for depreciation	50,000	By Refund of Tax	2,000
To Commission paid	5,000	By Dividend received	10,000

To Provision for taxation	1,50,000	
To General Reserve	3,000	
To Loss on sale of investments	10,000	
To Cost of issue of shares written off	2,000	
To Provision for legal damages	5,000	
To Net Income	1,65,000	
	5,15,000	5,15,000

Solution:

Adjusted Profit and Loss Account			
Dr.			Cr.
<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Provision for depreciation	50,000	By Profit on sales of Vehicle	3,000
To Provision for taxation	1,50,000	By Refund of Tax	2,000
To General Reserve	3,000	By Dividend received	10,000
To Loss on sale of investments	10,000	Fund from Operation	3,70,000
To Cost of issue of shares written off	2,000		
To Provision for legal damages	5,000		
To Net Income	1,65,000		
	3,85,000		3,85,000

Illustration – 10

From the following details calculate funds from operations and show the relevant items only in the fund flow statement as on 31-12-2015.

The current year's profit of X Ltd., is ₹ 80,000 after incorporating the following:

Depreciation ₹ 45,000

Goodwill written off ₹ 12,000

Loss on sale of furniture ₹ 5,000

Profit on sale of investments ₹ 15,000

Tax provision ₹ 35,000

Dividend paid ₹ 40,000

Preliminary expenses ₹ 5,000

Transfer to general reserve ₹ 25,000

Other Information:

Machinery was sold on 1-1-2015 at its book value of ₹40,000. Book value of investment sold was ₹ 35,000. Increase in working capital was ₹ 2,77,000

Solution:

Dr.	Adjusted Profit & Loss Account		Cr.
	₹		₹
To Depreciation	45,000	By Profit on sale of	
To Goodwill written of	12,000	investments	15,000
To Loss on sale of Furniture	5,000	By Funds from operation	2,32,000
To Tax provision	35,000		
To Dividend paid	40,000		
To Preliminary expenses	5,000		
To Transfer to general Reserve	25,000		
To Balance c/d (Closing profit)	80,000		
	2,47,000		2,47,000

Fund Flow Statement

Sources	₹	Application	₹
Funds from Operation	2,32,000	Increase in Working Capital	2,77,000
Sale of Machinery	40,000	Purchase of Machinery	45,000
Sale of Investment (35,000 + 15,000)	50,000		
	3,22,000		3,22,000

Note: Calculation purchase of machinery Account:

Machinery Account

	₹		₹
To Balance b/d	40,000	By Adjusted P/L Account	45,000
To Cash Account (Purchases)	45,000	(Depreciation)	
		By Cash (Sale)	40,000
	85,000		85,000

Illustration – 11

From the following balance sheet and additional information given, you are required to calculate funds from operations for the year ended 2015.

Balance Sheet

Liabilities	2014 ₹	2015 ₹	Assets	2014 ₹	2015 ₹
Share capital	1,00,000	1,50,000	Land and Buildings	1,00,000	95,000
General Reserve	30,000	30,000	Plant and Machinery	80,000	90,000
Profit & Loss A/c	20,000	22,000	Stocks	70,000	1,10,000
6% Debentures	80,000	80,000	Debtors	20,000	25,000
Creditors	65,000	58,000	Investments	-	10,000

Provision for tax	5,000	10,000	Cash	10,000	10,000
			Goodwill	20,000	10,000
	3,00,000	3,50,000		3,00,000	3,50,000

Additional Information:

1. During 2015 dividends of ₹15,000 were paid
2. Depreciation written off on plant and machinery amounted to ₹ 6,000 and no depreciation has been charged on land and buildings.
3. Provision for tax made during the year ₹ 5,000
4. Profit on sale of machinery ₹ 2,000

Solution:

Profit & Loss Adjustment A/c			
Dr.			Cr.
	₹		₹
To Goodwill written off	10,000	By Balance b/d	20,000
To Dividend	15,000	By Profit on sale of Machinery	2,000
To Depreciation on Plant Machinery	6,000	By Fund from Operation	36,000
To Provision for tax	5,000		
To Balance c/d	22,000		
	58,000		58,000

Illustration – 12

Prepare a statement of sources and application of funds, from the following details.

- (a) X Company Ltd. issue 1000 Shares ₹ 100 each a premium of ₹ 20 per share and duly received. (b) The company redeemed preference shares of ₹ 1,00,000 at a premium of ₹ 10,000 (c) Investment are sold for ₹ 50,000 (d) Sale of machinery during the year ₹ 30,000 (e) Purchase of fixed assets ₹ 1,20,000. (f) Dividend paid ₹ 40,000 and Income Tax paid ₹ 35,000 (g) Increase in working capital ₹ 60,000. (h) Closing balance of Profit & Loss A/c was ₹ 45,000.

Solution:

Statement of Sources and Applications			
Sources	₹	Applications	₹
Issue of share (10,000 x 120)	1,20,000	Redemption of share (1,00,000 + 10,000)	1,10,000
Sales of investment	50,000	Purchase of fixed assets	1,20,000
Sales of machinery	30,000	Payment of dividend	40,000

Fund from operation	1,65,000	Income tax paid	35,000
(balancing fig)		Increase in working	60,000
	3,65,000		3,65,000

Illustration – 13

From the following information prepare a statement of sources and application of funds for the year ended 31-12-2014.

1. Increase in working capital ₹ 4,000
2. Depreciation on fixed assets ₹ 17,500
3. Dividend paid ₹ 17,500
4. Goodwill written off ₹ 15,000
5. Fresh Issue of equity shares for cash ₹ 15,000
6. Machinery was purchased for ₹ 10,000
7. Preference share capital redeemed ₹ 60,000
8. Net profit ₹ 9,000.

Solution:

Dr.	Adjusted Profit & Loss Account		Cr..
<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Depreciation on fixed Assets	17,500	By Funds from Operation A/c.	59,000
To Dividend paid	17,500		
To Goodwill written off	15,000		
To Balance c/d (N/P - closing balance)	9,000		
	59,000		59,000

Preparation of Fund Flow Statement

Fund Flow Statement			
<i>Sources</i>	₹	<i>Applications</i>	₹
Issue of Equity Shares	15,000	Increase in Working Capital	4,000
		Machinery purchased	10,000
Funds from operation	59,000	Redemption of Preference shares	60,000
	74,000		74,000

Illustration – 14

From the following Trial Balance, prepare fund flow statements

<i>Particulars</i>	<i>2011</i>		<i>2012</i>	
	<i>Debit Balance ₹</i>	<i>Credit Balance ₹</i>	<i>Debit Balance ₹</i>	<i>Credit Balance ₹</i>
Machinery	50,000	—	60,000	—
Furniture	10,000	—	15,000	—
Share Capital	—	3,00,000	—	4,00,000
Stock	85,000	—	1,05,000	—
Debtors	1,60,000	—	1,50,000	—
Cash	1,10,000	—	1,70,000	—
Creditors	—	1,00,000	—	70,000
Profit and Loss Account	—	15,000	—	30,000
Total	4,15,000	4,15,000	5,00,000	5,00,000

Solution:**Schedule of Changes in Working Capital**

<i>Particulars</i>	<i>2011 ₹</i>	<i>2012 ₹</i>	<i>Changes in W.C</i>	
			<i>Increase ₹</i>	<i>Decrease ₹</i>
A. Current Assets:				
Stock	85,000	1,05,000	20,000	
Debtors	1,60,000	1,50,000		10,000
Cash	1,10,000	1,70,000	60,000	
Total Current Assets (A)	3,55,000	4,25,000		
B. Current Liabilities:				
Creditors	1,00,000	70,000	30,000	—
Total Current Liabilities (B)	1,00,000	70,000		
C. Working Capital: (A – B)	2,55,000	3,55,000		
D. Increase in Working Capital	1,00,000	—	—	1,00,000
	3,55,000	3,55,000	1,10,000	1,10,000

Preparation of Ledger Accounts:

Dr. Machinery Account		Cr.	
<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Balance b/d	50,000	By Balance c/d	60,000
To Cash Account (purchase)	10,000		
	60,000		60,000

Dr. Furniture Account		Cr.	
Particulars	₹	Particulars	₹
To Balance b/d	10,000	By Balance c/d	15,000
To Cash Account (purchase)	5,000		
	15,000		15,000

Dr. Share Capital Account		Cr.	
Particulars	₹	Particulars	₹
		By Balance b/d	3,00,000
To Balance c/d	4,00,000	By Cash Account	1,00,000
	4,00,000		4,00,000

Dr. Adjusted Profit & Loss Account		Cr.	
Particulars	₹	Particulars	₹
		By Balance b/d	15,000
To Balance c/d	30,000	By Funds from Operation	15,000
	30,000		30,000

Funds Flow Statement

Sources	₹	Application	₹
Issue of Share Capital	1,00,000	Increase in Working Capital	1,00,000
Fund from Operation	15,000	Purchase of machinery	10,000
		Purchase of Furniture	5,000
	1,15,000		1,15,000

Illustration – 15

From the following particulars prepare a statement of sources and application of funds for the year ended 31st December 2015 of X Co., Ltd.

- X Co, Ltd. issued 1,000 shares of ₹ 100 each at a premium of ₹ 20 per share and all the shares are subscribed and fully paid up.
- The Company has redeemed preference shares for ₹ 1,00,000 at 10% premium.
- Investments are sold for ₹ 50,000 (Resulting in a profit of ₹ 20,000)
- Sale of machinery during the year ₹ 30,000 (resulting in a loss of ₹ 5,000)

- (e) Purchase of fixed assets ₹ 1,20,000
- (f) Dividends paid ₹ 40,000 and Income Tax paid ₹ 35,000.
- (g) Working Capital of the Company was ₹ 1,20,000 on 1-1-2015 and ₹ 1,80,000 on 31-12-2015.
- (h) Closing balance in Profit & Loss Account was ₹ 45,000 more than opening balance as per balance sheets
- (i) Depreciation provided for the year was ₹ 50,000 and preliminary expenses written off was ₹ 10,000

Solution:**Preparation of Schedule of Changes in Working Capital**

There is no necessity to prepare the schedule since working capital is already calculated.

Closing Working Capital =	₹ 1,80,000
Less: Opening Working Capital =	₹ 1,20,000
Increase in Working Capital =	₹ 60,000

Ledger Accounts:

Adjusted Profit and Loss Account			
Dr.			Cr.
<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Loss on sale of machinery Account	5,000	By Balance b/d	—
To Dividends paid	40,000	By Profit on sale of	
To Depreciation Account	50,000	By Investment Account	20,000
To Provision for tax	35,000	By Funds from Operation	1,65,000
To Preliminary Expenses written off	10,000		
To Balance c/d	45,000		
	1,85,000		1,85,000

Fund Flow Statement

<i>Sources</i>	₹	<i>Applications</i>	₹
Issue of Shares (1,000 shares @ ₹ 120)	1,20,000	Redemption of Preference shares Account (1,00,000 + 10,000)	1,10,000
Sale of Investment	50,000	Purchase of fixed assets	1,20,000
Sale of Machinery	30,000	Dividend paid	40,000
Funds from Operation (B/F)	1,65,000	Income Tax Paid	35,000
		Increasing in working Capital	60,000
	3,65,000		3,65,000

Illustration – 16

Following are the summarised Balance Sheets of Sahana Ltd as on 31st December 2013 and 2014.

Balance Sheet

<i>Liabilities</i>	<i>2013</i>	<i>2014</i>	<i>Assets</i>	<i>2013</i>	<i>2014</i>
Share Capital	4,50,000	4,50,000	Fixed Assets	4,00,000	3,20,000
General Reserve	3,00,000	3,10,000	Investments		
Profit & Loss Account	56,000	68,000	(Non Current)	50,000	60,000
Creditors	1,68,000	1,34,000	Stock	2,40,000	2,10,000
Provision			Debtors	2,10,000	4,55,000
For Taxation	75,000	10,000	Bank	1,49,000	1,97,000
Mortgage Loan	—	2,70,000			
	10,49,000	12,42,000		10,49,000	12,42,000

Additional Information:

- Investments costing ₹ 8,000 were sold during the year 2014 for ₹ 8,500
- Provision for taxation made during the year was ₹ 90,000.
- During the year part of the fixed assets costing ₹ 10,000 was sold for ₹ 12,000. The profit was included in Profit and Loss Account.
- Dividend paid during the year amounting to ₹ 40,000.

Prepare a statement showing the sources and applications of funds for the year ended 31st December 2014.

Solution:**Schedule of Changes in Working Capital**

<i>Particulars</i>	<i>2013</i>	<i>2014</i>	<i>Changes in working capital</i>	
			<i>Increase</i>	<i>Decrease</i>
	₹	₹	₹	₹
Current Assets:				
Stock	2,40,000	2,10,000		30,000
Debtors	2,10,000	4,55,000	2,45,000	
Bank	1,49,000	1,97,000	48,000	
(A) Total Current Assets	5,99,000	8,62,000		
Current Liabilities:				
Creditors	1,68,000	1,34,000	34,000	
(B) Current Liabilities	1,68,000	1,34,000		
Working Capital (A – B)	4,31,000	7,28,000		
Increase in Working Capital	2,97,000			2,97,000
	7,28,000	7,28,000	3,27,000	3,27,000

Preparation of Ledger Accounts:

Dr.		Fixed Assets Account		Cr.	
<i>Particulars</i>	₹	<i>Particulars</i>	₹		
To Balance b/d	4,00,000	By Balance c/d	3,20,000		
To Adjusted Profit & Loss A/c (Profit on sale of fixed asset)	2,000	By Cash Account (Sale)	12,000		
		By Adjusted Profit & Loss A/c (Depreciation)	70,000		
	4,02,000		4,02,000		

Dr.		Investments Account		Cr.	
<i>Particulars</i>	₹	<i>Particulars</i>	₹		
To Balance b/d	50,000	By Cash Account (sale)	8,500		
To Adjusted Profit & Loss A/c (profit on sale of investment)	500	By Balance c/d	60,000		
To Cash Account (Purchase)	18,000				
	68,500		68,500		

Dr.		Share Capital Account		Cr.	
<i>Particulars</i>	₹	<i>Particulars</i>	₹		
		By Balance b/d	4,50,000		
To Balance c/d	4,50,000				
	4,50,000		4,50,000		

Dr.		General Reserve Account		Cr.	
<i>Particulars</i>	₹	<i>Particulars</i>	₹		
		By Balance b/d	3,00,000		
To Balance c/d	3,10,000	By Adjusted Profit & Loss A/c	10,000		
	3,10,000		3,10,000		

Dr.		Provision for Taxation Account		Cr.	
<i>Particulars</i>	₹	<i>Particulars</i>	₹		
To Cash Account (Tax paid)	1,55,000	By Balance b/d	75,000		
To Balance c/d	10,000	By Adjusted Profit & Loss A/c (Provision)	90,000		
	1,65,000		1,65,000		

Dr. Mortgage Loan Account		Cr.	
Particulars	₹	Particulars	₹
		By Balance b/d	—
To Balance c/d	2,70,000	By Cash Account	2,70,000
	2,70,000		2,70,000

Dr. Adjusted Profit and Loss Account		Cr..	
Particulars	₹	Particulars	₹
To Depreciation on fixed Assets	70,000	By Balance b/d	56,000
To Transfer to General Reserve	10,000	By Profit on Sale of fixed Assets	2,000
To Provision for Taxation	90,000	By Profit on Sale of Investments	500
To Dividend paid	40,000	By Funds from Operation	2,19,500
To Balance c/d	68,000		
	2,78,000		2,78,000

Fund Flow Statement

Sources	₹	Applications	₹
Sale of Fixed Assets	12,000	Increase in WC	2,97,000
Sale of Investments	8,500	Purchase of Investments	18,000
Mortgage Loan	2,70,000	Tax paid	1,55,000
Funds from Operation	2,19,500	Dividend paid	40,000
	5,10,000		5,10,000

Illustration – 17

From the following balance sheets of XYZ Ltd., prepare funds flow statement for 2015:

Particulars	31.3.2014	31.3.2015
Liabilities:		
Equity share capital	1,50,000	2,00,000
9% Redeemable preference shares	75,000	50,000
Capital reserve	-	10,000
General Reserve	20,000	25,000
P/L A/c	15,000	24,000
Proposed Dividend	21,000	25,000
Sundry Creditors	13,000	24,000
Bills payable	10,000	8,000
Liability for expenses	15,000	18,000
Provision for tax	20,000	25,000
	3,39,000	4,09,000
Assets:		
Goodwill	50,000	40,000

Land and Buildings	1,00,000	85,000
Plant	40,000	1,00,000
Investments (Long Term)	10,000	15,000
Sundry Debtors	70,000	85,000
Stock	39,000	55,000
Bills Receivables	10,000	15,000
Cash in hand	7,000	5,000
Cash at bank	5,000	4,000
Preliminary expenses	8,000	5,000
	3,39,000	4,09,000

Additional information:

1. A part of land was sold out in 2015, and the profit was credited to capital reserve.
2. A machine has been sold for ₹ 5,000 (WDV of machine was ₹ 6,000). Depreciation of ₹ 5,000 was charged on plant in 2015.
3. An interim dividend of ₹ 10,000 was paid in 2015.
4. An amount of ₹ 1,000 has been received by way of dividend on investments in 2015.

