DJC3A - MANAGEMENT ACCOUNTING

Unit I

Management Accounting – Meaning – Relationship between Cost, Financial and Management – objectives

Unit II

Financial Statement Analysis and Ratios, their Significance, Utility and Limitations – types of Ratios – Preparation of Financial Statements with Ratios

Unit III

Fund flow and cash flow analysis – forecasting – working capital requirements

Unit IV

Budget and budgetary control – objectives – master budget and functional budgets – techniques of capital budgeting

Unit V

Management Information System and Reporting – nature of information needed for management center- profit centre – types of reports

CONTENTS

Unit	Title	Page No.
I	Management Accounting Introduction	1 – 25
II	Financial Statement Analysis	26 – 74
	Ratio Analysis	
III	Fund Flow Statement	75 – 131
	Cash Flow Statement	
	Working Capital Management	
IV	Budget and Budgetary Control	132 – 180
	Capital Budgeting	
V	Management Information System	181 – 203
	Reporting	

UNIT I

NATURE AND SCOPE OF MANAGEMENT ACCOUNTING

INTRODUCTION

Financial accounting is concerned with recording transactions and preparing financial and other reports to be used internally by management and externally by investors, creditors, potential investors, and government agencies. Management accounting, on the other hand, is primarily concerned with providing information for use by people within the organization.

DEFINITIONS OF MANAGEMENT ACCOUNTING

1. Anglo-American Council on Productivity: "Management Accounting is the presentation of accounting information in such a ways as to assist management in the creation of policy and the day-to -day operation of an undertaking.
2. Robert N. Anthony : "Management Accounting is concerned with accounting information that is useful to management"
3. T.G. Rose : "Management Accounting is the adaptation and analysis of accounting information and its diagnosis and explanation in such a way as to assist management."
4. J. Batty : “Management Accounting 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 maximising profits or minimising losses”.
5. The Institute of Chartered Accountants of India : "Such of its techniques and procedures by which accounting mainly seeks to aid the management collectively have come to be known as management accounting."
6. The Institute of Cost & Works Accountants of India defines Management Accounting as "a system of collection and presentation of relevant economic

information relating to an enterprise for planning. controlling and decision making."

7. The American Accounting Association : "Management Accounting 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."

CHARACTERISTICS OR NATURE OF MANAGEMENT ACCOUNTING

1. The following are the main characteristics of management accounting : Providing Accounting Information. Management accounting is based on accounting information. The collection and classification of data is the primary function of accounting department. The accounting data is used for reviewing various policy decisions. Management accounting is a service function and ft provides necessary information to different levels of management

2. Cause and Effect Analysis. Financial accounting is limited to the preparation of profit and loss accounting and finding out the ultimate result. If there is a profit the factors directly influencing the profitability are also studied. So the study of cause and_ effect relationship is possible in management accounting.

3. Use of Special Techniques and Concepts. Management accounting uses special techniques and concepts to make accounting data more useful. The techniques usually used include financial planning and analysis, standard costing, budgetary control, marginal costing, project appraisal, control accounting, etc. The type of technique to be used will be determined according to the situation and necessity.

4. Taking important decisions: management accounting helps in taking various important decisions. It supplies necessary information to the management which may base its decisions on it.

5. Achieving of Objectives. In management accounting, the accounting information is used in such a way that it helps in achieving organisational objectives.

6. No Fixed Norms Followed. In financial accounting certain rules are followed for preparing different accounting books. On the other hand, no specific rules are followed in management accounting

7. Increase in efficiency : The purpose of using accounting information is to increase efficiency the concern. The efficiency can be achieved by setting up goals for each department or section.

8. Supplies Information and not Decision. The management accountant supplies information management. The decisions are to be taken by the top management. It is only to guide and not to supply decisions.

9. Concerned with Forecasting. The management accounting is concerned with the future. It helps the management in planning and forecasting.

SCOPE OF MANAGEMENT ACCOUNTING

The following facts of management accounting are of a great significance and form the scope of this subject.

1. Financial Accounting. Financial accounting deals with the historical data. The recorded facts about an organisation are useful for planning the future course of action.

2. Cost Accounting. Cost accounting provides various techniques for determining cost of manufacturing products or cost of providing service. It uses financial data for finding out cost of various jobs, products or processes.

3. Financial Management: Financial management is concerned with the planning and controlling of the financial resources of the firm. It deals with raising of funds and their effective utilization.

4. Budgeting and Forecasting. Budgeting means expressing the plans, policies and goals of the enterprise for a definite period in future.

5. Inventory Control. Inventory is used to denote stock of raw materials, goods in the process of manufacture and finished products.

6. Reporting to Management One of the functions of management accountant is to keep the management informed of various activities of the concern so as to assist it in controlling the enterprise. The reports are presented in the form of graphs, diagrams, index numbers or other statistical techniques so as to make them easily understandable. The management accountant sends interim reports to the management and these reports may be monthly, quarterly, half-yearly. The reports may cover profit and logs statement, cash and fund flow statements, stock reports, absentee reports and reports on orders in hand, etc.

7. Interpretation of Data. The management accountant interprets various financial statements to the management. These statements give an idea about the financial and earning position of the concern. These statements may be

studied m comparison to statements of earlier periods or in comparison with the statements other similar other concerns.

8. Control procedures and Methods. Control procedures and methods are needed to use various factors of production in a most economical way.

9. Internal Audit. Internal audit system is necessary to judge the performance of every department. The actual performance of every department and individual is compared with the pre-determined standards.

10. Tax Accounting. In the present complex tax systems, tax planning is an important part of management accounting. Income statements are prepared and tax liabilities are calculated. The management is informed about the tax burden from central government state government and local authorities.

11. Office Services. Management accountant may be required to control an office. He will be expected to deal with data processing, filing, copying, duplicating, communicating, etc. He will also be reporting about the utility of different office machines.

OBJECTIVES OF MANAGEMENT ACCOUNTING

The following are the important objectives of management accounting.

1. **Planning and Policy Formulation:** The object of management accounting is to supply necessary data to the management for formulating plans. Planning is essentially related to taking decisions for future. It also includes forecasting, setting goals and deciding alternative courses of action.

2. **Helpful in Controlling Performance:** Management accounting devices like standard costing and budgetary control are helpful in controlling performance. The management accountant acts as a coordinating link between different departments and he also monitors their performance to die top management. The management is able to control performance of each and every individual with the help of management accounting devices.

3. **Helpful in Organising:** Organisation is related to the establishment of relationship among different individuals in the concern. It also includes the delegation of authority and fixing of responsibility. Management accounting is connected with the establishment of cost centers, preparation of budgets, and preparation of cost control accounts and fixing of responsibility for different functions. All these aspects are helpful in setting up an effective and efficient organisational framework.

4. **Helpful in Interpreting Financial Information:** The main object of management accounting is to present financial information to the management in such a way that it is easily understood. Management accountant explains these statements to the management in a simple language. If necessary, he uses statistical devices like charts, diagrams, index numbers, etc. so that the information is easily followed.

5. **Motivating Employees:** Management accounting helps the management in selecting best alternatives of doing the things. Targets are laid down for the employees. They feel motivated in achieving their targets and future incentives may be given for improving their performance.

6. **Helpful in Making Decisions:** The management has to take certain important decisions. A decision may have to be taken about the expansion or diversification of production.

7. **Reporting to Management:** One of the primary objectives of management accounting is to keep the management fully informed about the latest position of the concern. This helps management in taking proper and timely decisions.

8. **Helpful in Co-ordination:** Management accounting provides tools which are helpful in coordinating the activities of different sections or departments. Co-ordination is done through functional budgeting. Management accountant acts as a co-ordinator and reconciles the activities of different sections.

9. **Helpful in Tax Administration:** The complexities of tax system are increasing every day. Management accounting helps in assessing various tax liabilities and depositing correct amount of taxes with the concerned authorities.