Solution:**Schedule of changes in Working Capital**

	2014	2015	Change in working capital	
			₹	₹
Current Assets:				
Sundry debtors	70,000	85,000	15,000	-
Stock	39,000	55,000	16,000	-
Bills receivable	10,000	15,000	5,000	-
Cash in hand	7,000	5,000	-	2,000
Cash at bank	5,000	4,000	-	1,000
Total current assets (A)	1,31,000	1,64,000		
Current Liabilities:				
Proposed dividend	21,000	25,000	-	4,000
Sundry creditors	13,000	24,000	-	11,000
Bills payable	10,000	8,000	2,000	-
Liabilities expenses	15,000	18,000	-	3,000
Provision for tax	20,000	25,000	-	5,000
Total current liabilities (B)	79,000	1,00,000		
Working capital (A – B)	52,000	64,000		
Increase in working capital	12,000			12,000
	64,000	64,000	38,000	38,000

Ledger A/c
Preparation of Land & Building Account

	₹		₹
To Balance b/d	1,00,000	By Cash A/c (Sales) (B/F)	25,000
To Capital Reserve A/c (Profit on sales)	10,000	By Balance c/d	85,000
	1,10,000		1,10,000

Plant Account

	₹		₹
To Balance b/d	40,000	By Adjusted P/L A/c (dep.)	5,000
To Cash A/c (Plant Purchase) (B/F)	71,000	By Cash A/c (Sales)	5,000
		By Adjusted P/L A/c (loss on sale)	1,000
		By Balance c/d	1,00,000
	1,11,000		1,11,000

Capital Reserve A/c

	₹		₹
To Balance c/d	10,000	By Land & Building A/c	10,000
	10,000		10,000

Adjusted P/L A/c

	₹		₹
To Goodwill written off	10,000	By Balance b/d	15,000
To Depn. on plant	5,000	By Dividend received	1,000
To Loss on sales machine	1,000	By Fund from operation	42,000
To Preliminary expenses	3,000		
To Interim dividend	10,000		
To General Reserves	5,000		
To Balance C/d	24,000		
	58,000		58,000

Fund Flow Statement

	₹		₹
Capital	50,000	Increase in working capital	12,000
Sales of plant	5,000		

Dividend received on investment	1,000	Purchase of plant	71,000
Fund from operation	42,000	Purchase of investment	5,000
Sales of Land & Buildings	25,000	Redemption of Preference share capital	25,000
		Interim Dividend	10,000
	1,23,000		1,23,000

Illustration – 18

Following are the Balance Sheets of Trishul Industries as on 31st December 2014 and 2015.

Liabilities	2014 ₹	2015 ₹
Share capital	4,00,000	5,00,000
General Reserve	1,00,000	1,50,000
P&L A/c	1,00,000	1,50,000
10% Debentures	2,00,000	2,00,000
Depreciation provision	1,50,000	2,00,000
Provision for Tax	40,000	50,000
Creditors	15,000	30,000
	10,05,000	12,80,000
Assets:		
Fixed Assets	5,00,000	7,00,000
Investments	2,00,000	1,80,000
Stock	1,50,000	1,00,000
Debtors	1,20,000	2,00,000
Cash	25,000	95,000
Underwriting Commission	10,000	5,000
	10,05,000	12,80,000

Additional Information:

The following transactions took place during the year 2015.

- Dividend paid ₹ 40,000
- Income tax paid ₹ 50,000
- There was a profit on sale of investments ₹ 10,000
- A machinery (cost ₹ 50,000 on which accumulated depreciation ₹ 40,000) was sold for ₹ 20,000

Prepare: (i) Statement showing changes in working capital (ii) Funds Flow Statement.

Solution:**Trishul Industries-Statement of change in working capital**

<i>Particulars</i>	<i>2014 ₹</i>	<i>2015 ₹</i>	<i>Increase ₹</i>	<i>Decrease ₹</i>
A. Current Assets:				
Stock	1,50,000	1,00,000	-	50,000
Debtors	1,20,000	2,00,000	80,000	
Cash	25,000	95,000	70,000	
Total Current Assets	2,95,000	3,95,000		
B. Current Liabilities:				
Creditors	15,000	30,000		15,000
C. Working capital (A – B)	2,80,000	3,65,000		
Net increase in W.C	85,000			85,000
	3,65,000	3,65,000	1,50,000	1,50,000

Working Note:**Fixed Assets Account**

	<i>₹</i>		<i>₹</i>
To Balance b/d	5,00,000	By Depreciation Provision A/c	40,000
To Adj P&L A/c (profit on sales)	10,000	By Cash A/c (Sale)	20,000
To Cash A/c (Purchase) b/f	2,50,000	By Balance c/d	7,00,000
	7,60,000		7,60,000

Depreciation Provision Account

	<i>₹</i>		<i>₹</i>
To Fixed Assets A/c	40,000	By Balance b/d	1,50,000
To Balance c/d	2,00,000	By Adjusted P&L A/c	90,000
	2,40,000	(Depreciation on remaining machines) (b/f)	2,40,000

Investment Account

	<i>₹</i>		<i>₹</i>
To Balance b/d	2,00,000	By Cash A/c (Sale) (b/f)	30,000
To Adj P&L (Profit on sale)	10,000	By Balance c/d	1,80,000
	2,10,000		2,10,000

Provision for Tax Account

	₹		₹
To Cash A/c (tax paid)	50,000	By Balance b/d	40,000
To Balance c/d	50,000	By Adj.P&L A/c (Provision)(b/f)	60,000
	1,00,000		1,00,000

Adjusted Profit and Loss Account (To find out FFO)

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Depreciation	90,000	By Balance b/d	1,00,000
To Transfer to General Reserve	50,000	By Profit on sale of Machinery	10,000
To Provision for Tax	60,000	By Investments profit on sale	10,000
To Under writing commission written off	5,000	By Funds from operation (b/f)	2,75,000
To Dividend paid	40,000		
To Balance c/d	1,50,000		
	3,95,000		3,95,000

Fund Flow Statement for the year ending 31st Dec. 2015

<i>Sources</i>	₹	<i>Applications</i>	₹
Funds from Operations	2,75,000	Purchase of Fixed Assets	2,50,000
Sale of Fixed Assets	20,000	Payment of Tax	50,000
Sale of Investment	30,000	Payment of Dividend	40,000
Share Capital	1,00,000	Net increase in Working capital	85,000
	4,25,000		4,25,000

Illustration – 19

The following are the summaries of the Balance sheet of Vijayalakshmi Ltd. as at 31st Dec. 2015 and 2016.

Balance Sheet

<i>Liabilities</i>	<i>2015</i>	<i>2016</i>	<i>Assets</i>	<i>2015</i>	<i>2016</i>
Share Capital	4,00,000	5,00,000	Land and Buildgs.	4,00,000	3,80,000
General Reserve	1,00,000	1,20,000	Plant	3,00,000	3,48,000
Profit and Loss Account	61,000	61,600	Stock	2,00,000	1,48,000
Bank loan (Shortterm)	1,40,000	-	Debtors	1,60,000	1,28,400
Creditors	3,00,000	2,70,000	Cash	1,000	1,200
Provision for taxation	60,000	70,000	Bank	-	16,000
	10,61,000	10,21,600		10,61,000	10,21,600

Additional information:

- (a) Depreciation was written off Plant ₹ 28,000 in 2016.
- (b) Dividend of ₹ 40,000 was paid during 2016.
- (c) Income-Tax provision was made during the year ₹ 50,000
- (d) A piece of land has been sold during the year at cost.

You are required to prepare a statement showing sources and applications of funds for the year 2016 and to schedule of changes in working capital.

Solution:**Schedules of changes in working capital**

	2015 ₹	2016 ₹	Increase ₹	Decrease ₹
Current Assets:				
Stock	2,00,000	1,48,000	—	52,000
Debtors	1,60,000	1,28,400	-	31,600
Cash	1,000	1,200	200	-
Bank	-	16,000	16,000	-
Total (A)	3,61,000	2,93,600		
Current Liabilities:				
Creditors	3,00,000	2,70,000	30,000	
Total (B)	3,00,000	2,70,000		
Working capital (A – B)	61,000	23,600		
Net decrease in WC		37,400	37,400	
	61,000	61,000	83,600	83,600

Statement of Sources and Application of Funds

Sources	₹	Application	₹
Issue of shares	1,00,000	Bank loan paid	1,40,000
Sale of land	20,000	Plant purchased	76,000
Funds from operations	1,38,600	Income tax paid	40,000
Net decrease in WC	37,400	Dividend paid	40,000
	2,96,000		2,96,000

Note: There is a printing error in Q. Paper. The balance of P/L A/c should be ₹ 61,600 in 2016 and not ₹ 61,200.

Share capital A/c

To Balance c/d	5,00,000	By Balance b/d	4,00,000
		By Bank (B/F)	1,00,000
	5,00,000		5,00,000

General Reserve A/c

To Balance c/d	1,20,000	By Balance b/d	1,00,000
		By P/L A/c (B/F)	20,000
	1,20,000		1,20,000

Provision for taxation A/c

To Balance c/d	70,000	By Balance b/d	60,000
To Tax paid (B/F) (Bank)	40,000	By P/L A/c	50,000
	1,10,000		1,10,000

Bank loan A/c

To Bank c/d	1,40,000	By Balance b/d	1,40,000
	1,40,000		1,40,000

Land and Building A/c

To Balance b/d	4,00,000	By Bank (B/F)	20,000
		By Balance c/d	3,80,000
	4,00,000		4,00,000

Plant A/c

To Balance b/d	3,00,000	By P/L (depreciation)	28,000
To Bank A/c (BF)	76,000	By Balance c/d	3,48,000
	3,76,000		3,76,000

Calculation of Funds From Operations

₹			
P/L A/c balance (2016)			61,600*
Add: Non fund items debited to P/L A/c			
General Reserve	20,000		
Provision for tax	50,000		
Depreciation	28,000		
Dividend paid	40,000	1,38,000	
		1,99,600	
Less: P/L balance (2015)			61,000
Funds from operations			1,38,600

Illustration – 20

From the following details relating to the accounts of RP Co. Ltd., prepare statement of sources and application of funds.

<i>Liabilities</i>	<i>31-12-2016</i>	<i>31-12-2015</i>
Share capital	4,00,000	3,00,000
Reserve	1,00,000	80,000
Profit and loss account	50,000	30,000
Debentures	1,00,000	1,50,000
Income tax provision	40,000	50,000
Trade creditors	70,000	90,000
Proposed dividend	40,000	30,000
	8,00,000	7,30,000
<i>Assets</i>		
Goodwill	90,000	1,00,000
Plant and machinery	4,29,250	2,98,000
Debenture discount	5,000	8,000
Prepaid expenses	5,750	4,000
Investments	60,000	1,00,000
Sundry debtors	1,10,000	1,60,000
Stock	80,000	50,000
Cash at Bank	20,000	10,000
	8,00,000	7,30,000

Other information:

- 15% depreciation has been charged in the accounts on plant and machinery.
- Old machinery costing ₹ 50,000 [WDV ₹ 20,000] have been sold for ₹ 35,000.
- A machine costing ₹ 10,000 [WDV ₹ 3,000] has been discarded.
- A plant costing ₹ 2,30,000 was purchased during the year.
- ₹ 10,000 profit has been earned by sale of Investments.
- Debentures have been redeemed at 5% premium.
- ₹ 45,000 income tax has been paid and adjusted against Income Tax provision account

Solution:

Schedule of Changes in Working Capital

	<i>2015</i>	<i>2016</i>	<i>Increase W.C.</i>	<i>Decrease W.C.</i>
Current Assets:				
Stock	50,000	80,000	30,000	-
Debtors	1,60,000	1,10,000	-	50,000
Cash at Bank	10,000	20,000	10,000	-
Prepaid expenses	4,000	5,750	1,750	-
Total (A)	2,24,000	2,15,750		

Current Liabilities:				
Trade creditors	90,000	70,000	20,000	-
Total liabilities (B)	90,000	70,000		
Working capital (A – B)	1,34,000	1,45,750		
Net increase	11,750			11,750
	1,45,750	1,45,750	61,750	61,750

Ledger A/c
Income Tax Provision A/c

	₹		₹
To Cash A/c (Tax paid)	45,000	By balance b/d	50,000
To Balance c/d	40,000	By P/L A/c	35,000
	85,000		85,000

Proposed Dividend A/c

	₹		₹
To Cash (Dividend paid)	30,000	By Balance b/d	30,000
To Balance c/d	40,000	By P/L appropriation A/c	40,000
	70,000		70,000

Plant and Machinery A/c

	₹		₹
To Balance b/d	2,98,000	By Sale of old machinery	20,000
To Profit on sale of plant	15,000	By Machine discarded	3,000
To Cash purchases	2,30,000	By Adjusted Profit & loss A/c	30,000
		By Profit on sales of machine	7,000
		By Depreciation (B/F)	53,750
		By Balance c/d	4,29,250
	5,43,000		5,43,000

Investment Account

	₹		₹
To Balance b/d	1,00,000	By Cash (Sale)	50,000
To P/L A/c (profit on sales)	10,000	By Balance c/d	60,000
	1,10,000		1,10,000

Adjusted P/L A/c

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Goodwill written off.	10,000	By Balance b/d	30,000
To Debenture discount written off	3,000	By Profit on sales of machine	15,000
To Premium on redemption of debenture	2,500	By Profit on sales of investment	10,000
To Loss on machine discarded	3,000	By Funds from operation (B/F)	1,99,250
To Provision for Income Tax	35,000		
To Proposed dividend	40,000		
To Reserves	20,000		
To Depreciation on plant	90,750		
To Balance c/d	50,000		
	2,54,250		2,54,250

Fund Flow Statement

<i>Sources</i>	₹	<i>Applications</i>	₹
Share capital	1,00,000	Redemption of debentures	52,500
Sale of Machine	20,000	Purchase of Machine	2,30,000
Sales of Investment	50,000	Payment of Tax	45,000
Fund from operation	1,99,250	Dividend paid	30,000
		Increase in working capital (w.c)	11,750
	3,69,250		3,69,250

19.6 SUMMARY

Funds flow statement is a statement which discloses the analytical information about the different sources of a fund and the application of the same in an accounting cycle. It deals with the transactions which change either the amount of current assets and current liabilities or fixed assets, long-term loans including ownership fund.