FUNCTIONS OF MANAGEMENT ACCOUNTING

Some of the functions of management accounting are given as follows:

1. **Planning and Forecasting:** Management fixes various targets to be achieved by the business in near future. Planning and forecasting are essential for achieving business objectives. One of the important functions of the management accounting is to help management in planning for short-term and long term periods and also in making forecasts for the future. Management accountants use various techniques such as budgeting, standard costing, marginal costing, fund flow statements, probability and trend ratios, etc. for fixing targets. So management accounting tools are useful in planning and forecasting.

2. **Modification of Data:** Management accounting helps in modifying accounting data. The information is modified in such a way that it becomes useful for the management. If sales data is required, it can be classified according to product area, season-wise, type of customers and time taken for getting payments. Management accountant classifies and modifies information according to the requirements of the management.

3. **Financial Analysis and Interpretation:** Management accountant undertakes the job of presenting financial data in a simplified way. Management accountant analyses and interprets financial data in a simple way and presents it in a non-technical language. He gives facts and figures about various policies and evaluates them in monetary terms. He gives his opinion about various alternative courses of action so that h; becomes easy for the management to take a decision.

4. **Facilitates Managerial Control:** Management accounting is very useful in controlling performance. All accounting efforts are directed towards control of the enterprise. The standards of various departments and individuals are set-up. The actual performance is recorded and deviations are calculated. It enables the management to assess the performance of everyone in the organisation. Performance evaluation is -possible through standard costing and budgetary control which are an integral part of management accounting.

5. **Communication:** Management accounting establishes communication within the organisation and with the outside world. The management accountant prepares reports for the benefit of different levels of management and employees.

6. **Use of Qualitative Information:** The field of management accounting is not restricted to the use of monetary data only. It collects and uses qualitative information also. While preparing a production budget, management accountant

may not only use past production figures, but he may rely on the assessment of persons dealing with production, productivity reports, consumer surveys and many other business documents.

7. **Co-ordinating:** The co-ordination among different departments is essential for smooth running of the concern. Management accountant acts as a co-ordinator among different financial departments through budgeting and financial reports.

8. **Helpful in taking Strategic Decisions:** Management accounting helps in taking strategic decisions. It supplies analytical information regarding various alternatives and the choice of management is made easy.

9. **Supplying Information to Various Levels of Management:** Management accountant feeds information to different levels of management so that further decisions are taken. The supply of adequate information at the proper time will increase efficiency of the management.

RELATIONS OF MANAGEMENT ACCOUNTING WITH FINANCIAL ACCOUNTING

Financial accounting is concerned with the recording of day-to-day transactions of the business. On the other hand, management accounting uses financial accounts and taps other sources of information too. The accounts are used in such a way that they are helpful to the management in planning and forecasting various policies.

The main points of distinction are discussed as below:

1. **Object:** The object of financial accounting is to record various transactions with the purpose of maintaining accounts and to know the financial position

and to find out profit loss the end of the financial year. These records are useful to shareholders, creditors, bankers, debenture holders, etc. On the other hand, management accounting is essential to help management in formulating policies and plans.

2. **Nature.** Financial accounting is mainly concerned with the historical data. Management accounting projected or estimated figures are used.

3. **Subject-matter.** Financial accounting is concerned with assessing the results of the whole business while management accounting deals separately with different units, departments and cost centers. In financial accounting overall performance is judged, while in management accounting the results of different departments are evaluated separately to find out their performance differently.

4. **Compulsion.** The preparation of financial accounts is compulsory. Management accounting-is not compulsory.

5. **Precision.** In management accounting no emphasis is given to actual figures. The approximate figures are considered more useful than the exact figures. In financial accounting only actual figures are recorded.

6. **Reporting.** Financial accounts are prepared to find out profitability and financial position of the concern. These reports are useful for outsiders like bankers, investors, shareholders, Government agencies, etc. Management accounting reports are meant for internal use only.

7. **Description.** Only those things are recorded in financial accounting which can be measured in monetary terms. Management Accounting uses both monetary and non-monetary events.

8. **Quickness.** Reporting of management accounting is very quick. Management is fed with reports at regular intervals. Various figures are required to take managerial decisions at different levels of management. On the other hand, reporting of financial accounting ***is*** slow and time consuming.

9. **Accounting Principles.** Financial accounts are governed by the generally accepted principles and conventions. No set principles are followed in management accounting.

10. **Period:** Financial accounts are prepared for a particular period. Management accountant supplies information from time to time during the whole year. These are no specific periods for which, management accounts are prepared.

11. **Publication.** Financial accounts like profit and loss account and balance sheet are published for the benefit of the public. Under companies law every registered company is supposed to supply a copy of Profit and Loss Account add Balance Sheet to the Registrar of Companies at the end of the financial year. Management accounting statements are prepared for the benefit of the management only and these are not published.

12. **Audit:** Financial accounts can be got audited. It is not possible to get management accounts audited.

RELATIONSHIP BETWEEN COST AND MANAGEMENT ACCOUNTING

The following are the main points of distinction between cost and management accounting:

Object: The purpose of management accounting is to provide information to the management for planning and co-ordinating the activities of the business.

Scope: The scope of management accounting is very wide. Cost accounting deals primarily with cost ascertainment.

Nature: Management accounting is generally concerned with the projection of figures for future. The policies and-plans are prepared for providing future guidelines. Cost accounting uses both past and present figures.

Data used: Only quantitative aspect is recorded in cost accounting. Management accounting uses both quantitative and qualitative information.

Development: The development of cost accounting is related to industrial revolution. Management accounting has developed only in the last thirty years.

TOOLS AND TECHNIQUES OF MANAGEMENT ACCOUNTING

The tools and techniques used in management accounting are discussed as follows

1. **Financial Policy and Accounting:** The proportion between share capital and loans should also be decided. All these decisions are very important and management accounting provides techniques for financial planning.
2. **Analysis of Financial Statements:** The analysis of financial statements is meant to classify and present the data in such a way that it becomes useful for the management.

3. **Historical Cost Accounting:** The system of recording actual cost data on or after the date when it has been incurred is known as historical cost accounting.
4. **Budgetary Control:** It is a system which uses budgets as a tool for planning and control.
5. **Standard Costing:** Standard costing is an important technique for cost control purposes. In standard costing system, costs are determined in advance. The determination of standard cost is based on a systematic analysis of prevalent conditions.
6. **Marginal Costing:** This is a method of costing which is concerned with changes in costs resulting The measuring rod of efficiency of a concern should be a return on capital employed. It should from changes m the volume of production. Under this system, cost of product is divided into marginal (variable) be consistently and fixed cost.
7. **Decision Accounting:** Decision taking involves a choice from various alternatives.
8. **Revaluation Accounting:** This is also known a Replacement Accounting. The preservation of capital in the business is the main object of management. The profits are calculated in such a way that capital is preserved in real terms;
9. **Control Accounting:** Control accounting is not a separate accounting system. Different systems have their control devices and these are used in control accounting.
10. **Management Information Systems:** With the development of electronic devices for recording and classifying data, reporting to management has considerably improved.

NEED AND IMPORTANCE OF MANAGEMENT ACCOUNTING

The following are the advantages of management accounting:

1. **Increases Efficiency:** Management accounting increases efficiency of business operations.
2. **Proper Planning:** Management is able to plan various operations with the help of accounting information. The technique of budgeting is helpful in forecasting various activities. The activities of the concern are planned in a systematic manner.
3. **Measurements of Performance:** The systems of budgetary control and standard costing enable the measurement of performance. In standard costing, standards are determined and then actual cost is compared with standard cost It enables the management to find out deviations between standard cost and actual cost. Budgetary control system too helps in measuring efficiency of all employees.
4. **Maximising Profitability:** The steps of controlling costs are able to reduce cost of production. The profits of the enterprise are maximised with the help of management accounting system.
5. **Improves Service to Customers:** The cost control devices employed in management accounting enable the reduction of prices.
6. **Effective Management Control:** The tools and techniques of management accounting are helpful to the management in planning, co-ordinating and controlling activities of the concern.

LIMITATIONS OF MANAGEMENT ACCOUNTING

1. **Based on Accounting Information:** Management accounting is based on data supplied by financial and cost accounting. Historical data is used to make future decisions.

2. **Lack of Knowledge:** The use of management accounting requires the knowledge of a number of related subjects. Management should be conversant with accounting principles, statistics, economics, principles of management etc., and only then management accounting can be effectively utilised.
3. **Intuitive Decisions:** Intuitive decisions limit the usefulness of management accounting.
4. **Not an Alternative to Administration:** Management accounting does not provide an alternative to administration.
5. **Top Heavy Structure:** The installation of a management accounting system needs an elaborate organisational system. Smaller units cannot afford to use this system because of heavy cost.
6. **Evolutionary Stage:** Management accounting is only in a developmental stage, it has not yet reached a final stage. The techniques and tools used by this system give varying and differing results.
7. **Personal Bias:** Personal prejudices and bias affect the objectivity of decisions.
8. **Psychological Resistance:** The installation of management accounting involves basic change in organisational set up. New rules and regulations are also required to be framed which affect a number of personnel.

FINANCIAL STATEMENTS

MEANING:

A financial statement is a collection of data organized according to logical and consistent accounting procedures. Its purpose is to convey an understanding of some financial aspects of a business firm. Thus, the term 'financial statements' generally refers to the statements:

i. The position statement or the balance sheet
ii. The income statement or the profit and loss account. These statements are used to convey to management and other interested outsiders the profitability and financial position of a firm.

In the words of John N. Myer, "The financial statements provide a summary of the accounts of a business enterprise, the balance sheet reflecting the assets, liabilities and capital as on a certain date and the income statement showing the results of operations during a certain period".

NATURE OF FINANCIAL STATEMENTS

The financial statements are prepared on the basis of recorded facts. The recorded facts are those which can be expressed in monetary terms. The statements are prepared for a particular period, generally one year. The transactions are recorded in a chronological order, as and when the events happen. The accounting records and financial statements prepared from these records are based on historical costs. They reflect a combination of recorded facts, accounting principles and personal judgements.

According to John N.Myer, "The financial statements are composed of data which are the result of a combinations of

a) Recorded facts concerning the business transactions,
b) Conventions adopted to facilitate the accounting technique,

c) Postulates, or assumptions made to and
d) Personal judgements used in the application of the conventions and postulates".

The following points explain the nature of financial statements

I. **Recorded Facts:** The term recorded facts refers to the data taken out from the accounting records. The records are maintained on the basis of actual cost data. The original cost or historical cost is the basis of recording various transactions.

II. **Accounting Conventions:** Certain accounting conventions are followed while preparing financial statements. The convention of valuing inventory at cost or market price, whichever is lower, is followed. The valuing of assets at cost less depreciation principle for balance sheet purposes is followed.

III. **Postulates:** The accountant makes certain assumptions while making accounting records. One of these assumptions is that the enterprise is treated as a going concern. The other alternative to this postulate is that the concern is to be liquidated.

IV. **Personal Judgements:** Even though certain standard accounting conventions are followed in preparing financial statements but still personal judgement of the accountant plays an important part. For example, in applying the cost or market value whichever is less to inventory valuation the accountant will have to use his judgement in computing the cost in a particular case. There are a number of methods for valuing stock, viz; last in first out, first in first out, average cost method, standard cost, base stock method, etc. Where judgement of the accountant will play an important role in choosing the most appropriate course of action.

OBJECTIVES OF FINANCIAL STATEMENTS

The following objectives of financial statements:

1. To provide financial information that assists in estimating the earning potentials of business.
2. To provide other needed information about changes in such economic resources and obligations.
3. To provide reliable financial information about economic resources and obligations of a business firm.
4. To provide reliable information about changes in net resources (resources less obligations) arising out of business activities.
5. To disclose, to the extent possible, other information related to the financial statements that is relevant to the needs of the users of these statements.

TYPES OF FINANCIAL STATMENTS

i. A balance sheet,
ii. An income statement,
iii. A statement of changes in owners accounts, and
iv. A statement of changes in financial position.

Balance Sheet: The American Institute of Certified Public Accountants defines Balance Sheet as, "A tabular statement of summary of balances (debits and credits) carried forward after an actual and constructive closing of books of account and kept according to principles of accounting".

Income Statement (Or Profit and Loss Account): Income statement is prepared to determine the operational position of the concern. It is a statement of revenues earned and the expenses incurred for earning that revenue. If there is excess of revenues over

expenditures it will show a profit and if the expenditures are more than the income then there will be a loss. The income statement is prepared for a particular period.

Statement of Changes in Owners Equity (Or Retained Earnings): statement of retained earnings is also known as Profit and Loss Appropriation Account. On the debit side, appropriations like interim dividend paid, proposed dividend on preference and equity share capital, amounts transferred to debenture redemption fund, capital redemption funds, general reserve, etc. are shown. The balance in this account will show the amount of profit retained in hand and carried forward. The appropriations cannot be more than the profits so this account will not have a debit balance. There cannot be appropriations without profits.

Statement of Changes in Financial Position: The basic financial statements, i.e., the balance sheet and the profit and loss account or income statement of a business reveal the net effect of the various transactions on the operational and financial position of the company. The statement of changes in financial position may take any of the following-two forms:

a) **Funds Flow Statement:** The funds flow statement is designed to analyse the changes in the financial condition of a business enterprise between two periods. The word 'Fund' is used to denote working capital. This statement will show the sources from which the funds are received and the uses to which these have been put. This statement helps the management in policy formulation and performance appraisal.

b) **Cash Flow Statement:** A statement of changes in the financial position of a firm on cash basis is called Cash Flow Statement. It summarises the causes of changes in cash position of a business enterprise between dates of two balances sheets.

CHARACTERISTICS OF IDEAL FINANCIAL STATEMENTS

I. **Depict True Financial Position:** The information contained in the financial statements should be such that a true and correct idea is taken about the financial position of the concern.

II. **Effective Presentation:** The financial statements should be presented in a simple and lucid way so as to make them easily understandable.

III. **Relevance:** Financial statements should be relevant to the objectives of the enterprise.

IV. **Attractive:** The financial statements should be prepared in such a way that important information is underlined so that it attracts the eye of the reader.

V. **Easiness:** Financial statements should be easily prepared.

VI. **Comparability:** The results of financial analysis should be in a way that can be compared to the previous year's statements. The statement can also be compared with the figures of other concerns of the same nature. Sometimes budgeted*figures are given along with the present figures. The comparable figures will make the statements more useful.

VII. **Analytical Representation:** The information should be analysed in such a way that similar data is presented at the same place.

VIII. **Brief:** If possible, the financial statements should be presented in brief.

IX. **Promptness:** The financial statements should be prepared and presented at the earliest possible. Immediately at the close of the financial year, statements should be ready.

USE AND IMPORTANCE OF FINANCIAL STATEMENTS

The following major uses of financial statements'

a) As a report of stewardship ;

b) As a basis for fiscal policy ;

c) To determine the legality of dividends ;

d) As guide to advise dividend action ;

e) As a basis for the granting of credit ;
f) As informative for prospective investors in an enterprise;
g) As a guide to the value of investment already made;
h) As an aid to government supervision ;
i) As a basis for price or rate regulation ;
j) As a basis for taxation.

The utility of financial statements to different parties is discussed in detail as follows:
Management: The financial statements are useful for assessing the efficiency for different cost centre's. The management is able to exercise cost control through these statements.
Creditors: The trade creditors are to be paid in a short period. This liability is met out of current assets. Tm creditors will be interested in current solvency of the concern. The calculation of current ratio and liquid ratio will enable the creditors to assess the current financial position of the concern in relation to their debts.
Bankers: The banker is interested to see that the loan amount is secure and the customer is also able to pay the interest regularly. The banker will analyse the balance sheet to determine financial strength of the concern and profit and loss account will also be studied to find out the earning position.
Investors: They are interested in the security of the principal amount of loan and regular interest payments by the concern. The investors will study the long-term solvency of the concern with the help of financial statements. **Government:** The financial statements are used to assess tax liability of business enterprises. The government studies economic situation of the country from these statements. These statements enable the government to find out whether business is following various rules and regulations or not.
Trade Associations: These associations provide service and protection to the members. They may analyse the financial statements for the purpose of providing

facilities to these members. They may develop standard ratios and design uniform system of accounts.