The financial position of a business enterprise gets changed with every transaction. In other words, there is a continuous movement of resources into the business, within the business and out of the business. Unfortunately, both the balance sheet and income statement do not explain the changes in the firm's financial position during a particular period of time. They fail to explain the changes in assets, liabilities and net worth. Hence the balance sheet and income statement must be analyzed. For this purpose, additional statements are required to be prepared from basic

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financial statements. Such statements prepared from balance sheet and income statement are called Statements of Changes in Financial Position.

Trading profit or profit from operation is an important source of fund. It is the funds generated from business operation. It is an internal source of fund. Sales are the main source of inflow of fund. At the same time cost of goods sold and all other expenses are the outflow of fund. The net effect of operation (profit) is a source of fund. If the net result is a loss, it will be an outflow of fund.

Adjusted profit and loss account is prepared in order to find out the funds from operations. It takes into consideration the depreciation preliminary expenses losses, provisions and transfer of general reserve which are added to the net profit. From the resultant the profits and non-operating incomes are deducted in order to arrive at funds from operations.

Proposed dividend may be treated as non-current liability. The proposed dividend for the current year should be debited to Adjusted P/L A/c (or added back to current profit) in order to find out fund from operation. The dividend paid will be shown as application in the fund flow statement. Dividend proposed last year is assumed to have been paid during the year.

Interim dividend is always given as additional information. It should be added back to net profit (or debited in P/L Adjustment A/c) while calculating fund from operation. It should also be taken as application in Fund Flow Statement.

Provision for Taxation is treated as non-current liability. In this case, a ledger account is prepared for this item in the work sheet, the closing balance figure (on the credit side) being the provision made during the year, should be taken to the debit side of 'Adjusted P/L A/c' for calculating funds from operation. The amount of tax paid will be shown as application in the "Fund Flow Statement".

19.7 GLOSSARY

- (a) **Funds flow statement:** Funds flow statement is a statement which discloses the analytical information about the different sources of a fund and the application of the same in an accounting cycle. It deals with the transactions which change either the amount of current assets and current liabilities or fixed assets, long-term loans including ownership fund.
- (b) **Financial position:** The financial position of a business enterprise gets changed with every transaction. In other words, there is a continuous movement of resources into the business, within the business and out of the business. Unfortunately, both the balance sheet and income statement do not explain the changes in the firm's financial position during a particular period of time.

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- (c) **Trading profit:** Trading profit or profit from operation is an important source of fund. It is the funds generated from business operation. It is an internal source of fund. Sales are the main source of inflow of fund. At the same time cost of goods sold and all other expenses are the outflow of fund. The net effect of operation (profit) is a source of fund. If the net result is a loss, it will be an outflow of fund.
- (d) **Adjusted profit and loss account:** Adjusted profit and loss account is prepared in order to find out the funds from operations. It takes into consideration the depreciation preliminary expenses losses, provisions and transfer of general reserve which are added to the net profit. From the resultant the profits and non-operating incomes are deducted in order to arrive at funds from operations.
- (e) **Proposed dividend:** Proposed dividend may be treated as non-current liability. The proposed dividend for the current year should be debited to Adjusted P/L A/c (or added back to current profit) in order to find out fund from operation. The dividend paid will be shown as application in the fund flow statement. Dividend proposed last year is assumed to have been paid during the year.
- (f) **Interim dividend:** Interim dividend is always given as additional information. It should be added back to net profit (or debited in P/L Adjustment A/c) while calculating fund from operation. It should also be taken as application in Fund Flow Statement.

19.8 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What is fund flow statement?
2. What is fund from operation?
3. What do you mean by working capital?
4. State any three managerial uses of fund flow statement.
5. What is from operation?
6. What do you mean by current liabilities?

(B) Extended Answer Questions

1. Distinguish between fund flow statement and cash flow statement.
2. What are the different methods of treating (a) Provision for taxation (b) Proposed Dividend.

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(C) True or False

1. Funds flow statement is a statement which discloses the analytical information about the different sources of a fund and the application of the same in an accounting cycle.
2. Trading profit or profit from operation is an important source of fund.
3. Adjusted profit and loss account is prepared in order to find out the funds from operations.
4. Proposed dividend may be treated as non-current liability.
5. Provision for Taxation is prepared for this item in the work sheet, the closing balance figure (on the credit side) being the provision made during the year, should be taken to the debit side of 'Adjusted P/L A/c' for calculating funds from operation.

(D) Multiple Choice Questions

1. Which statement discloses the analytical information about the different sources of a fund and the application of the same in an accounting cycle?
 - (a) Funds flow statement
 - (b) Trading profit
 - (c) Adjusted profit and loss account
 - (d) Proposed dividend
2. What is prepared in order to find out the funds from operations?
 - (a) Funds flow statement
 - (b) Trading profit
 - (c) Adjusted profit and loss account
 - (d) Proposed dividend
3. Which of the following may be treated as non-current liability?
 - (a) Funds flow statement
 - (b) Trading profit
 - (c) Adjusted profit and loss account
 - (d) Proposed dividend

(E) Fill in the Blanks

1.is a statement which discloses the analytical information about the different sources of a fund and the application of the same in an accounting cycle.

2. Trading profit or profit from operation is an important..... **NOTES**
3.is prepared in order to find out the funds from operations.
4.may be treated as non-current liability.
5.is prepared for this item in the work sheet, the closing balance figure (on the credit side) being the provision made during the year, should be taken to the debit side of 'Adjusted P/L A/c' for calculating funds from operation.

Practical Questions

Q-1. B.M. Company presents the following information and you are required to calculate funds from operations.

Dr.	Profit and Loss Account		Cr.
To Expenses Operation	1,00,000	By Gross profit	2,00,000
To Depreciation	40,000	By Gain on sale of Plant	30,000
To loss on sale of Building	20,000		
To Advertisement suspense A/c	5,000		
To Discount (Allowed to customers)	500		
To Discounting issue of shares	500		
To Goodwill	12,000		
To Net profit	52,000		
2,30,000	2,30,000		

Q-2. The following are the summarised Balance sheet of a Ltd. as on 31-12-2014 and 2015

<i>Liabilities</i>	<i>2014</i>	<i>2015</i>	<i>Assets</i>	<i>2014</i>	<i>2015</i>
Share Capital	4,50,000	4,50,000	Fixed Assets	4,00,000	3,20,000
General Reserve	3,00,000	3,10,000	Investments	50,000	60,000
P & L A/c	56,000	68,000	Stock	2,40,000	2,10,000
Creditors	1,68,000	1,34,000	Debtors	2,10,000	4,55,000
Taxation	75,000	10,000	Bank	1,49,000	1,97,000
Loan (short term)	—	2,70,000			
10,49,000	12,42,000		10,49,000	12,42,000	

Additional information:

- Investment costing ₹ 8,000 were sold during the year 2014 for ₹ 8,500.
 - Provision for Taxation made during the year 2014 was ₹ 9,000
 - During the year 2014 part of the fixed assets costing ₹ 10,000 was sold for ₹ 12,000
 - Dividend paid during the year 2014 amount to ₹ 40,000
- From the above information prepare.
- A schedule of changes in working capital.
 - Funds flow statement.

Q-3. Prepare Fund Flow statement from the following data:

Assets	31-12-14	31-12-15
Cash	2,000	2,500
Accounts receivables	2,400	2,700
Inventories	3,100	3,200
Other assets	800	700
Fixed assets	5,000	5,800
	13,300	14,900
Liabilities:		
Accumulated depreciation	2,100	2,500
Account payable	2,000	2,100
Long term debt	1,400	1,300
Equity capital	5,000	5,300
Retained earnings	2,800	3,700
	13,300	14,900

Note:

1. Fixed assets costing ₹ 1,200 were purchased for cash.
2. Fixed assets (original cost ₹ 400 accumulated depreciation ₹ 150) were sold for ₹ 200.
3. Depreciation for the year 2015 amounted to ₹ 550 and duly debited to Profit and Loss Account
4. Dividend paid amount to ₹ 300 in 2015.
5. Reported income for 2015 was ₹ 1,200.

Q-4. The following is the Balance Sheet of AZ Co. Ltd., for two years.

Balance Sheet		
Liabilities	2014	2015
Share Capital	12,00,000	16,00,000
Debentures	4,00,000	6,00,000
Profit and Loss Account	2,50,000	5,00,000
Creditors	2,30,000	1,80,000
Provision for:		
a) Bad and doubtful debts	12,000	6,000
b) Depreciation on Land and Building	40,000	48,000
c) Depreciation on Plant and Machinery	60,000	70,000
	21,92,000	30,04,000
Assets:		
Plant and Machinery (at cost)	8,00,000	12,90,000
Land and Building (at cost)	6,00,000	8,00,000
Stock	6,00,000	7,00,000
Bank	40,000	80,000
Preliminary Expenses	14,000	12,000
Debtors	1,38,000	1,22,000
	21,92,000	30,04,000

Additional Information:

- During the year a part of the machinery costing ₹ 1,40,000 (accumulated depreciation thereon ₹ 4,000) was sold for ₹ 12,000
- Dividend of ₹ 1,00,000 was paid during the year.

Ascertain:

- Change in working capital for 2015
- Fund flow statement in 2015.

Q-5. From the following balance sheets of X Ltd. on 31st December 2014 and 2015, you are required to prepare:

- A schedule of changes in working capital.
- A funds flow statement.

Liabilities	2014	2015	Assets	2014	2015
	₹	₹		₹	₹
Share Capital	1,00,000	1,00,000	Goodwill	12,000	12,000
General Reserve	14,000	18,000	Building	40,000	36,000
Profit & Loss A/c	16,000	13,000	Plant	37,000	36,000
Sundry Creditors	8,000	5,400	Investments	10,000	11,000
Bills Payable	1,200	800	Stock	30,000	23,400
Provision for taxation	16,000	18,000	Bills Receivable	2,000	3,200
Provision for doubtful debts	400	600	Debtors	18,000	19,000
			Cash at Bank	6,600	15,200
	1,55,600	1,55,800		1,55,600	1,55,800

The following additional information has also been given:

- Depreciation charged on plant was ₹ 4,000 and on building ₹ 4,000.
- Provision for Taxation of ₹ 19,000 was made during the year 2014.
- Interim dividend of ₹ 8,000 was paid during the year 2014.

19.9 KEY TO CHECK YOUR ANSWER

- (C) 1. True, 2. True, 3. True, 4. True, 5. True
- (D) 1. (a), 2. (c), 3. (d)
- (E) 1. Funds flow statement, 2. Source of fund, 3. Adjusted profit and loss account, 4. Proposed dividend, 5. Provision for Taxation

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5. Maheshwari, S.N. “Introduction to Accounting”, Sultan Chand and Sons, Delhi.

19.12 TERMINAL QUESTIONS

1. What are the steps involved in the preparation of fund flow statement?

2. How do you treat “Proposed dividend” while preparation of fund flow statement?

UNIT 20

STATEMENT OF CHANGES IN FINANCIAL POSITION-II: CASH FLOW STATEMENT

Structure:

- 20.1 Introduction
- 20.2 Concept of Cash Flow Statement
- 20.3 Cash Flow Statement, AS-3 (Accounting Standard - 3)
- 20.4 Classifications of Cash Flow
- 20.5 Procedure of Preparing a Cash Flow Statement
- 20.6 Limitations of Cash Flow Statement
- 20.7 Practical Problems
- 20.8 Summary
- 20.9 Glossary
- 20.10 Check Your Progress (Multiple Choice/Objective Type Questions)
- 20.11 Key to Check Your Answer
- 20.12 Bibliography
- 20.13 Suggested Readings
- 20.14 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Cash Flow Statement

NOTES

20.1 INTRODUCTION

Cash flow statement is the financial statement that measures the cash generated or used by a company in a given period. A cash flow statement breaks out a company's cash sources and uses for the period into three categories: cash flow from operating activities, cash flow from investing activities, and cash flow from financing activities. It is important to note that cash flow is not the same as net income, which includes transactions that did not involve actual transfers of money depreciation is common example of a noncash expense that is included in net income calculations but not in cash flow calculations.

The concept of funds, we have learn the term 'fund' has been interpreted by various experts differently. A study of flow of funds interpreting funds as equivalent to cash, is termed "Cash Flow Analysis". Cash Flow Analysis involves the preparation of Cash Flow Statement.

A Cash Flow Statement is a statement which shows the change in cash position from one period to other. This statement helps in short term financial planning.

Cash Flow analysis gives importance to the inflow and outflow of cash rather than dealing with the working capital.

20.2 CONCEPT OF CASH FLOW STATEMENT

Definitions**Cash**

Cash comprises cash on hand and demand deposits with banks.

Cash Equivalents

These are short term, highly liquid investments which can be readily converted into cash without a decline in their value. Examples of cash equivalents are treasury bill, commercial paper, short term deposits, marketable securities etc.

Cash Flows

Cash flows are inflows and outflows of cash and cash equivalents. When there is a change in any transaction, there will be flow of cash. If the effect of transaction results in the increase of cash and its equivalents, it is called an inflow (i.e. source). If it results in the decrease of cash, it is called outflow.

Meaing of Cash Flow Statement

In Cash Flow Statement the term "fund" is used to mean cash only and does not include even the most liquid current assets. A cash flow statement shows the impact

of transactions on cash position of the firm and includes all transactions having a direct impact upon cash. It explain the changes in cash position between two periods.

NOTES

Note: According to AS 3 (revised) all manufacturing and finance companies which are listed in a stock exchange or all commercial or industrial and business enterprises whose sales are more than 50 crores per year, must prepare and publish CFS by indirect method. This is made compulsory from April 1, 2001 onwards.

20.3 CASH FLOW STATEMENT, AS-3 (ACCOUNTING STANDARD - 3)

AS - 3 Change in Financial Position which was issued in June 1981.

AS - 3 (revised): In **March 1997** issued **Cash Flow Statement** by the Institute of Chartered Accountants of India.

Accounting Standard - 3 has become mandatory w.e.f 1st April 2001 for the following enterprises:

- (a) Those equity or debt securities are listed or going to be listed by the recognised Stock Exchange of India.
- (b) Others like business, commercial and industrial reporting enterprises whose turnover more than Rupees 50 Crores in accounting period.

The Company Act 1956, Under Section 211, the companies in respect of which AS - 3 is mandatory are needed to agree with AS - 3. Securities and Exchange Board of India requires that all companies should submit a cash flow statement along with other financial statement of the company, which are prepared as per AS - 3 issued by the institute of Chartered Accountant of India.

Uses or Advantages of Cash Flow Statement

The chief advantages of cash flow statement are as follows:

(i) Planning and Co-ordination of Financial Operations

Cash flow statement is useful in evaluating financial policies and current cash position. Since cash is the basis for carrying operations, the cash flow statement will enable the management to plan and co-ordinate the financial operations properly. It is so because cash flow statement is prepared on an estimated basis for the next accounting period. The management comes to know how much cash is needed in the future and what time and how can be arranged, how much initially and how much from outside? Cash flow statement is especially useful in preparing cash budgets.

NOTES

(ii) A Control Device

Cash flow statement is also a control device for the management. A comparison of cash flow statement of previous year with the budget for the year would indicate to what extent the resources of the enterprise were raised and applied according to the plan. Thus, a comparison of original forecast with actual result may highlight trends of movement that might otherwise go undetected.

(iii) Useful to Internal Financial Management

Since it gives a clear picture of cash inflow from operations it is therefore, very useful to internal financial management in considering the possibility of retiring long-term debts, in planning replacement of plant facilities or in formulating dividend policies.

(iv) Profit and Cash Position

It enables the management to account for situation when business has earned huge profits yet run without money or when it has suffered a loss and still has plenty of money at the bank.

(v) Short-term Financial Decision

Cash flow statement helps the management in taking short-term financial decisions. Suppose, if firm wants to know its state of solvency after one month from to-date, it is possible only from the cash flow analysis and not from fund flow statement. Shorter the period, greater is the importance of cash flow statement.

Difference between Fund Flow Statement and Cash Flow Statement

<i>Fund Flow Statement</i>	<i>Cash Flow Statement</i>
1. Fund here means working capital.	1. Fund refers to actual cash in cash flow analysis.
2. It is concerned with all items constituting funds.	2. It deals with cash transaction only.
3. It shows the causes for changes in working capital.	3. It shows the causes for the change in cash.
4. Fund flow statement is for a long-term planning.	4. Cash flow analysis is a tool for short term financial planning.
5. There are no opening or closing Balances in the fund flow statement	5. Cash Flow Statement starts with the operating cash balance and ends with closing cash balances.
6. Schedule of changes in working capital is prepared	6. Calculations of cash from operations is prepared.

20.4 CLASSIFICATIONS OF CASH FLOW

NOTES

1. Cash Flow from Operating Activities
2. Cash Flow from Investing Activities
3. Cash Flow from Financing Activities

1. Cash Flow from Operating Activities

Operating activities are the main revenue producing activities of the enterprise. These involve producing goods and services and selling them. Cash flows from operating activities generally result from the transactions and events that enter into the determination of net profit or loss. In short, operating activities are activities relating to operation.

Examples of cash flow from operating activities

Cash Inflows:

- (a) Cash sales.
- (b) Cash receipts from debtors for sale of goods or rendering services.
- (c) Cash receipts from royalties, fees, commission and other revenue.

Cash Outflows:

- (a) Cash purchases.
- (b) Cash payments to suppliers of goods and services.
- (c) Payments for operating expenses (wages, salaries, rent, insurance etc.)
- (d) Cash payment to govt. for taxes and duties.

There are some transactions such as sale of an item of plant etc. that may result in profit or loss. These are usually taken in the determination of net profit or loss. However, these are cash flows from investing activities.

2. Cash Flow from Investing Activities

Investing activities include purchase and sale of fixed assets, securities (share, debentures) etc. Cash flow from investing activities discloses the expenditures incurred for resources intended to generate future income and cash flows.

Examples of Cash flow from investing activities

Cash Inflows:

- (a) Cash receipts from sale of fixed assets and intangible assets.
- (b) Cash receipts from sale of securities such as shares, debentures etc.
- (c) Receipt of interest and dividend on investment.

NOTES

Cash Outflows:

- (a) Cash payment for purchase of fixed assets and intangible assets (investment in assets).
- (b) Cash payment for purchase of securities (investment in securities).
- (c) Loans given to borrowers.

It may be noted that the cash receipt on sale of fixed and intangible assets are taken as cash flows from investing activities. Thus, profit or loss on sale is automatically adjusted here. That is why profit or loss on sale of fixed assets and intangible assets is not taken as cash flows from operating activities.

3. Cash Flow from Financing Activities

Financing activities are those activities which result in changes in size and composition of owners' capital (or shareholders' funds) and borrowing of the enterprise. These include raising funds from owners, borrowing from creditors and repayment/redemption.

Examples of Cash flows from financing activities

Cash Inflows:

- (a) Cash proceeds from issue of shares.
- (b) Cash proceeds from issue of debentures, bond etc.
- (c) Short term and long term loans or borrowings.

Cash Outflows:

- (a) Redemption of preference shares.
- (b) Redemption of debentures, bonds etc.
- (c) Repayment of loans (short term and long term).
- (d) Payment of dividend.
- (e) Payment of interest on debentures and loans.

It may be noted that interest and dividend on investment (inflow) are cash flow from investing activities, while payment of interest and dividend on capital and borrowings are cash flows (outflow) from financing activities.

20.5 PROCEDURE OF PREPARING A CASH FLOW STATEMENT

Cash flow statement is prepared with the help of financial statements and additional information. The preparation of cash flow statement involves the following steps:

1. Calculate the net increase or decrease in cash and cash equivalents by comparing these accounts given in the comparative balance sheets.

NOTES

2. Calculate the net cash flow provided/ used in operating activities. This is done by analyzing the P/L A/c, B/S and additional information. There are two methods of calculating cash flows from operation. Direct method and indirect method.
3. Calculate the net cash flow from investing activities.
4. Calculate the net cash flow from financing activities.
5. Prepare a cash flow statement showing the net cash flow from (or used in) operating, investing and financing activities separately.
6. Make an aggregate of net cash flows from the three activities and ensure that the total net cash flow is equal to the net increase or decrease in cash and cash equivalent as calculated in step 1.
7. Report significant non-cash transactions that do not involve cash or cash equivalents in a separate schedule to the CFS.

Note: The sum of cash flow from all the activities taken together, along with the opening cash and cash equivalents shall be equal to the closing cash and cash equivalents.

Calculation of Cash Flow from Operating Activities

Cash from operation means the cash generated in the business as a result of producing goods and services. It can be ascertained either by direct method or by indirect method.

Direct Method

Under the direct method major classes of gross cash receipts (inflows) and gross cash payments (outflows) are disclosed. In this method, cash receipts from operating revenues and cash payments for operating expenses are calculated to arrive at cash flows from operating activities. The difference between the cash receipts and the cash payments is the net cash flow from (or used in) operating activities. The information about major classes of gross cash receipts and gross cash payments may be obtained either:

- (i) From the accounting records of the enterprise, or
- (ii) By adjusting sales, cost of sales and other items in the P/L a/c for:
- (iii) Changes during the period in inventories and operating receivables and payables.
- (iv) Other non-cash items and
- (v) Other items for which the cash effects are investing or financial cash flows.

Form of Cash Flow Statement

Cash Flow Statement contains sources of cash (cash inflows) and uses or applications of cash (cash outflows). A widely used format of CFS is given as follows:

Cash Flow Statement (Direct Method)

For the year ended

Cash Flows from Operating Activities:

(A) Operating Cash Receipts:

Cash Sales		xxx
Cash received from debtors	xxx	
Commission, fees received	xxx	
Royalties received	xxx	

(B) Operating Cash Payment:

Cash purchases	xxx	
Cash paid to creditors	xxx	
Cash operating expenses	xxx	
Taxes and duties paid	xxx	xxx

Net Cash Flow from Operating Activities (A – B) **xxx**

Cash Flow from Investing Activities:

Sale of fixed asset	xxx	
Sale of investment	xxx	
Interest received	xxx	
Dividend received	xxx	
Purchase of fixed assets	xxx	
Purchase of investments	xxx	

Net Cash from (or used in) Investing Activities **xxx**

Cash Flow from Financing Activities:

Proceeds from issue of shares	xxx	
Proceeds from debentures and long term borrowings	xxx	
Repayment of long term borrowings	xxx	
Interest paid	xxx	
Dividend paid	xxx	

Net Cash from (or used in) Financing Activities **xxx**

Net Increase/Decrease in cash and cash equivalents xxx

Add: Cash and Equivalents at beginning xxx

Cash and Cash Equivalents at closing xxx

Note: Figures in bracket indicate the cash outflows (i.e. negative figures).

The following amounts are required to be calculated:

1. Cash received from debtors: Cash received from debtors can be ascertained by preparing Total Debtors a/c.

Total Debtors A/c

	₹		₹
To Balance b/d	xxx	By Cash received (bal. fig)	xxx
To Credit Sales	xxx	By B/R received	xxx
		By Discount Allowed	xxx
		By Bad debts	xxx
		By Sales returns	xxx
		By Balance c/d	xxx
	xxx		xxx

Note: If bills receivable received from debtors is not given, it can be ascertained by preparing bills receivable A/c

Bills Receivable A/c

	₹		₹
To Balance b/d	xxx	By Cash	xxx
To Debtors (bal. fig.)	xxx	By Bank (discounted)	xxx
		By Discount on B/R	xxx
		By Balance c/d	xxx
	xxx		xxx

2. Cash paid to creditors: Cash paid to creditors can be ascertained by preparing Total Creditors A/c.

Total Creditors A/c

	₹		₹
To Cash (fig.)	xxx	By Balance b/d	xxx
To purchase return	xxx	By Credit Purchase	xxx
To Discount received	xxx		
To B/P issued	xxx		
To Balance c/d	xxx		
	xxx		xxx

Bills payable issued to creditors can be ascertained by preparing bills payable A/c.

Bills Payable A/c

	₹		₹
To Cash A/c	xxx	By Balance b/d	xxx
To Balance c/d	xxx	By Creditor A/c (bal. fig.)	xxx
	xxx		xxx

If purchases are not given (cost of sale is given), then purchases may be ascertained as follows:

Purchases = Cost of Sales + Closing Stock – Opening Stock

3. Cash Operating Expenses: To find out cash operating expenses, adjustments for outstanding and prepaid should be made. Cash operating expenses are ascertained as follows:

	₹	₹
Expenses as given in P/L A/c	xxx	
Add: Outstanding at the beginning	xxx	
Prepaid in the end		xxx
 Less: Outstanding at the end	xxx	
Prepaid in the beginning	xxx	xxx
Cash paid for Expenses		xxx

Cash Flow Statement (Indirect Method)

Cash flow from Operating Activities:	₹	₹
Net Profit before tax		xxx
Add: Non-cash and non operating Items:		
Depreciation	xxx	
Preliminary expenses written off	xxx	
Discount on issue of shares and debentures written off	xxx	
Goodwill patents etc. written off	xxx	
Loss on sale of fixed assets	xxx	
Provision for doubtful debts etc.	xxx	
Tax provision	xxx	xxx
Less: Items to be deducted		xxx
Rent received	xxx	
Interest received	xxx	
Dividend received	xxx	
Profit on sale of fixed asset, investment	xxx	
Operating profit before Working Capital Changes		xxx
Add: Decrease in Current Assets (Individually)		xxx
Increase in Current Liabilities (Individually)		xxx
Less: Increase in Current Assets (Individually)		xxx
Decrease in Current Liabilities (Individually)		xxx

Cash generated from operation		xxx
		xxx
Less: Income tax paid	xxx	
Adjustment for Extra ordinary items (+/-)	xxx	
Net Cash from (or used in) Operating Activities	xxx	
Cash from Investing Activities (same as under Direct Method)	xxx	
Cash from Financing Activities (same as under Direct Method)	xxx	
Net Increase/ Decrease in cash and Cash Equivalents	xxx	
Cash and Cash Equivalents at beginning	xxx	xxx
Cash and Cash Equivalents at the end		xxx

Calculation Cash From Operation or Operating Activities

Cash from Operation refers to the cash generated from trading operations in a given period. There are following methods of determining cash from operation.

- (i) Cash Sales Method
- (ii) Adjustment of Current Account to Fund From Operations
- (iii) Net Profit Method (As-3)

2.6 LIMITATIONS OF CASH FLOW STATEMENT

Some of the limitations of the useful of cash flow statement as a tool of financial analysis are:

- (a) As the enterprise shifts from strictly cash basis, enters into credit transactions as well takes into account prepared and accrued items, the net income no doubt would generally represent an increase in working capital, yet equating net income to cash flow for such enterprise would be inaccurate and misleading since a number of non cash items affect the net income of the firm.
- (b) Most of the business have in addition to current assets, a number of fixed assets. These assets involve cash payment in a years past and charges against operating income of current year depreciation entries. Thus, net income moves even further away from being a net cash flow.
- (c) The cash balance too easily influenced by postponing purchase and other payments.

The above discussion makes it clear that cash flow is the part of the funds flow while income is one of the various sources of funds flow. The cash flow statement can not replace the final statements of account viz., balance sheet and income statement but it is certainly very useful supplementary statement.

Cash Sales Method

Format of Computation of Cash From Operations

<i>Particulars</i>	<i>₹</i>	<i>₹</i>
Sales	xxx	
Less: Increase in account receivable	xxx	
Cash sales		xxx
Less: Purchase	xxx	
Less: Increase accounts	xxx	xxx

Cash paid in payable creditors	xxx
Cash operating expenses (after adjusting accruals and prepayments)	xxx
Cash from Operations	xxx

20.7 PRACTICAL PROBLEMS

Illustration - 1

From the following, calculate cash from Operations:

<i>Particulars</i>	₹
Total Sales	6,00,000
Total Purchases	4,50,000
Debtors at the beginning of the year	80,000
Debtors at the end of the year	2,00,000
Creditors for supplies at the beginning of the year	50,000
Creditors for supplies at the end of the year	1,20,000
Operating Expenses	80,000

Solution:

Statement showing Cash From Operations

<i>Particulars</i>	₹	₹
Cash Sales		
Total Sales	6,00,000	
<i>Less:</i> Increase in Debtors (Credit sales) (2,00,000 - 80,000)	1,20,000	4,80,000
<i>Less:</i> Cash Purchases		
Total Purchases	4,50,000	
<i>Less:</i> Increase in Creditors (Credit purchase) (1,20,000 - 50,000)	70,000	3,80,000
		1,00,000
<i>Less:</i> Operating Expenses (paid in cash)		80,000
Cash from Operations		20,000

Adjustment of Current Account to Fund From Operations

Format of Computation of Cash From Operations

<i>Particulars</i>	₹	₹
Funds from Operations		xxx
<i>Add:</i> Decrease in current assets	xxx	
Increase in current liabilities	xxx	xxx
		xxx
<i>Less:</i> Increase in current assets	xxx	
Decrease in current liabilities	xxx	
		xxx
Cash from Operations		xxx

Illustration - 2

Calculate cash from operations from figures given below:

<i>Particulars</i>	<i>30th Sept. 2014</i>	<i>30th Sept. 2015</i>
Sundry Creditors	1,10,000	1,12,000
Inventories	1,15,000	1,20,000
Sundry Debtors 1,27,000	1,30,000	
Bills Receivable	52,000	51,000
Short-term		
Marketable Securities	44,000	43,000
Bills Payable	28,000	24,000
Prepaid Expenses	12,000	11,000
Funds from operation is ₹ 10,000.		