Stock Exchange: The stock exchanges deal in purchase and sale of securities of different companies. The financial statements enable the stock brokers to judge the financial position of different concerns. The fixation of prices for securities, etc., is also based on these statements.

LIMITATIONS OF FINANCIAL STATEMENTS

The financial statements suffer from the following limitations:

1. **Only Interim Reports:** These statements do not give a final picture of the concern. The data given in these statements is only approximate. The actual position can only be determined when the business is sold or liquidated. So financial statements do not give the final picture and they are at the most interim reports.
2. **Do not give Exact Position:** The financial statements are expressed in monetary values, so they appear to give final and accurate position. The value of fixed assets in the balance sheet neither represents the value for which fixed assets can be sold nor the amount which will be required to replace these assets. The balance sheet is prepared on the presumption of a going concern. There are certain assets in the balance sheet such as preliminary expenses, goodwill, discount on issue of shares which will realise nothing at the time of liquidation though they are shown in the balance sheet.
3. **Historical Costs:** The financial statements are prepared on the basis of historical costs or original costs. The value of assets decreases with the passage of time current price changes are not taken into account The statements are not prepared keeping in view the present economic conditions. The conclusions drawn from financial statements may not give a fair picture of the concern.

4. **Impact of Non-monetary Factors Ignored:** There are certain factors which have a bearing on the financial position and operating results of the business^ but they do not become a part of these statements because they cannot be measured in monetary terms.
5. **No Precision:** The precision of financial statement data is not possible because the statements deal with matters which cannot be precisely stated.

QUESTIONS:

What is meant by the term management accounting?

1. Define management accounting.
2. What are the limitations of management accounting?
3. What are the objectives of management accounting?
4. Discuss the functions of management accounting.
5. Discuss the relationship between Management, Cost and financial Accounting.
6. What are financial statements?
7. Give three characteristics of ideal financial statements.
8. What are the limitations of financial statements?
9. What do you understand by financial statements? Discuss the nature of financial statements.
10. Describe various characteristics of Ideal Financial Statements.
11. What are financial statements ? Who are the parties interested in it?
12. Briefly discuss various financial statements.
13. What are the different types of financial statements ? State the advantages of each one of them?

****

UNIT II

FINANCIAL STATEMENTS ANALYSIS

MEANING AND CONCEPT OF FINANCIAL ANALYSIS

The term 'financial analysis', also known as analysis and interpretation of financial statements', refers to the process of determining financial strengths and weaknesses of the firm by establishing strategic relationship between the items of the balance sheet, profit and loss account and other operative data.

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."

The term 'financial statement analysis' includes both 'analysis', and “interpretation”. A distinct should, therefore, be made between the two terms While the term 'analysis' is used to mean the simplification of financial data by methodical classification of the data given in the financial statements, 'interpretation' means ‘explaining the meaning and significance of the data so simplified’. The term ‘Financial statement Analysis’ or simply 'Financial Analysis' to cover the meaning of both analysis and interpretation.

OBJECTIVES AND IMPORTANCE OF FINANCIAL STATEMENT ANALYSIS

1. To identify the reasons for change in profitability and financial position of the firm.
2. To make forecasts about future prospects of the firm.
3. To assess the progress of the firm over a period of time.
4. To assess the earning capacity or profitability of die firm.
5. To assess the operational efficiency and managerial effectiveness.

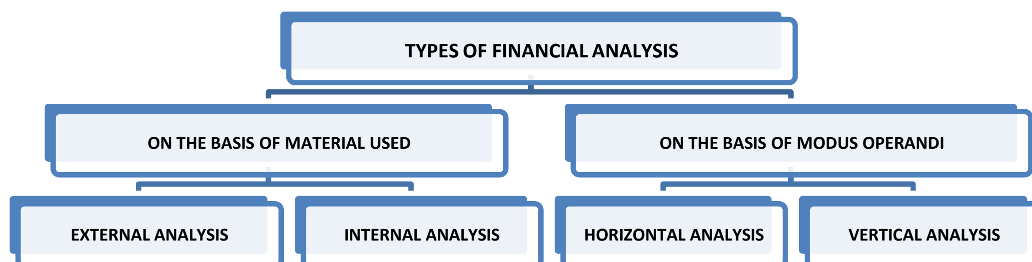
6. To assess the short term as well as long term solvency position of the firm.
7. To make inter-firm comparison.
8. To help in decision making and control.
9. To guide or determine the dividend action.
10. To provide important information for granting credit.

PARTIES INTERESTED IN FINANCIAL ANALYSIS

The following parties are interested in the analysis of financial statements :

1) Investors or potential investors.
2) Management
3) Creditors or suppliers.
4) Bankers and financial institutions.
5) Employees.
6) Government
7) Trade associations.
8) Stock exchanges.
9) Economists and researchers.
10) Taxation authorities

TYPES OF FINANCIAL ANALYSIS



1. **On the basis of material used:** According to material used, financial analysis can be of two types: i) External Analysis ii) Internal Analysis

i. **External Analysis:** This analysis is done by outsiders who do not have access to the detailed internal according records of the business firm. These outsiders include investors, potential investors, creditors, potential creditors, government agencies, credit agencies, and the general public. For financial analysis, these external parties to the firm depend almost entirely on the published financial statement.

ii. **Internal Analysis:** the analysis conducted by persons who have access to the internal accounting records of a business firm is known as internal analysis.

2. **On the basis of modus operandi:** According to the method of operation followed in the analysis, financial analysis can also be of two types: i) Horizontal analysis and ii) Vertical Analysis.

i. **Horizontal Analysis:** It refers to the comparison of financial data of a company for several years. The figures for this type of analysis are presented horizontally over a number of columns. The figures of the various years are compared with standard or base year. This type of analysis is also called "Dynamic Analysis" as it is based on the data from year to year rather than on data of any one year. Comparative statements and trend percentages are two tools employed in horizontal analysis.

ii. **Vertical Analysis:** it refers to the study of relationship of the various items in the financial statements of one accounting period. In theis types of analysis the figures from financial statement of a year are compared with a base selected from the same years statement. It is also known as 'Static Analysis'. Common – Size financial statements and financial ratio are the two tools employed in vertical analysis.

3. **On the basis of entities involved:** on the basis of entities involved in the analysis, financial analysis can also be of two types i) Cross sectional or Inter – firm analysis, and ii) Time series or Intar-firm analysis.

i. **Cross sectional or Inter-firm Analysis:** Cross sectional analysis involves comparison of financial data of a firm with other firm (competitors) or industry averages for the same time period.

ii. **Time series or Intar-firm Analysis:** Time series analysis involves the study of performance of the same firm over a period of time.

4. **On the basis of time horizon or objective of analysis:** On the basis of time horizon, financial analysis can be classified under two categories i) short-term analysis, and ii) long-term analysis.

i. **Short-term Analysis:** Short-term analysis measures the liquidity position of a firm, *i.e.* the short-term paying capacity of a firm or the firm's ability to meet its current obligations.

ii. **Long-term Analysis:** Long-term analysis involves the study of firm's ability to meet the interest costs and repayment schedules of its long-term obligation.

METHODS OR DEVICES OF FINANCIAL ANALYSIS

The following methods of analysis are generally used :

a) Comparative statements ;
b) Trend analysis ;
c) Common -size statements ;
d) Funds flow analysis ;
e) Cash flow analysis;
f) Ratio analysis ;
g) Cost-volume-profit analysis

1. COMPARATIVE STATEMENTS

The comparative financial statements are statements of the financial position at different periods; of time. The elements of financial position are shown in a comparative form so as to give an idea of financial position at two or more periods.