Solution:**Computation of Cash from Operations**

<i>Particulars</i>	<i>₹</i>	<i>₹</i>
Funds from Operation		10,000
Add:		
(1) Decrease in Current Assets:		
Bills Receivable	1,000	
Short term Marketable Securities	1,000	
Prepaid Expenses	1,000	3,000
(2) Increase in Current Liabilities		
Sundry Creditors	2,000	5,000
Less:		15,000
(1) Decrease in Current Liabilities		
Bills Payable	4,000	
(2) Increase in Current Assets		
Inventories	5,000	
Sundry Debtors	3,000	8,000
Cash from Operations		3,000

Illustration - 3

Following is the Trading and Profit and Loss Account for the year ended 31st March, 2015

<i>Dr.</i>		<i>Cr.</i>
<i>Particulars</i>	<i>₹ Particulars</i>	<i>₹</i>
To Purchases	1,27,600 By Sales	1,91,000
To Wages	31,900	
To Gross Profit c/d	31,500	
	1,91,000	1,91,000
To Salaries	6,600 By Gross Profit b/d	31,500
To Rent	3,190 By Profit on Sale of Building	

To Depreciation	9,570	(Book Value 40,000)	25,000
To Loss on sale of Investments	3,200		
To Goodwill written off	3,940		
To Net Profit	30,000		
	56,500		56,500

Calculate Cash from Operations.

Solution:

Statement showing Cash from Operations

<i>Particulars</i>	₹	₹
Net Profit as per P&L A/c		30,000
Add: Non Cash and Non Operations expenses		
Depreciation	9,570	
Loss on sale of Investment	3,200	
Goodwill written off	3,940	16,710
		46,710
Less: Non Cash and Non Operating Income		
Profit on sale Buildings		25,000
Cash from Operations		21,710

Illustration - 4

Calculate cash operating profit from the following:

<i>Details</i>	<i>2015</i>	<i>2016</i>
Retained Earnings	1,40,000	2,00,000
Outstanding expenses	2,000	6,000
Prepaid expenses	4,000	8,000
Depreciation	16,000	
Dividend paid		20,000
General expenses		15,500

Solution:

Statement showing Calculation of Cash from Operations

<i>Particulars</i>	₹	₹
Closing Balance or Retained Earnings		2,00,000
Add: i) Non Operating and Non Cash Items:		
a) Depreciation	16,000	
b) Dividend	20,000	36,000
ii) Outstanding Expenses at the end of the year		6,000
iii) Prepaid Expenses at the beginning of the year		4,000
		2,46,000
Less: Closing Balance of Retained Earnings		1,40,000
Cash from Operation		1,06,000

Illustration - 5

Compute cash from operations from the following information Given: Profit for the year 2014 is ₹ 10,000 after providing depreciation of ₹ 2,000.

	31-12-2014	31-12-2015
Sundry Debtors	10,000	12,000
Provision for Bad Debts	1,000	1,200
Bills Receivable	4,000	3,000
Bills payable	5,000	6,000
Sundry Creditors	8,000	9,000
Stock	5,000	8,000
Short term investments	10,000	12,000
O/S Expenses	1,000	1,500
Prepaid Expenses	2,000	1,000

Solution:**Computation of Cash from Operations**

Particulars	₹	₹
Funds from Operations		10,000.
Add: Decrease in Current Assets		
Bills Receivable	1,000	
Prepaid Expenses	1,000	2,000
Increase in Current Liabilities		
Provision for Bad Debts	200	
Bills payable	1,000	
Sundry Creditors	1,000	
Outstanding expenses	500	2,700
		14,700
Less: Increase in Current Assets		
Sundry Debtors	2,000	
Stock	3,000	
Short-term investments	2,000	7,000
Decrease in Current Liabilities		
Cash from Operations		7,700

Illustration - 6

From the following details, prepare Land and Buildings A/c and explain the treatment of various items in the preparation of Cash Flow Statement.

Balance in Land and Buildings Account as at 1-4-2014 ₹ 5,60,000 and as at 31-3-2015 ₹ 8,04,000

Purchase of Land and Buildings during the year 2014-15 ₹ 3,00,000.

There was no sale of any land or buildings during the year.

Solution:**Land and Buildings A/c**

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Balance b/d	5,60,000	By Cash (sales) (B.F.)	56,000
To Cash (purchase)	3,00,000	By Balance c/d	8,04,000
	8,60,000		8,60,000

The treatment of various items in the preparation of cash flow statement are:

- Purchase of Land and Buildings will come under cash from investing activities as cash outflows the purchase of land and buildings for ₹ 3,00,000 will be minus
- Sale of land and Buildings will come under cash from investing activities, as cash inflows the sale of land and building for ₹ 56,000 will be Added.

Illustration - 7

Calculate the Cash from Operations from the following information.

<i>Particulars</i>	<i>2014</i>	<i>2015</i>
Debtors	50,000	47,000
Bills receivable	10,000	12,500
Creditors	20,000	25,000
Bills payable	8,000	6,000
Outstanding expenses	1,000	1,200
Prepaid expenses	800	700
Accrued income	600	750
Income received in advance	300	250
Profit during the year	-	1,30,000

Solution:**Computation of Cash from operation**

<i>Particulars</i>	<i>Amount</i>	<i>Amount</i>
Profit made during the year		1,30,000
Add: Decrease in current assets:		
Debtors	3,000	
Prepaid expenses	100	
Increase in current liabilities		
creditors	5,000	
Outstanding Expenses	200	8,300

		1,38,300
Less: Increase in current assets:		
Bills receivable	2,500	
Accrued income	150	
Decrease in current liabilities:		
Bills payable	2,000	
Income received in advance	50	4,700
Cash from operations		1,33,600

Illustration - 8

Calculate the cash from operations from the following figures.

(a) Profit for the year 2015 is a sum of ₹ 10,000 after providing for depreciation of ₹ 2,000

(b) The current assets of the business for the year 31.12.14 and 15 were as follows:

<i>Particulars</i>	<i>31.12.14</i>	<i>31.12.15</i>
Sundry Debtors	10,000	12,000
Provision for doubtful debts	1,000	1,200
Bills Receivables	4,000	3,000
Bills Payable	5,000	6,000
Sundry Creditors	8,000	9,000
Inventories	5,000	8,000
Short Term investments	10,000	12,000
Outstanding Expnses	1,000	1,500
Prepaid expenses	2,000	1,000
Accrued income	3,000	4,000
Income received in advances	2,000	1,000

Solution:

Note: Funds from operations: Net profit for the year + Depreciation

$$= 10,000 + 2,000 = 12,000$$

Computation of Cash from operation

<i>Particulars</i>	<i>Amount</i>	<i>Amount</i>
Funds from operation		12,000
Add: Decrease in current assets		
Bills receivable	1,000	
Prepaid expenses	1,000	
Add: Increase in current liabilities:		
Provision for doubtful debts	200	
Bills payable	1,000	

Sundry Creditors	1,000	
Outstanding expenses	500	4,700
		16,700
<i>Less: Increase in current assets:</i>		
Debtors	2,000	
Inventories	3,000	
Short term investments	2,000	
Accrued income	1,000	
<i>Decrease in current liabilities:</i>		
Income received in advance	1,000	9,000
Cash from operations		7,700

Illustration - 9

Calculate cash flows from operating activities under indirect method from the following income statement.

Income Statement

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Materials used	1,50,000	By Sales (Cash)	3,15,000
To Wages paid	48,000	By Commission received	21,000
To Wages outstanding	10,000	By Commission due	24,000
To Salaries paid	45,000		
To Salaries outstanding	11,000		
To Loss on sale of machine	9,000		
To Net Profit	87,000		
	3,60,000		3,60,000

Solution:**Calculation of Cash from operating activities**

<i>Particulars</i>	<i>Amount</i>	<i>Amount</i>
Net Profit		87,000
<i>Add: Non-cash and non-operating items debited to Profit & Loss A/c</i>		
(1) Wages outstanding	10,000	
(2) Salaries outstanding	11,000	
(3) Loss on sale of machine	9,000	30,000
		1,17,000
<i>Less: Non-cash and non-operating items credited</i>		

to Profit & Loss A/c		
(1) Commission received	21,000	
(2) Commission due	24,000	45,000
Cash from operations		72,000

Illustration - 10

From the following Profit and Loss Account, you are requested to compute cash from operations.

Profit and Loss Account for the Year Ended 31-12-2016

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Salaries	20,000	By Gross profit	1,00,000
To Rent	4,000	By Profit on sale of land	20,000
To Depreciation	8,000	By Income tax refund	12,000
To Loss on sale of machinery	4,000		
To Goodwill written off	16,000		
To Dividend proposed	20,000		
To Tax provision	20,000		
To Net profit	40,000		
	1,32,000		1,32,000

Solution:**Statement showing the Cash from operation**

<i>Particulars</i>	<i>₹</i>	<i>₹</i>
Net Profit for the year		40,000
<i>Add:</i> Non-cash items debited to P/L A/c		
Depreciation	8,000	
Loss on sales of machinery	4,000	
Goodwill written off	16,000	
Dividend proposed	20,000	
Tax provision	20,000	68,000
		1,08,000
<i>Less:</i> Non-operating items credited to P/L A/c		
Profit on sale of land	20,000	
Recover Tax refund	12,000	32,000
Cash from operations		76,000

Illustration - 11

Following are the summarised Balance Sheets of ESS GEE Ltd. as on December 31, 2014 and 2015.

<i>Liabilities</i>	<i>2014</i>	<i>2015</i>
Share Capital	1,00,000	1,30,000
General Reserve	25,000	30,000
Profit and Loss A/c	15,200	15,400
Bank Loan (long term)	35,000	-
Sundry Creditors	75,000	67,500
Provision for Tax	15,000	17,500
	2,65,200	2,60,400
<i>Assets:</i>		
Land and Buildings	1,00,000	95,000
Machinery	75,000	84,500
Stock	50,000	37,000
Sundry Debtors	40,000	32,100
Cash	200	300
Bank	-	4,000
Goodwill	-	7,500
	2,65,200	2,60,400

Additional information:

- Dividend of ₹ 11,500 was paid.
- Assets of another company were purchased for a consideration of ₹ 30,000 payable in shares. The following assets were purchased: Stock ₹ 10,000, Machinery ₹ 12,500
- Machinery was further purchased for ₹ 4,000
- Depreciation written off on Machinery ₹ 6,000
- Income tax provided during the year ₹ 16,500
- Loss on sale of machine ₹ 100 was written off to General Reserve.

You are required to prepare a Cash Flow Statement under indirect method (As per accounting standard)

Solution:**Share Capital Account**

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Balance c/d	1,30,000	By Balance b/d	1,00,000
		By Machinery A/c	12,500
		By Stock A/c	10,000
		By Goodwill A/c (b/f)	7,500
	1,30,000		1,30,000

Land and Buildings Account

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Balance b/d	1,00,000	By Depreciation - b/f	5,000
		By Balance c/d	95,000
	1,00,000		1,00,000

Machinery Account

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Balance b/d	75,000	By Depreciation	6,000
To Share Capital A/c (Purchase)	12,500	By Gen. Reserve (loss on sale)	100
To Cash A/c (Purchase)	4,000	By Cash A/c -Sale (b/f)	900
		By Balance c/d	84,500
	91,500		91,500

General Reserve Account

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Machinery A/c (loss on sale)	100	By Balance b/d	25,000
To Balance c/d	30,000	By P&L A/c - B/f	5,100
	30,100		30,100

Provision for Tax Account

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Income tax paid - b/f	14,000	By Balance b/d	15,000
To Balance c/d	17,500	By P&L A/c (provision made)	16,500
	31,500		31,500

Goodwill Account

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Balance b/d	-	By Balance c/d	7,500
To Share Capital a/c	7,500		
	7,500		7,500

Cash Flow Statement for the year ended 31st December 2015

<i>Particulars</i>	₹	₹
Cash flows from Operating Activities:		
Increase in the balance of profit and loss a/c	200	
Adjustments for non cash and operating items:		
Dividend paid	11,500	
Depreciation on land and buildings	5,000	

NOTES	Depreciation on machinery	6,000
	Transfer to General Reserve	5,100
	Provision for Tax	16,500
	Purchase of stock against issue of shares (being non cash)	10,000
	Operating profit before working capital changes	54,300
	Adjustment for changes in current operating assets and liabilities	
	Decrease in stock	13,000
	Decrease in Debtors	7,900
	Decrease in Sundry Creditors	(7,500)
	Cash generated from operations	67,700
	Less: Income tax paid	14,000
	Net cash from operating activities	53,700
	Cash Flow from Investing activities:	
	Purchase of Machinery (other than for issue of shares)	(4,000)
	Sale of Machinery	900
	Net cash used in investing activities	(3,100)
	Cash flows from Financing Activities:	
	Payment of Bank loans	(35,000)
	Dividend paid	(11,500)
	Net Cash used in financing activities	(46,500)
	Net increase in cash and cash equivalents	4,100
	Cash and cash equivalents at the beginning of the year	200
	Cash and cash equivalents at the end of year (300 + 4,000)	4,300

Illustration - 12

Given below are the balance sheets of RK Ltd., as on 31-03-2013 and 31-03-2014

	2013	2014
Liabilities		
Equity share capital	2,00,000	3,00,000
Long term loan	1,00,000	1,00,000
Creditors	1,50,000	2,00,000
Bills payable	2,00,000	3,00,000
Retained earnings	1,80,000	2,00,000
Assets	8,30,000	11,00,000

Cash	60,000	30,000	NOTES
Stock	1,20,000	1,90,000	
Debtors	80,000	1,20,000	
Goodwill	2,00,000	1,50,000	
Plant and machinery	1,00,000	2,00,000	
Land and building	2,00,000	4,00,000	
Furniture	70,000	10,000	
	8,30,000	11,00,000	

Additional Information:

- Operating expenses include depreciation ₹ 80,000 and a mortization of Goodwill ₹ 50,000.
- A machine has been sold for ₹ 15,000. The cost reduce of the machine was ₹ 40,000 and ₹ 20,000 depreciation is charged on the same in 2014.
- Plant and machinery was purchased for cash ₹ 1,40,000 and land and buildings for ₹ 2,60,000.
- Furniture was sold for cash ₹ 60,000.
- Equity shares were issued for cash ₹ 1,00,000.
- ₹ 80,000 dividend was paid in cash.
- Net profit for the year ending 31-03-2014 was ₹ 1,00,000.