Any statement prepared in a comparative form will be covered in comparative statements. Two financial statements (balance sheet and income statement) are prepared in comparative form for financial analysis purposes. The comparative statement may show :

i. Absolute figures (rupee amounts).
ii. Changes in absolute figures *i.e.,* increase or decrease in absolute figures.
iii. Absolute data in terms of percentages.
iv. Increase or decrease in terms of percentages.

The two comparative statements are *(i)* Balance sheet and *(ii)* Income statement

COMPARATIVE BALANCE SHEET

The comparative balance sheet analysis is the study of the trend of the same items, group of items and computed items in two or more balance sheets of the same business enterprise on different dates.

Problems:

Following are the Balance sheet of Sundar Ltd. as on 30th June 2015 and 2016.

Liabilities	**2015**	**2016**	**Assets**	**2015**	**2016**
Share capital	100000	150000	Fixed assets	200000	300000
Reserves	100000	100000	Current assets	50000	80000
Loan	20000	80000			
Current liabilities	30000	50000			
	250000	380000		250000	380000
Prepare a comparative Balance Sheet.					

Comparative Balance Sheet of Sundar Ltd.

As on 30th June 2015 and 2016.

	Particulars	**2015**	**2016**	**Absolute change Rs.**	**Percentage change %**
A	Fixed assets:	200000	300000	100000	50
B	Work capital:				
	Current assets	50000	80000	30000	60
	Less: Current liabilities	30000	50000	20000	66.67
		20000	**30000**	**10000**	**50**
C	Capital Employed (A+B)	**220000**	**330000**	**110000**	**50**
D	Loan	20000	80000	60000	300
E	Shareholder's funds (C-D)	**200000**	**250000**	**50000**	**25**
	Represented by:				
F	Share capital	100000	150000	50000	50
G	Reserves	100000	100000	---	---
	Shareholder's funds (F+G)	**200000**	**250000**	**50000**	**25**

Comparative Income Statement:

The income statement gives the results of the operations of a business. The comparative income statement gives an idea of the progress of a business over a period of time. The changes in absolute data in money values and percentages can be determined to analyse the profitability of the business. Income statement also has four columns give figures of various items for two years. Third and fourth columns are used to show increase or decrease in figures in absolute amounts and percentages respectively.

Problem:

From the following information, prepare a comparative income statement of Java Ltd.

	2015	**2016**
Sales	120% of cost of goods sold	50% of cost of goods sold
Cost of goods sold	Rs. 2000000	Rs. 2500000
Indirect expenses		10% of gross profit
Rate of income tax		50% of net profit before tax

Solution:

Comparative Income Statement of Java Ltd.

Particulars	**2015**	**2016**	**Absolute change Rs.**	**Percentage %**
Sales	2400000	3750000	1350000	56.25
Less: cost of goods sold	2000000	2500000	500000	25.00
Gross profit	**400000**	**1250000**	**850000**	**212.50**
Less: Indirect expenses	40000	125000	85000	212.50
Profit before tax	**360000**	**1125000**	**765000**	**212.50**
Less: Income tax	180000	562500	382500	212.50
Profit after tax	**180000**	**562500**	**382500**	**212.50**

Problem:

The income statements of a concern are given for the year ending on 31st Dec, 2015 and 2016. Re-arrange the figures in a comparative form and study the profitability position of the concern.

	2015 Rs. (000)	**2016 Rs. (000)**
Net sales	785	900
Cost of goods sold	450	500
Operating Expenses:		

General and administrative expenses	70	72
Selling expenses	80	90
Non-operating Expenses :		
Interest paid	25	30
Income-tax	70	80

Solution:

Comparative Income Statement

For the year ended 31st Dec. 2015 and 2016

	31st December		**Increase (+) Decrease (-)**	**Increase (+) Decrease (-)**
	2015 **Rs. (000)**	2016 **Rs. (000)**	**Rs. (000)**	**(Percentage %)**
Net sales	785	900	+ 115	+14.65
Less: Cost of goods sold	450	500	+50	+11.00
Gross profit	**335**	**400**	**+65**	**+19.40**
Operating Expenses:				
General & Administrative Expenses	70	72	+2	+2.8
Selling Expenses	80	90	+10	+12.5
Total operating Expenses	**150**	**162**	**+12**	**+8.0**
Operating profit	185	238	+53	+28.65
Other deductions interest paid	25	30	+5	+20.00
Net profit before tax	**160**	**208**	**+48**	**+30.00**
Less: Income tax	70	80	+10	+14.30
Net profit after tax	**90**	**128**	**+38**	**+42.22**

TREND ANALYSIS

The financial statements may be analysed by computing trends of series of information. This method determines the direction upwards or downwards and involves the computation of the percentage relationship that each statement item bears to the same item in base year. The information for a number of years is taken up and one year, generally the first year, is taken as a base year. The figures of the base year are taken as 100 and trend ratios for other years are calculated on the basis of base year, The analyst is able to see the trend of figures, whether upward or downward. For example, if sales figures for the year 2003 to 2008 are to be studied, then sales of 2003 will be taken as 100 and the percentage of sales for all other years will be calculated in relation to the base year, i.e., 2003 Suppose the following trends are determined.

2003	100
2004	120
2005	110
2006	125
2007	135
2008	140

The trends of sales show that sales have been more in all the years since 2003. The sales have showing an upward trend except in 2005 when sales were less than the previous year 2004. A minute study of trends shows that rate of increase in sales is less in the years 2007 and 2008. The increase in sales is 15% in 2006. as compared to 2007 and increase is 10% in 2007 as compared to 2006 and 5% in 2008 as compared to 2007. Though the sales are more as compared to the base year but still the rate of increase has not been constant and requires a study by comparing these trends to other items like cost of production, etc.

COMMON-SIZE STATEMENT

The common-size statements, balance sheet and income statement, are shown in analytical percentages. The figures are shown as percentages of total assets, total liabilities and total sales. The total assets are taken as 100 and different assets are expressed as a percentage of the total. Similarly, various liabilities are taken as a part of total liabilities. These statements are also known as component percentage or 100 per cent statements because every individual item is stated as a percentage of the total 100.

COMMON-SIZE BALANCE SHEET

A statement in which balance sheet hems are expressed as the ratio of each asset to total assets and the ratio of each liability is expressed as a ratio of total liabilities is called common-size balance sheet For example, following assets are shown in a common-size balance sheet :

	Rs.	Percentage
Cash in hand and at bank	5000	2.50
Sundry debtors	20000	10.00
Stock	25000	12.50
Land and Buildings	50000	25.00
Plant and machinery	100000	50.00
Total assets	200000	100.00

The common-size balance sheet can be used to compare companies of differing size.

Illustration:

The Balance Sheets of Sundar & Co. and Kannan & Co. are given as follows:

Balance Sheets as Dec. 31st 2016

	Sundar & Co.	**Kannan & Co.**
Preference share capital	120000	160000
Equity share capital	150000	140000
Reserve & Surpluses	14000	18000
Long-term Loans	115000	130000
Bills Payable	2000	**---**
Sundry Creditors	12000	4000
Outstanding Expenses	15000	6000
Proposed Dividend	10000	90000
	438000	**808000**
Land and Building	80000	123000
Plant and Machinery	334000	600000
Temporary Investment	1000	40000
Inventories	10000	25000
Book-Debts	4000	8000
Prepaid Expenses	1000	2000
Cash and Blank Balances	8000	10000
	438000	**808000**

Solution:

COMMON SIZE BALANCE SHEET		
	SUNDAR & Co.	**KANNAN & Co.**

	Amount Rs.	%	Amount Rs.	%
Fixed Assets				
Land and Building	80,000	18.26	1,23,000	15.22
Plant and Machinery	3,34,000	76.26	6,00,000	74.62
Total Fixed Assets	**4,14,000**	**94.52**	**7,23,000**	**89.48**
Current Assets				
Temporary Investments	1,000	0.23	40,000	4.95
Inventories	10.000	2.28	25.000	3.08
Book Debts	4,000	0.91	8,000	0.99
Prepaid Expenses	1,000	0.23	2,000	0.25
Cash and Bank Balance	8,000	1.83	10,000	1.25
Total Current Assets	**24,000**	**5.48**	**85.000**	**10.52**
Total Assets	**4,38,000**	**100,00**	**8,08,000**	**100.00**
Share Capital and Reserves				
Preference Share Capital	1,20,000	27.39	1,60,000	19.80
Equity Share Capital	1,50,000	34.25	4,00,000	49,50
Reserves and Surpluses	14,000	3.19	18,000	2.23
Total Capital & Reserves	**2,84,000**	**64.83**	**5,78,000**	**71.53**
Long-term Loans	**1,15,000**	**26,25**	**1,30,000**	**16.09**
Current Liabilities				
Bills Payable	2,000	0.46	________	
Sundry Creditors	12,000	2.74	4.000	0.49
Outstanding Expenses	15,000	3.44	6,000	0.74
Proposed Dividend	10,000	228	90,000	11.15
	39,000	**8.92**	**1,00,000**	**12.38**

Total of Liability Side	4,38,000	100.00	8,08,000	100.00

COMMON SIZE INCOME STATEMENT

The items in income statement can be shown as percentages of sales to show the relation of each item to sales. A significant relationship can be established between items of income statement and volume of sales. The increase in sales will certainly increase selling expenses and not administrative or financial expense. In case the volume of sales increases to a considerable extent, administrative and financial expenses may go up. In case the sales are declining, the selling expenses should be reduced at once. So, a relationship is established between sales and other items in income statement and this relationship is helpful in evaluating operational activities the enterprise.

Illustration:

Following are the Income Statements of a company for the years ending Dec, 31,2006 and 2007.

	2016 Rs. '000	**2017 Rs. '000**
Sales	500	700
Miscellaneous Income	20	15
	520	**715**
Expenses:		
Cost of sales	325	510
Office expenses	20	25
Selling expenses	30	45
Interest	25	30
	400	**610**
Net profit	120	105

	520	**715**

Solution:

COMMON SIZE INCOME STATEMENT for the year ending Dec. 2016 and 2017				
	2016		**2017**	
	Rs. '000	**%**	**Rs. '000**	**%**
Sales	500	100.00	700	100.00
Less: Cost of sales	325	65.00	510	72.86
Gross Profit	**175**	**35.00**	**190**	**27.14**
Operating Expenses:				
Office expenses	20	4.00	25	3.58
Selling expenses	30	6.00	45	6.42
Total Operating Expenses	**50**	**10.00**	**70**	**10.00**
Operating Profit	125	25.00	120	17.14
Miscellaneous Income	20	4.00	15	2.14
Total income	**145**	**29.00**	**135**	**19.28**
Less: Non-operating expenses: Interest	25	5.00	30	4.28
Net profit	**120**	**24.00**	**105**	**15.00**

LIMITATIONS OF FINANCIAL ANALYSIS

1. As the financial statements are prepared on the basis of a going concern, it does not give exact position. Thus accounting concepts and conventions cause a serious limitation to financial analysis.
2. It is only a study of interim reports

3. Analysis is only a means and not an end in itself The analyst has to make interpretation and draw his own conclusions. Different people may interpret the same analysis in different ways.
4. Changes in accounting procedure by a firm may often make financial analysis misleading.
5. Financial analysis is based upon only monetary information and non-monetary factors are ignored.
6. It does not consider changes in price levels.

Questions:

1. What is 'financial analysis'?
2. What are the types of financial analysis ?
3. Compare horizontal and vertical analysis.
4. What is the procedure of analysis and interpretation of financial statements ?
5. Write a brief note on comparative statements.
6. What is trend analysis ?
7. Explain common-size statements.
8. What are the limitations of financial statement analysis ?
9. What is common-size balance sheet and income statement ?
10. State the different types of financial analysis and discuss the limitations of analysis and interpretation of financial statements.

RATIO ANALYSIS

MEANING OF RATIO

A ratio is a simple arithmetical expression of the relationship of one number to another. It may be defined as the indicated quotient of two mathematical expressions. According to Accountant's Handbook by Wixon, Kell and Bedford, a ratio "is an expression of the quantitative relationship between two numbers".

According to Kohler, a ratio is the relation, of the amount, *a,* to another, *b,* expressed as the ratio of ***a*** to *b;* ***a*** *: b (a* is to *b)* ; or as a simple fraction, integer, decimal, fraction or percentage." In simple language ratio is one number expressed in terms of another and can be worked out by dividing one number into the other. For example, if the current assets of a firm on a given date are 5,00,000 and the current liabilities are Rs. 2,50,000. Then the ratio of current assets to current liabilities will work out to be 500000 / 250000 or 2. A ratio can also be expressed as percentage by simply multiplying the ratio by 100.

Thus, the ratio of two figures 200 and 100 may be expressed in any of the following ways:

(a) 2 : 1 *(b)* 2 *(c)* 2/1 *(id)* 2 to 1 *(e)* 200%

NATURE OF RATIO ANALYSIS

"Ratio analysis is a technique of analysis and interpretation of financial statements. It is the process! of establishing and interpreting various ratios for helping in making certain decisions, However, ratio analysis is not an end in itself. It is only a means of better understanding of financial strengths and weaknesses of J firm. Calculation of mere ratios does not serve any purpose, unless several appropriate ratios are analysed and Interpreted.

USE AND SIGNIFICANCE OF RATIO ANALYSIS

The ratio analysis is one of the most powerful tools of financial analysis. It is used as a device to analyse and interpret the financial health of enterprise. Ratios have wide applications and are of immense use today.

Managerial Uses of Ratio Analysis

a) **Helps in decision-making:** Financial statements are prepared primarily for decision-making.
b) **Helps** in **financial forecasting and planning:** Ratio Analysis is of much help in financial forecasting and planning.
c) **Helps** in **communicating**: The financial strength and weakness of a firm are communicated in a more easy and understandable manner by the use of ratios.
d) **Helps in co-ordination**: Ratios even help in co-ordination which is of utmost importance in effective business management.
e) **Helps in Control**: Ratio analysis even helps in making effective control of the business.

Utility to Shareholders/Investors

An investor in the company will like to assess the financial position of the concern where he is going to invest His first interest will be, the security of his investment and then a return in the form of dividend of interest.

Utility to Creditors:

The creditors or suppliers extend short-term credit to the concern. They are interested to know whether financial position of the concern warrants their payments at a specified time or not.

Utility to Employees:

The employees are also interested in the financial position of the concern especially profitability. Their wage increases and amount of fringe benefits are related to the volume of profits earned by the concerns.

Utility to Government:

Government is interested to know the overall strength of the industry. Various financial statements published by industrial units are used to calculate ratios for determining short financial position of the concerns.

Tax audit requirements.

LIMITATIONS OF RATIO ANALYSIS:

1. **Limited Use of a Single Ratio:** "A single ratio, usually, does not convey much of a sense. To make better interpretation a number of ratios have to be calculated which is likely to confuse the analyst than help making any meaningful conclusion.

2. **Lack of adequate standards:** there are no well accepted standards or rules of thumb for all ratios which can be accepted as norms. It renders interpretation of the ratios difficult.

3. **Inherent Limitations of Accounting:** Like financial statements, ratios also suffer from the inherent weakness of accounting records such as their historical nature.