Prepare statement of cash flow as per As - 3 indirect method for the year ending 31-03-2014.

Solution:**Plant and Machinery Account**

	₹		₹
To Balance b/d	1,00,000	By Cash (Sale)	15,000
To Purchase of Machine (B/F)	1,40,000	By Loss on Sale	5,000
		By Depreciation	20,000
		By Balance c/d	2,00,000
	2,40,000		2,40,000

Land and Building A/c

	₹		₹
To Balance b/d	2,00,000	By Depreciation (b/f)	60,000
To Purchase A/c	2,60,000	By Balance c/d	4,00,000
	4,60,000		4,60,000

Furniture A/c			
	₹		₹
To Balance b/d	70,000	By Cash	60,000
		By Balance c/d	10,000
	70,000		70,000

Cash flow Statement for the year ending 31-03-2014

	₹	₹
1. Cash flow from operating activities:		
Net profit for the year after dividend and tax		1,00,000
<i>Add:</i>		
Depreciation (Plant+Building)	80,000	
Loss on sale of plant	5,000	
Goodwill written off	50,000	
Increase in creditors	50,000	
Increase in Bills payable	1,00,000	2,85,000
		3,85,000
Increase in Stock	(70,000)	
Increase in Debtors	(40,000)	1,10,000
Net Cash inflows from operations activities		2,75,000
2. Cash flow from investing activities:		
Purchase of plant and Machinery	(1,40,000)	
Purchase of Land Building	(2,60,000)	
Sale of Machinery	15,000	
Sale of Furniture	60,000	
Net Cash outflow from investing activities		(3,25,000)
		(50,000)
3. Cash flow from financial activities		
Issue of equity capital	1,00,000	
Dividend payment	(80,000)	
Net cash flow from financial activities		20,000
Net Decrease in cash		(30,000)
Cash Balance in the beginning		60,000
Cash Balance at the end		30,000

Illustration - 13

Following are the Summarised Balance Sheets of a Company Ltd. as on
31-3-15 and 31-3-16.

	<i>31-3-15</i>	<i>31-3-16</i>
<i>Capital and Liabilities</i>		
Share Capital	5,00,000	5,00,000
General reserve	1,50,000	1,25,000
Profit & Loss A/c	76,500	76,250
Term loan	1,55,000	1,75,000
Sundry Creditors	2,31,250	2,75,000
Provision for taxation	76,250	84,250
Total	11,89,000	12,35,500
<i>Assets and Property:</i>		
Premises	4,75,000	5,00,000
Machinery	4,22,500	3,75,000
Equipments	40,500	45,000
Stock	74,000	1,00,000
Sundry Debtors	1,60,000	2,00,000
Cash	7,000	3,000
Bank	10,000	-
Goodwill	-	12,500
Total	11,89,000	12,35,500

Additional information:

- Interim dividend paid ₹ 25,000.
- Depreciation on premises is provided at 5%
- Machinery of ₹ 75,000 was acquired during the year
- Income tax provision for the year was ₹ 75,000

Prepare Cash Flow Statement in accordance with AS-3.

Solution:

Dr.	Premises Account		Cr.
<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Balance b/d	4,75,000	By Depreciation A/c (4,75,000 x 5/100)	23,750
		By Balance c/d	5,00,000
To Bank A/c (b/f)	48,750		
	5,23,750		5,23,750

Dr.		Machinery Account		Cr.
Particulars	₹	Particulars	₹	
To Balance b/d	4,22,500	By Depreciation A/c (B/F)	1,22,500	
To Bank A/c	75,000	By Balance c/d	3,75,000	
	4,97,500		4,97,500	

Dr.		Equipment Account		Cr.
Particulars	₹	Particulars	₹	
To Balance b/d	40,500			
To Bank (B/F)	4,500	By Balance c/d	45,000	
	45,000		45,000	

Dr.		Income Tax Account		Cr.
Particulars	₹	Particulars	₹	
To Bank A/c	75,000	By Balance b/d	76,250	
		By Provision A/c	83,000	
To Balance c/d	84,250			
	1,59,250		1,59,250	

Cash flow Statement as per AS - 3

(A) Operating Cash flow		
Net profit from Profit & Loss A/c		(25,250)
(Reserve + P/L)		
Add:		
(i) Depreciation (1,22,500 + 23,750)		1,46,250
(ii) In term Dividend		25,000
(iii) Income tax provision		83,000
Net flow before Adjusting (WC)		2,29,000
(a) Increase in stock	(26,000)	
(b) Sundry Debtors	(40,000)	
(c) Sundry Creditor	43,750	(22,250)
Net flow before Taxation		2,06,750
Less: Income Tax Paid		(75,000)
Net flow from operating activities		1,31,750

(B) Net flow from Investment activities

(a) Acquisition		
(i) Machinery	75,000	
(ii) Equipment	4,500	
(iii) Premises	48,750	
(iv) Goodwill	12,500	(1,40,750)
		(9,000)

(C) Cash flow from investing activities

Term loan	20,000	
Interim dividend paid	(25,000)	(5,000)
Net flow from all adjustments		(14,000)
Opening balance		
Cash	7,000	
Bank	10,000	17,000
Closing Balance		3,000

Illustration - 14

From the following balance sheet of ZYZ Company Ltd and additional information, prepare a cash flow statement for the year 2009.

Liabilities	2008	2009	Assets	2008	2009
	₹	₹		₹	₹
Share capital	70,000	80,000	P&M	62,000	66,000
Share premium	9,000	11,000	Accumulated		
Retained earnings	23,820	30,820	Depreciation		
7% Mortgage loan	-	20,000	on Plant	(37,000)	(26,200)
Creditor	6,900	6,000	Building	95,000	1,16,000
Provision for taxation	1,000	1,400	Accumulated Dep.		
Outstanding Salaries	2,000	1,400	on building	(43,000)	(45,000)
			Land	10,000	12,000
			Stock	10,220	9,620
			Debtor	8,600	7,600
			Prepaid expenses	720	800
			Cash	6,180	9,800
	1,12,720	1,50,620		1,12,720	1,50,620

Additional information:

- (i) Plant costing ₹ 16,000 (accumulated depreciation ₹ 14,800) was sold during the year for ₹ 12,000

- (ii) Building was acquired during the year at a cost of ₹ 21,000. In addition to cash payment of ₹ 1,000, a 7% mortgage, loan was raised for the future.
- (iii) Dividend of ₹ 8,000 was paid during the year.
- (iv) A sum of ₹13,900 was transferred to provision for taxation account in 2009

Solution:**(a) Cash from Operating Activities:**

Retained Earnings (30,820 – 23,820)			7,000
Add: Tax Provision		13,900	
Depreciation on machinery		4,000	
Depreciation on building		2,000	
Dividend paid		8,000	27,900
			34,900
Less: Profit on sales of machinery			10,800
Cash from operating activities			24,100
WCA (Increase of current liabilities and decrease current assets)			
Stock	600		
Debtors	1,000	1,600	
Less: (Decrease of current liabilities and increase current assets)			
Creditors	(900)		
O/S Expenses	(600)		
Prepaid expenses	(80)	1,580	20
			24,120
Less: Tax Paid			(13,500)
Net Cash for operating Activities			10,620

(b) Cash from investing activities:

Sales of machinery	12,000	
Acquisition of machinery	(20,000)	
Acquisition of building	(21,000)	
Acquisition of land	(2,000)	(31,000)
Net Cash from investing activities		(20,380)

(c) Cash from Financing activities:

Increase of share capital	10,000	
Share Premium	2,000	
7% Mortgage loan	20,000	
Dividend paid	(8,000)	

Net Cash from financing activities	24,000
	3,620
Add: Opening cash and bank Balance	6,180
Equivalent to Closing cash and Bank Balance	9,800

Working Note:

Dr. Plant & Machinery Account Cr.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Balance b/d	62,000	By Bank (Sale)	12,000
To profit on sale of plant	10,800	By Acquisition of Depreciation	14,800
To Bank A/c (b/f)	20,000	By Balance c/d	66,000
	92,800		92,800

Dr. Acquisition of Depreciation Plant & Machinery A/c Cr.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Plant & Machinery	14,800	By Balance b/d	37,000
To Balance c/d	26,200	By P/L A/c	4,000
	41,000		41,000

Dr. Land and Building Account Cr.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Balance b/d	95,000		
To Bank	21,000	By Balance c/d	1,16,000
	1,16,000		1,16,000

Dr. Acquisition of Depreciation Land & Building A/c Cr.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
		By Balance b/d	43,000
To Balance c/d	45,000	By Depreciation A/c	2,000
	45,000		45,000

Dr. Provision for Tax A/c Cr.

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Bank (b/f)	13,500	By Balance b/d	1,000
To Balance c/d	1,400	By P/L A/c	13,900
	14,900		14,900

NOTES

20.8 SUMMARY

Cash flow statement is the financial statement that measures the cash generated or used by a company in a given period.

Cash flows are inflows and outflows of cash and cash equivalents. When there is a change in any transaction, there will be flow of cash. If the effect of transaction results in the increase of cash and its equivalents, it is called an inflow (i.e. source). If it results in the decrease of cash, it is called outflow.

Cash flow statement is useful in evaluating financial policies and current cash position. Since cash is the basis for carrying operations, the cash flow statement will enable the management to plan and co-ordinate the financial operations properly. It is so because cash flow statement is prepared on an estimated basis for the next accounting period. The management comes to know how much cash is needed in the future and what time and how can be arranged, how much initially and how much from outside? Cash flow statement is especially useful in preparing cash budgets.

Operating activities are the main revenue producing activities of the enterprise. These involve producing goods and services and selling them. Cash flows from operating activities generally result from the transactions and events that enter into the determination of net profit or loss. In short, operating activities are activities relating to operation.

Investing activities include purchase and sale of fixed assets, securities (share, debentures) etc. Cash flow from investing activities discloses the expenditures incurred for resources intended to generate future income and cash flows.

Financing activities are those activities which result in changes in size and composition of owners' capital (or shareholders' funds) and borrowing of the enterprise. These include raising funds from owners, borrowing from creditors and repayment/redemption.

20.9 GLOSSARY

- (a) **Cash flow statement:** Cash flow statement is the financial statement that measures the cash generated or used by a company in a given period.
- (b) **Cash flows:** Cash flows are inflows and outflows of cash and cash equivalents. When there is a change in any transaction, there will be flow of cash. If the effect of transaction results in the increase of cash and its equivalents, it is called an inflow (i.e. source). If it results in the decrease of cash, it is called outflow.

- (c) **Operating activities:** Operating activities are the main revenue producing activities of the enterprise. These involve producing goods and services and selling them. Cash flows from operating activities generally result from the transactions and events that enter into the determination of net profit or loss. In short, operating activities are activities relating to operation.
- (d) **Investing activities:** Investing activities include purchase and sale of fixed assets, securities (share, debentures) etc. Cash flow from investing activities discloses the expenditures incurred for resources intended to generate future income and cash flows.
- (e) **Financing activities:** Financing activities are those activities which result in changes in size and composition of owners' capital (or shareholders' funds) and borrowing of the enterprise.

NOTES

20.10 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What is Cash Flow Operation?
2. What is Cash Flow Statement?
3. What are Current Assets? Give two examples.
4. What are Current Liabilities? Give two examples.
5. State any three uses of cash flow statement.

(B) Extended Answer Questions

1. What are the steps involved in the preparation of cash flow statement? Explain.
2. What are the key difference between the cash flow statement and fund flow statement?

(C) True or False

1. Fund flow statement is the financial statement that measures the cash generated or used by a company in a given period.
2. Cash flows are inflows and outflows of cash and cash equivalents.
3. Operating activities are the main revenue producing activities of the enterprise.

NOTES

4. Investing activities include purchase and sale of fixed assets, securities (share, debentures) etc. 5. Cash flow from investing activities discloses the expenditures incurred for resources intended to generate future income and cash flows.

(D) Multiple Choice Questions

1. The financial statement that measures the cash generated or used by a company in a given period is _____
 (a) Cash flow statement (b) Cash flows
 (c) Operating activities (d) All the above
2. Inflows and outflows of cash and cash equivalents are treated as:
 (a) Cash flow statement (b) Cash flows
 (c) Operating activities (d) All the above
3. What are the main revenue producing activities of the enterprise?
 (a) Cash flow statement (b) Cash flows
 (c) Operating activities (d) All the above

(E) Fill in the Blanks

1.is the financial statement that measures the cash generated or used by a company in a given period.
2. Cash flows are inflows and outflows of cash and
3.are the main revenue producing activities of the enterprise.
4.include purchase and sale of fixed assets, securities (share, debentures) etc.
5. Cash flow from investing activities discloses the expenditures incurred for resources intended to generate future income and

20.11 KEY TO CHECK YOUR ANSWER

(C) 1. False, 2. True, 3. True, 4. True, 5. True

(D) 1. (a), 2. (b), 3. (c)

(E) 1. Cash flow statement, 2. Cash equivalents, 3. Operating activities, 4. Investing activities, 5. Cash flows

Practical Problems

Q - 1. From the following particulars, calculate the cash from operations during the year 2015

	<i>31st Dec. 2015 (₹)</i>	<i>31st Dec. 2016 (₹)</i>
Debtors	5,00,000	4,70,000
Bills Receivable	1,00,000	1,25,000
Creditors	2,00,000	2,50,000
Bills payable	80,000	60,000
Outstanding expenses	10,000	12,000
Prepaid expenses	8,000	7,000
Accrued Income	6,000	7,500
Income received in advance	3,000	2,500
Profit made during the year ₹ 13,00,000		

Q - 2. From the following balances calculate Cash from operations:

	<i>31st March, 2015 ₹</i>	<i>31st March, 2016 ₹</i>
Debtors	1,00,000	94,000
Bills Receivable	20,000	25,000
Creditors	40,000	50,000
Bills Payable	16,000	12,000
Outstanding expenses	2,000	2,400
Prepaid Expenses	1,600	1,400
Accrued income	1,200	1,500
Income received in advance	600	500
Profit made during the year	-	2,60,000

Q - 3. From the following Balance Sheet as on 31st December 2015 and 31st December, 2016, you are required to prepare a Cash Flow Statement.

<i>2015</i>	<i>2016</i>	<i>2015</i>	<i>2016</i>		
Share Capital	2,00,000	3,00,000	Fixed Assets	2,00,000	3,00,000
General Reserve	60,000	80,000	Goodwill	2,00,000	80,000
Outstanding exp.	20,000	30,000	Stock	1,00,000	1,60,000
P&L A/c	1,00,000	1,60,000	Debtors	—	1,60,000
6% Debentures	1,00,000	1,20,000	Bills Receivable	20,000	40,000

Creditors	60,000	80,000	Bank	20,000	30,000
5,40,000	7,70,000		5,40,000	7,70,000	

Q- 4. Statement of Financial Position of Mr. Netai are given below:

<i>01-01-14</i>	<i>31-12-15</i>		<i>01-01-14</i>	<i>31-12-15</i>	
Accounts payable	29,000	25,000	Cash	40,000	30,000
Capital	7,31,000	6,15,000	Debtors	20,000	17,000
			Stock	8,000	13,000
			Buildings	92,000	80,000
			Machinery	6,00,000	5,00,000
7,60,000	6,40,000		7,60,000	6,40,000	

Additional Information:

(a) There were no drawings

(b) There were no purchase or sale of either buildings or Machinery.