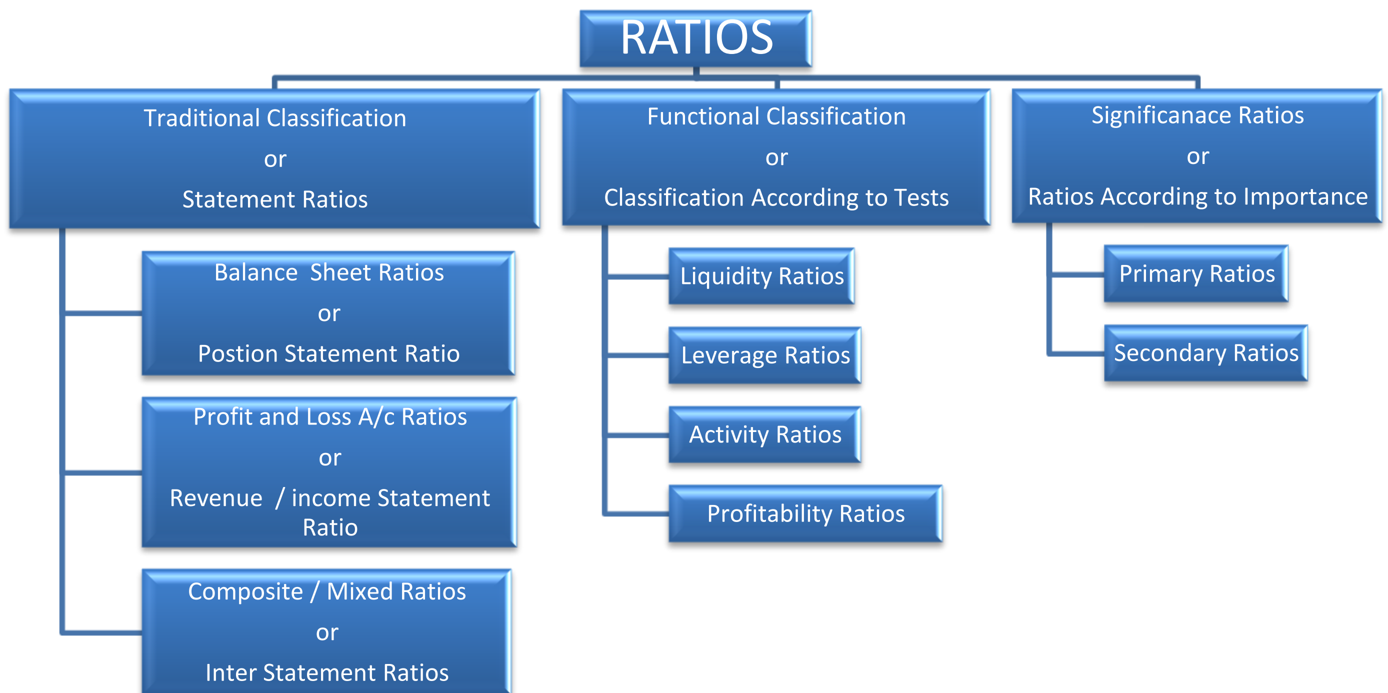
4. **Change of Accounting Procedure**: Change in accounting procedure by a firm often makes ratio analysis misleading.

5. **Window Dressing:** Financial statements can easily be window dressed to present a better picture of its financial and profitability position to outsiders.
6. **Personal Bias**: Ratio are only means of financial analysis and not an end in itself. Ratios have to be interpreted and different people may interpret the same ratio in different ways.
7. **Uncomparable:** Not only industries differ in their nature but also the firms of the similar business widely differ in their size and accounting procedures, etc. It makes comparison of ratios difficult and misleading.
8. **Absolute Figures Distortive:** Ratios devoid of absolute figures may prove distortive as ratio analysis is primarily a quantitative analysis and not a qualitative analysis.
9. **Price Level Changes:** While making ratio analysis, no consideration is made to the changes in price levels and this makes the interpretation of ratios invalid.
10. **Ratios no Substitutes:** Ratio analysis is merely a tool of financial statements. Hence, ratios become useless if separated from the statements from which they are computed.
11. **Clues not Conclusions:** Ratios provide only clues to analysts and not fmal conclusions. These ratios have to be interpreted by these experts and there are no standard rules for interpretation.

CLASSIFICATION OF RATIOS

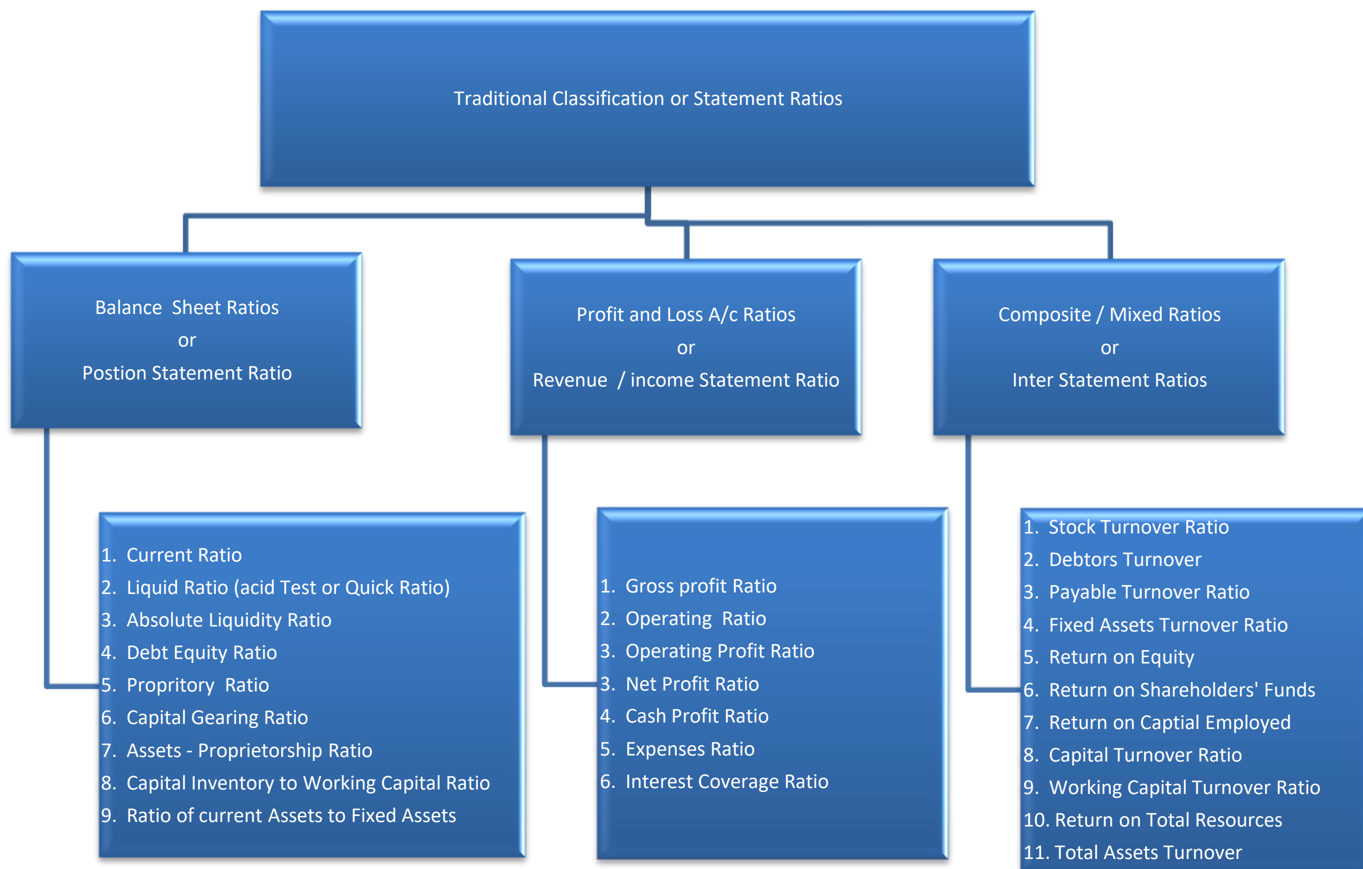
There are different parties interest in the ratio analysis for knowing the financial position of a firm for different purposes.

Various accounting ratios can be classified as follows :



Traditional Classification or Statement Ratios

Traditional classification or classification according to the statement, from which these ratios are calculated, is as follows :



Balance Sheet or Position Statement Ratios: Balance Sheet ratios deal with the relationship between two balance sheet items, *e.g.* the ratio of current assets to current liabilities, or the ratio of proprietors' funds to fixed-assets.