Prepare a statement of Cash Flow.

Q - 5. Following are the summarised Balance Sheet of Sheetal Ltd as on 31st December 2014 and 2015.

<i>Liabilities</i>	<i>2014</i>	<i>2015</i>	<i>Assets</i>	<i>2014</i>	<i>2015</i>
	₹	₹		₹	₹
Share Capital	4,50,000	4,50,000	Fixed Assets	4,00,000	3,20,000
General Reserve	3,00,000	3,10,000	Investments		
Profit/Loss Account	56,000	68,000	(non Current)	50,000	60,000
Creditors	1,68,000	1,34,000	Stock	2,40,000	2,10,000
Provision for tax	75,000	10,000	Debtors	2,10,000	4,55,000
Mortgage loan	—	2,70,000	Bank	1,49,000	1,97,000
10,49,000	12,42,000		10,49,000	12,42,000	

Additional Information:

(a) Investment costing ₹ 8,000 were sold during the year 2014 for ₹ 8,500.

(b) Provision for taxation made during the year was ₹ 90,000.

(c) During the year part of the fixed asset costing ₹ 10,000 was sold for ₹ 12,000. The profit was included in profit and Loss account.

(d) Dividend paid during the year accounted to ₹ 40,000.

Prepare Cash Flow Statement.

Q - 6. Balance Sheet of Amrita Ltd as on 31-12-12 and 31-12-13.

<i>Liabilities</i>	<i>2012</i>	<i>2013</i>	<i>Assets</i>	<i>2012</i>	<i>2013</i>
	₹	₹		₹	₹
Share Capital	2,00,000	3,00,000	Plant and Machinery	2,00,000	3,00,000
Share Premium	—	10,000	Land and Building	50,000	1,10,000
8% Debentures	1,00,000	50,000	Investments	10,000	50,000
General Reserve	50,000	80,000	Stock	80,000	60,000
Profit & Loss A/c.	50,000	70,000	Debtors	90,000	80,000
Provision for tax	30,000	40,000	Cash at bank	70,000	50,000
Sundry Creditors	50,000	70,000			
Proposed dividend	20,000	30,000			
	5,00,000	6,50,000		5,00,000	6,50,000

Additional Information:

- Investment costing ₹ 8,000 was sold for ₹ 15,000 the profit being credited to Profit and Loss Account.
- An interim dividend of ₹ 20,00 was paid during the year.

Prepare Cash Flow Statement.

Q - 7. From the following information prepare a Cash Flow Statement

Balance Sheet as 31st December

<i>Liabilities</i>	<i>2012</i>	<i>2013</i>	<i>Assets</i>	<i>2012</i>	<i>2013</i>
Capital	3,00,000	3,50,000	Land & Buildings	2,20,000	3,00,000
Bank Overdraft	3,20,000	2,00,000	Machinery	4,00,000	2,80,000
Bills Payable	1,00,000	80,000	Stock	1,00,000	90,000
Creditors	1,80,000	2,50,000	Debtors	1,40,000	1,60,000
		Cash	40,000	50,000	
9,00,000	8,80,000		9,00,000	8,80,000	

- Net Profit during the year 2012 amounted to ₹ 1,20,000
- During the year, a machine costing ₹ 50,000 (accumulated depreciation ₹ 20,000) was sold for ₹ 26,000. The provision for depreciation against machinery as on 31-12-2004 was ₹ 1,00,000 and as on 31-12-2012 ₹ 1,70,000.

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20.12 BIBLIOGRAPHY

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20.13 SUGGESTED READINGS

1. Bhattacharya, S.K. and Dearden, John, "Accounting for Management", Vikas Publishing House.
2. Chandra, Prasanna, "Financial Management: Theory and Practices", Tata Mc Graw Hill, New Delhi.
3. Khan and Jain, "Theory and Problems of Management and Cost Accounting", Tata Mc Graw Hill, New Delhi.

20.14 TERMINAL QUESTIONS

1. State the objectives of preparing cash flow analysis.

2. What are the limitations of cash flow statement?

UNIT 21 ACCOUNTING AND FINANCIAL INFORMATION SYSTEM

Structure:

- 21.1 Introduction
- 21.2 Introduction to Accounting Information Systems
- 21.3 Meaning of Accounting Information Systems
- 21.4 Components of an Accounting Information System
- 21.5 Advantages of Accounting Information Systems
- 21.6 Implementation of Accounting Information Systems
- 21.7 Benefits of Information Accounting System
- 21.8 Objectives of Accounting Information Systems
- 21.9 Concept of Financial Information System
- 21.10 Advantages of a Financial Information System
- 21.11 Summary
- 21.12 Glossary
- 21.13 Check Your Progress (Multiple Choice/Objective Type Questions)
- 21.14 Key to Check Your Answer
- 21.15 Bibliography
- 21.16 Suggested Readings
- 21.17 Terminal Questions

Objectives

After reading this unit you will be able to understand:

- Accounting Information System
- Financial Information System

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21.1 INTRODUCTION

An Accounting Information System (AIS) is a system of collecting, storing and processing financial and accounting data that are used by decision makers. An accounting information system is generally a computer-based method for tracking accounting activity in conjunction with information technology resources.

21.2 INTRODUCTION TO ACCOUNTING INFORMATION SYSTEMS

Accounting Information System (AIS) have experienced vast changes in several decades, improving from paper-based journals and ledgers to completely automated, paperless systems. However, the migration from paper to computer has its risks to the company.

It contains the confidential information which becomes compromised if it is unprotected. The unauthorized use of the accounting system can be misused and involved in risking loss of the information, disastrous and bad data input. Security of accounting systems is a priority in many companies. In recent decades, the changing environment has posed a threat to the company. As a system accountant of a large established UK based Retail Company specialising in the sale of household electrical appliances, it is necessary to consider the risks and the security threats that the company would face in today's business environment.

According to Tony Boczeko, risk is related to the likelihood of loss, the probability of mischance and the possibility of hazard or harm. Moreover, risk can be defined in several ways such as the chance of bad consequences, the exposure to mischance and the probability of loss. These risks and threats can lead an undesirable impact on both the present and future of the company's financial activities and stability.

Traditionally, accounting is purely based on manual approach. Experience and skillfulness of an individual accountant are critical in accounting processes. Even using the manual approach can be ineffective and inefficient. Accounting information systems resolve many of above issues. AISs can support an automation of processing large amount of data and produce timely and accuracy of information.

Early accounting information systems were designed for payroll functions in 1970s. Initially, accounting information systems were predominantly developed "in-house" as legacy systems. Such solutions were expensive to develop and difficult to maintain. Therefore, many accounting practitioners preferred the manual approach rather than computer-based.

Small businesses often use accounting lower costs software packages such as MYOB and Quick books. Large organizations would often choose ERP systems. As the need for connectivity and consolidation between other business systems increased, accounting information systems were merged with larger, more centralized systems known as enterprise resource planning (ERP). Before, with separate applications to manage different business functions, organizations had to develop complex interfaces for the systems to communicate with each other. In ERP, a system such as accounting information system is built as a module integrated into a suite of applications that can include manufacturing, supply chain, human resources. These modules are integrated together and are able to access the same data and execute complex business processes. Today, Cloud-based accounting information systems are increasingly popular for both SMEs and large organizations for lower costs. With adoption of accounting information systems, many businesses have removed low skills, transactional and operational accounting roles.

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AIS typically follow a multitier architecture separating the presentation to the user, application processing and data management in distinct layers. The presentation layer manages how the information is displayed to and viewed by functional users of the system (through mobile devices, web browsers or client application). The entire system is backed by a centralized database that stores all of the data. This can include transactional data generated from the core business processes (purchasing, inventory, and accounting) or static, master data that is referenced when processing data (employee and customer account records and configuration settings). As transactions occur, the data is collected from the business events and stored into the system's database where it can be retrieved and processed into information that is useful for making decisions. The application layer retrieves the raw data held in the database layer, processes it based on the configured business logic and passes it onto the presentation layer to display to the users. For example, consider the accounts payable department when processing an invoice. With an accounting information system, an accounts payable clerk enters the invoice, provided by a vendor, into the system where it is then stored in the database. When goods from the vendor are received, a receipt is created and also entered into the AIS. Before the accounts payable department pays the vendor, the system's application processing tier performs a three-way matching where it automatically matches the amounts on the invoice against the amounts on the receipt and the initial purchase order. Once the match is complete, an email is sent to an accounts payable manager for approval. From here a voucher can be created and the vendor can ultimately be paid.

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21.3 MEANING OF ACCOUNTING INFORMATION SYSTEMS

An accounting information system (AIS) is a structure that a business uses to collect, store, manage, process, retrieve and report its financial data so that it can be used by accountants, consultants, business analysts, managers, chief financial officers (CFOs), auditors and regulatory and tax agencies.

21.4 COMPONENTS OF AN ACCOUNTING INFORMATION SYSTEM

Accounting information systems generally consist of six main parts: people, procedures and instructions, data, software, information technology infrastructure and internal controls.

1. People

The people in AIS are simply the system users. Professionals who may need to use an organization's AIS include accountants, consultants, business analysts, managers, chief financial officers and auditors. AIS help the different departments within a company work together. For example, management can establish sales goals for which staff can then order the appropriate amount of inventory. The inventory order notifies the accounting department of a new payable. When sales are made, sales people can enter customer orders, accounting can invoice customers, the warehouse can assemble the order, the shipping department can send it off, and the accounting department gets notified of a new receivable. The customer service department can then track customer shipments and the system can create sales reports for management. Managers can also see inventory costs, shipping costs, manufacturing costs and so on.

2. Procedure and Instructions

The procedure and instructions of AIS are the methods it uses for collecting, storing, retrieving and processing data. These methods will be both manual and automated, and the data can come from both internal sources (e.g., employees) and external sources (e.g., customers' online orders). Procedures and instructions will be coded into AIS software; they should also be "coded" into employees through documentation and training. Procedures and instructions must be followed consistently to be effective.

3. Data

The data contained in AIS is all the financial information pertinent to the organization's business practices. Any business data that impacts the company's finances should

go into AIS. The data included in AIS will depend on the nature of the business, but it may consist of the following:

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- (a) sales orders
- (b) customer billing statements
- (c) sales analysis reports
- (d) purchase requisitions
- (e) vendor invoices
- (f) check registers
- (g) general ledger
- (h) inventory data
- (i) payroll information
- (j) timekeeping
- (k) tax information

This data can then be used to prepare accounting statements and reports such as accounts receivable aging, depreciation/amortization schedules, trial balance, profit and loss, and so on. Having all this data in one place - in the AIS - facilitates a business's recordkeeping, reporting, analysis, auditing and decision-making activities. For the data to be useful, it must be complete, correct and relevant.

4. Software

The software component of AIS is the computer programs used to store, retrieve, process and analyze the company's financial data. Before there were computers, AISs were manual, paper-based systems, but today, most companies are using computer software as the basis of the AIS. Small businesses might use Intuit's Quick books, Sage Peachtree Accounting, or Microsoft's Small Business Accounting but there are many others. Small to mid-sized businesses might use SAP's Business One. Mid-sized and large businesses might use Microsoft's Dynamics GP, Sage Group's MAS 90 or MAS 200, Oracle's Peoplesoft or Epicor Financial Management.

Quality, reliability and security are key components of effective AIS software. Managers rely on the information it outputs to make decisions for the company, and they need high-quality information to make sound decisions.

AIS software programs can be customized to meet the unique needs of different types of businesses. If an existing program does not meet a company's needs, software can also be developed in-house with substantial input from end users or can be developed by a third-party company specifically for the organization. The system could even be outsourced to a specialized company.

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5. Information Technology Infrastructure

Information technology infrastructure is just a fancy name for the hardware used to operate the accounting information system. Most of these hardware items are things a business would need to have anyway - they include personal computers, servers, printers, surge protectors, routers, storage media, and possibly a backup power supply.

6. Internal Controls

The internal controls of an AIS are the security measures it contains to protect sensitive data. These can be as simple as passwords or as complex as biometric identification. AIS must have internal controls to protect against unauthorized computer access and to limit access to authorized users which includes some users inside the company. It must also prevent unauthorized file access by individuals who are allowed to access only select parts of the system.

21.5 ADVANTAGES OF ACCOUNTING INFORMATION SYSTEMS

A big advantage of computer-based accounting information systems is that they automate and streamline reporting, develop advanced modeling and support data mining. Reporting is major tool for organizations to accurately see summarized, timely information used for decision-making and financial reporting. The accounting information system pulls data from the centralized database, processes and transforms it and ultimately generates a summary of that data as information that can now be easily consumed and analyzed by business analysts, managers or other decision makers. These systems must ensure that the reports are timely so that decision-makers are not acting on old, irrelevant information and, rather, able to act quickly and effectively based on report results. Consolidation is one of the hallmarks of reporting as people do not have to look through an enormous number of transactions. For instance, at the end of the month, a financial accountant consolidates all the paid vouchers by running a report on the system. The system's application layer provides a report with the total amount paid to its vendors for that particular month. With large corporations that generate large volumes of transactional data, running reports with even AIS can take days or even weeks.

After the wave of corporate scandals from large companies such as Tyco International, Enron and WorldCom, major emphasis was put on enforcing public companies to implement strong internal controls into their transaction-based systems. This was made into law with the passage of the Sarbanes–Oxley Act of 2002 which stipulated that companies must generate an internal control report stating who is responsible for an organization's internal control structure and outlines

the overall effectiveness of these controls. Since most of these scandals were rooted in the companies' accounting practices, much of the emphasis of Sarbanes Oxley was put on computer-based accounting information systems. Today, AIS vendors tout their governance, risk management, and compliance features to ensure business processes are robust and protected and the organization's assets (including data) are secured.

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21.6 IMPLEMENTATION OF ACCOUNTING INFORMATION SYSTEMS

Many large and SMEs are now adopting cost effective cloud-based accounting information system in recent years. Looking back years ago, most organizations, even larger ones, hire outside consultants, either from the software publisher or consultants who understand the organization and who work to help select and implement the ideal configuration, taking all components into consideration.

The steps to implement an accounting information system are as follows:

(i) Detailed Requirements Analysis

The current system is thoroughly understood, including problems, and complete documentation of the system transactions, reports, and questions that need to be answered are gathered. User needs that are not in the current system are outlined and documented. Users include everyone, from top management to data entry. The requirements analysis not only provides the developer with the specific needs, it also helps users accept the change. Users who have the opportunity to ask questions and provide input are much more confident and receptive of the change, than those who sit back and don't express their concerns.

(ii) Systems Design (synthesis)

The analysis is thoroughly reviewed and a new system is created. The system that surrounds the system is often the most important. What data needs to go into the system and how is this going to be handled? What information needs to come out of the system how is it going to be formatted? If we know what needs to come out, we know what we need to put into the system. The program we select will need to appropriately handle the process. The system is built with control files, sample master records, and the ability to perform processes on a test basis. The system is designed to include appropriate internal controls and to provide management with the information needed to make decisions. It is a goal of an accounting information system to provide information that is relevant, meaningful, reliable, useful, and current. To achieve this, the system is designed so that transactions are entered as

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they occur (either manually or electronically) and information is immediately available online for management.

Once the system is designed, an RFP is created detailing the requirements and fundamental design. Vendors are asked to respond to the proposal, to provide demonstrations of the product and to specifically respond to the needs of the organization. Ideally, the vendor will input control files, sample master records, and be able to show how transactions are processed that result in the information that management needs to make decisions. An RFP for the information technology infrastructure follows the selection of the software product because the software product generally has specific requirements for infrastructure. Sometimes, the software and the infrastructure are selected from the same vendor. If not, the organization must ensure that vendors will work together without “pointing fingers” when there is an issue with either the software or the infrastructure.

(iii) Documentation

As the system is being designed, it is documented. The documentation includes vendor documentation of the system and, more importantly, the procedures or detailed instructions that help users handle each process specific to the organization. Most documentation and procedures are online and it is helpful if organizations can add to the help instructions provided by the software vendor. Documentation and procedures tend to be an afterthought but is the insurance policy and the tool used during testing and training before launch. The documentation is tested during the training so that when the system is launched, there is no question that it works and that the users are confident with the change.

(iv) Testing

Before launch, all processes are tested from input through output, using the documentation as a tool to ensure that all processes are thoroughly documented and that users can easily follow the procedures: They know it works and that the procedures will be followed consistently. The reports are reviewed and verified, so that there's no garbage in-garbage out. This is done in a test system not yet fully populated with live data. Unfortunately, most organizations launch systems before thorough testing, adding to end-user frustration when processes don't work. The documentation and procedures may be modified during this process. All identified transactions must be tested during this step. All reports and online information must be verified and traced through the audit trail so that management is ensured that transactions will be handled consistently and that the information can be relied upon to make decisions.

(v) Training**NOTES**

Before launch, all users need to be trained, with procedures. This means a trainer using the procedures to show each end user how to handle a procedures. The procedures often need to be updated during training as users describe their unique circumstances and the “design” is modified with this additional information. The end user then performs the procedure with the trainer and the documentation. The end user then performs the procedure with the documentation alone. The end user is then on his or her own with the support, either in person or by phone, of the trainer or other support person. This is before data conversion.

(vi) Data Conversion

Tools are developed to convert the data from the current system (which was documented in the requirements analysis) to the new system. The data is mapped from one system to the other and data files are created that will work with the tools that are developed. The conversion is thoroughly tested and verified before final conversion. There’s a backup so it can be restarted, if necessary.

(v) Launch

The system is implemented only after all of the above is completed. The entire organization is aware of the launch date. Ideally, the current system is retained and often run in “parallel” until the new system is in full operation and working properly. With the current mass-market software used by thousands of companies and fundamentally proven to work, the “parallel” run that is mandatory with software tailor-made to a company is generally not done. This is only true, however, when the above process is followed, the system is thoroughly documented and tested, and users are trained before launch.

(vi) Tools

Online resources are available to assist with strategic planning of accounting information systems. Information systems and financial forms aid in determining the specific needs of each organization, as well as assigning responsibility to principles involved.

(vii) Support

The end users and managers have ongoing support available at all times. System upgrades follow a similar process and all users are thoroughly apprised of changes, upgraded in an efficient manner, and trained.

Many organizations chose to limit the time and money spent on the analysis, design, documentation, and training, and move right into software selection and implementation. If a detailed requirements analysis is performed with adequate

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time being spent on the analysis, the implementation and ongoing support will be minimal. Organizations that skip the steps to ensure the system meets their needs are often left with frustrated end users, costly support, and information that is not current or correct. Worse yet, these organizations build the system three times instead of once.

21.7 BENEFITS OF INFORMATION ACCOUNTING SYSTEM

Information systems changed forever the way accounting tasks are processed. The days of green paper pads are gone, and instead businesses have a centralized place where all accounting transactions are entered and saved. No more looking for paper journals or adding up long columns computer software does that for you, error-free. Thanks to reasonably priced hardware and software, even small businesses can benefit from computerized accounting.

1. Speed

The main benefit of information systems in accounting is the speed of processing tasks. Data is entered once and can then be used and reused in compiling reports by literally pressing a button. If a transaction needs correction, it is easily done, with reports generated afterward at speeds never possible with manual accounting systems.

2. Classification

When data is entered in an accounting system, manual or computerized, an accountant needs to classify it in a detailed fashion. For example, a transaction could be sales revenue or interest revenue. Using information systems, this classification process is easily accomplished with a drop-down menu from which you choose the proper category. You can also quickly generate reports involving classifications. With a manual system, this process takes much more time.

3. Safety

Once data is entered into a computer, it is safe. The chances of losing data are remote, especially when you perform regular system backups. In manual systems, paper pads can be lost or damaged more easily. You can save data on the Internet, where it will not only be accessible anytime you need it but will also still be secure even if your computer is lost or damaged.

21.8 OBJECTIVES OF ACCOUNTING INFORMATION SYSTEMS

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An accounting information system provides accurate and timely financial information for internal management purposes. While these systems can include paper manuals and ledgers, most systems in today's business environment are built upon accounting software programs or applications. These systems provide financial or operational reports for business owners to make decisions. An accounting information system can also integrate and fulfill departmental and company-wide objectives.

(i) Central Information Collection

Accounting information systems collect information for various purposes in a business. Large organizations often use this system to gather and organize financial and other information from multiple business departments or divisions. An accounting system can also benefit organizations with several national or international locations. This system allows for the electronic transference of information from many sources into a central location where accountants gather and process this data. Some systems can also gather information in a real-time format.

(ii) Checks and Balances

Accounting managers and supervisors use an accounting information system to separate tasks and ensure controls are in place for different accounting functions. Accounts payable, accounts receivable, payroll, departmental financial data, fixed assets and purchasing each work under separate modules in an advanced accounting system and demand individual handling processes and procedures. Each of these individual modules feed summarized data into the general ledger but allow for system checks and balances along the way. Reports can be generated from individual modules to ensure accuracy of data before being passed on to a company's general ledger.

(iii) Improving the Flow of Work

Improving the flow of work in individual departments often gets a boost by the implementation of an accounting information system. Departments outside of accounting must understand how critical information is processed through the company's internal financial information system for a variety of reasons. Source documents - such as invoices, purchase orders, employee expense reports, time cards for payroll input, bills and asset acquisition forms - must all find their way from the originator to the accounting department.

Depending upon the software, the accounting system requires a variety of information for different parts of the process be manually input into the system. This often

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determines the work flow of other departments in regards to processing financial data. Procedures and processes that clearly delineate the needed information, the steps to process that information and the approval process, aid in reducing redundant work and ensure that the accounting department has the necessary approvals to process financial data.

21.9 CONCEPT OF FINANCIAL INFORMATION SYSTEM

A financial information system is a software system that manages all aspects of an organization's financial transactions, including outgoings, expenses, income and assets. Almost all businesses of varying sizes make use of a financial information system, thanks to the myriad of advantages it brings.

21.10 ADVANTAGES OF A FINANCIAL INFORMATION SYSTEM

The financial accounting system module records all accounting and financial transactions and produces financial statements. Funds management identifies funding sources and overall spending consistent with budgets. Controlling tracks revenue and expenses for each project or department. All company financial information is available in one place, and easily accessed by anyone in the company who needs the relevant information. Financial data stored in-house on protected software systems is much more secure than in paper document formats.

Accounting errors are far less likely when using a financial information system, as the software can make fast and accurate calculations. This also makes budget planning much easier, allowing a greater degree of flexibility when factoring in growth and change within a business.

Additionally, use of financial information systems means that any business can easily update and record an accurate audit trail. This includes being able to keep all receivables and payments completely transparent and managing multiple bank accounts, while keeping employee time optimized and paperwork low.

21.11 SUMMARY

An Accounting Information System (AIS) is a system of collecting, storing and processing financial and accounting data that are used by decision makers. An accounting information system is generally a computer-based method for tracking accounting activity in conjunction with information technology resources.

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Accounting Information Systems (AIS) have experienced vast changes in several decades, improving from paper-based journals and ledgers to completely automated, paperless systems. However, the migration from paper to computer has its risks to the company.

It contains the confidential information which becomes compromised if it is unprotected. The unauthorized use of the accounting system can be misused and involved in risking loss of the information, disastrous and bad data input. Security of accounting systems is a priority in many companies. In recent decades, the changing environment has posed a threat to the company. As a system accountant of a large established UK based Retail Company specialising in the sale of household electrical appliances, it is necessary to consider the risks and the security threats that the company would face in today's business environment.

An accounting information system (AIS) is a structure that a business uses to collect, store, manage, process, retrieve and report its financial data so that it can be used by accountants, consultants, business analysts, managers, chief financial officers (CFOs), auditors and regulatory and tax agencies.

A big advantage of computer-based accounting information systems is that they automate and streamline reporting, develop advanced modeling and support data mining. The accounting information system pulls data from the centralized database, processes and transforms it and ultimately generates a summary of that data as information that can now be easily consumed and analyzed by business analysts, managers or other decision makers.

The current system is thoroughly understood, including problems, and complete documentation of the system transactions, reports, and questions that need to be answered are gathered. User needs that are not in the current system are outlined and documented. Users include everyone, from top management to data entry. The requirements analysis not only provides the developer with the specific needs, it also helps users accept the change. Users who have the opportunity to ask questions and provide input are much more confident and receptive of the change, than those who sit back and don't express their concerns.

Information systems changed forever the way accounting tasks are processed. The days of green paper pads are gone, and instead businesses have a centralized place where all accounting transactions are entered and saved. No more looking for paper journals or adding up long columns computer software does that for you, error-free. Thanks to reasonably priced hardware and software, even small businesses can benefit from computerized accounting.

An accounting information system provides accurate and timely financial information for internal management purposes. While these systems can include paper manuals

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and ledgers, most systems in today's business environment are built upon accounting software programs or applications. These systems provide financial or operational reports for business owners to make decisions. An accounting information system can also integrate and fulfill departmental and company-wide objectives.

Accounting managers and supervisors use an accounting information system to separate tasks and ensure controls are in place for different accounting functions. Accounts payable, accounts receivable, payroll, departmental financial data, fixed assets and purchasing each work under separate modules in an advanced accounting system and demand individual handling processes and procedures. Each of these individual modules feed summarized data into the general ledger but allow for system checks and balances along the way. Reports can be generated from individual modules to ensure accuracy of data before being passed on to a company's general ledger.

A financial information system is a software system that manages all aspects of an organization's financial transactions, including outgoings, expenses, income and assets. Almost all businesses of varying sizes make use of a financial information system, thanks to the myriad of advantages it brings.

The financial accounting system module records all accounting and financial transactions and produces financial statements. Funds management identifies funding sources and overall spending consistent with budgets. Controlling tracks revenue and expenses for each project or department. All company financial information is available in one place, and easily accessed by anyone in the company who needs the relevant information. Financial data stored in-house on protected software systems is much more secure than in paper document formats.

Accounting errors are far less likely when using a financial information system, as the software can make fast and accurate calculations. This also makes budget planning much easier, allowing a greater degree of flexibility when factoring in growth and change within a business.

21.12 GLOSSARY

- (a) **Accounting Information System:** An Accounting Information System (AIS) is a system of collecting, storing and processing financial and accounting data that are used by decision makers. An accounting information system is generally a computer-based method for tracking accounting activity in conjunction with information technology resources.
- (b) **Information systems:** Information system, an integrated set of components for collecting, storing, and processing data and for providing information and knowledge.

- (c) **Financial Information System:** A Financial Information System is a software system that manages all aspects of an organization's financial transactions, including outgoings, expenses, income and assets. Almost all businesses of varying sizes make use of a financial information system, thanks to the myriad of advantages it brings.
- (d) **Financial accounting system module:** The financial accounting system module records all accounting and financial transactions and produces financial statements. Funds management identifies funding sources and overall spending consistent with budgets. Controlling tracks revenue and expenses for each project or department. All company financial information is available in one place, and easily accessed by anyone in the company who needs the relevant information. Financial data stored in-house on protected software systems is much more secure than in paper document formats.

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21.13 CHECK YOUR PROGRESS (MULTIPLE CHOICE/OBJECTIVE TYPE QUESTIONS)

(A) Short Answer Questions

1. What is Accounting Information System?
2. What is Information Technology Infrastructure?
3. What is Internal Control?
4. What is Information System?
5. What is Systems Design?
6. What is Data Conversion?
7. What is Information Accounting System?
8. What is Central Information Collection?
9. Give the meaning of Financial Information System.

(B) Extended Answer Questions

1. Give an introduction to Accounting Information Systems.
2. Discuss various components of an Accounting Information System.
3. Explain advantages of Accounting Information Systems.
4. Discuss implementation of Accounting Information Systems.
5. Explain benefits of Information Accounting System.

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6. Discuss objectives of Accounting Information Systems.
7. Explain advantages of a financial information system.

(C) True or False

1. Financial Information System (AIS) is a system of collecting, storing and processing financial and accounting data that are used by decision makers.
2. Information system, an integrated set of components for collecting, storing, and processing data and for providing information and knowledge.
3. Financial Information System is a software system that manages all aspects of an organization's financial transactions, including outgoings, expenses, income and assets.
4. The financial accounting system module records all accounting and financial transactions and produces financial statements.
5. Funds management identifies funding sources and overall spending consistent with budgets.

(D) Multiple Choice Questions

1. What is a system of collecting, storing and processing financial and accounting data that are used by decision makers?
 - (a) Accounting Information System (AIS)
 - (b) Information system
 - (c) Financial Information System
 - (d) Funds management
2. What is an integrated set of components for collecting, storing, and processing data and for providing information and knowledge?
 - (a) Accounting Information System (AIS)
 - (b) Information system
 - (c) Financial Information System
 - (d) Funds management
3. What is a software system that manages all aspects of an organization's financial transactions, including outgoings, expenses, income and assets?
 - (a) Accounting Information System (AIS)
 - (b) Information system
 - (c) Financial Information System
 - (d) Funds management

4. What identifies funding sources and overall spending consistent with budgets?
- (a) Accounting Information System (AIS)
 - (b) Information system
 - (c) Financial Information System
 - (d) Funds management

NOTES

(E) Fill in the Blanks

1. is a system of collecting, storing and processing financial and accounting data that are used by decision makers.
2. is an integrated set of components for collecting, storing, and processing data and for providing information and knowledge.
3. is a software system that manages all aspects of an organization's financial transactions, including outgoings, expenses, income and assets.
4. The financial accounting system module records all accounting and financial transactions and produces.....
5. identifies funding sources and overall spending consistent with budgets.

21.14 KEY TO CHECK YOUR ANSWER

(C) 1. False 2. True 3. True 4. True 5. True

(D) 1. (a) 2. (b) 3. (c) 4. (d)

(E) 1. An Accounting Information System (AIS) 2. Information system 3. Financial Information System 4. financial statements 5. Funds management

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21.17 TERMINAL QUESTIONS

1. Discuss relationship between Accounting Information Systems and Financial Information Systems.