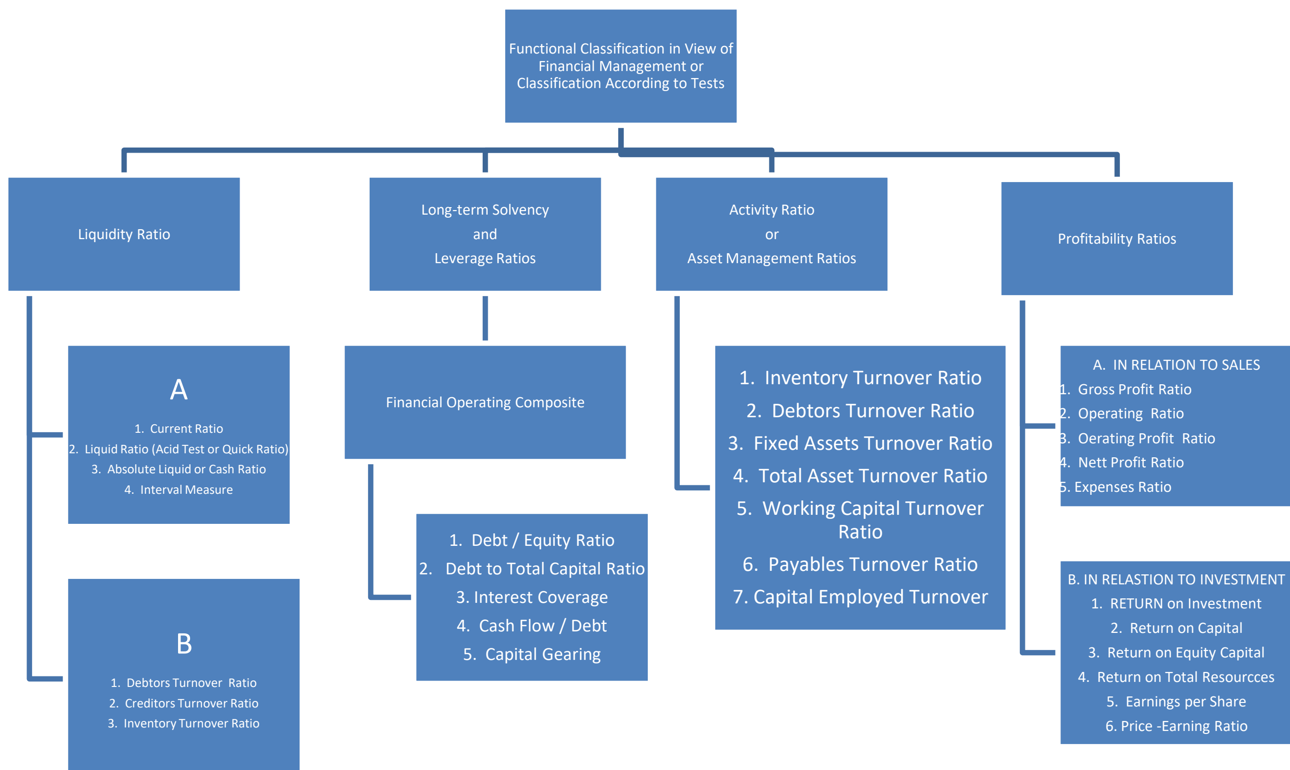
Profit and Loss Account or Revenue/Income Statements Ratios: These ratios deal with the relationship between two profit and loss account items, *e.g.,* the ratio of gross profit to sales, or the ratio of net profit to sales.

Composite/Mixed Ratios or Inter Statement Ratios: These ratios exhibit the relation between a profit and loss account on income statement item and a balance sheet item, *e.g.,* stock turnover ratio, or the ratio of total assets to sales.

Functional Classification or Classification According to Tests

Liquidity Ratios: These are the ratios which measure the short-term solvency or financial position of a firm: These ratios are calculated to comment upon the short-term paying capacity of a concern or the firm's ability to meet its current obligations. The various liquidity ratios are: current ratio, liquid ratio and absolute liquid ratio.

Long-term Solvency and Leverage Ratios: Long-term solvency ratios convey a firm's ability to meet the interest costs and repayments schedules of its long-term obligations *e.g.* Debt Equity Ratio and Interest Coverage Ratio.



The leverage ratios can further be classified as :

a) Financial Leverage,

b) Operating Leverage,

c) Composite Leverage.

Activity Ratios. Activity ratios are calculated to measure the efficiency with which the resources of a firm have been employed. These ratios are also called *turnover ratios.*

Profitability Ratios: These ratios measure the results of business operations or overall performance! and effectiveness of the firm, *e.g.,* gross profit ratio, operating ratio or return on capital employed.

ANALYSIS OF SHORT-TERM FINANCIAL POSITION OR TEST OF LIQUIDITY

The short-term creditors of a company like suppliers of goods of credit and commercial banks providing short-term loans, are primarily interested in knowing the company's ability to meet its current or short-term obligations as and when these become due. The short-term obligations of a firm can be met only when there are sufficient liquid assets. Therefore, a firm must ensure that it does not suffer from lack of liquidity or the capacity to pay its current obligations. Two types of ratios can be calculated for measuring short-term financial position or short-term solvency of a firm.

(A) Liquidity Ratios

(B) Current Assets Movement or Efficiency Ratios.

LIQUIDITY RATIOS

Liquidity refers to the ability of a concern to meet its current obligations as and when these become due. The short-term obligations are met by realising amounts from current, floating or circulating assets. These should be convertible into cash for paying obligations of short-term nature. If current assets can pay off current liabilities, then liquidity position will be satisfactory. On the other hand, if current liabilities may not be easily met out of current assets en liquidity position will be bad.

The following ratios can be calculated:

i. Current Ratio

ii. Quick or Acid Test or Liquid Ratio

iii. Absolute Liquid Ratio or Cash Position Ratio

CURRENT RATIO

Current ratio may be defined as the relationship between current assets and current liabilities. This ratio, also known as working capital ratio, is a measure of general liquidity and is most widely used to make the analysis of a short-term financial position or liquidity of a firm. It is calculated by dividing the total of current assets by total of the current liabilities.

Current Ratio = Current Assets / Current Liabilities

Or Current Assets : Current Liabilities

The two basic *components* of this ratio are : current assets and current liabilities. *Current assets include* cash and those assets which can be easily converted into cash within a short period of time generally, one year/ such as marketable securities, bills receivables, sundry debtors, inventories, work-in-progress, etc. Prepaid expenses should also be included in current assets because they represent payments made in advance which will not have to be paid in near future. *Current Liabilities* are those

obligations which are payable within a short period of generally one year and include outstanding expenses, bills payables, sundry creditors, accrued expenses, short-term advances, income-tax payable, dividend payable, etc. *Bank overdraft.*

COMPONENTS OF CURRENT RATIO		
Sl.No.	***Current Assets***	***Current Liabilities***
1	Cash in Hand	Outstanding Expenses/Accrued Expenses
2	Cash at Bank	Bills Payable
3	Marketable Securities (Short-term)	Sundry Creditors
4	Short-term Investments	Short-term Advances
5	Bills Receivable	Income-tax Payable
6	Sundry Debtors	Dividends Payable
7	Inventories (stocks)	*Bank Overdraft* (if not a permanent arrangement)
8	Work-in-process	
9	Prepaid Expenses	

As a convention the minimum of *'two to one ratio'* is referred to as a *banker's rule of thumb* or arbitrary standard of liquidity for a firm. A ratio equal or near to the rule of thumb of 2 : 1 *i.e.,* current assets double the current liabilities is considered to be satisfactory.

SIGNIFICANCE AND LIMITATIONS OF CURRENT RATIO

Current ratio is a general and quick measure of liquidity of a firm. It represents the 'margin of safety' or cushion' available to the creditors and other current liabilities. It is

most widely used for making short-term analysis of the financial position or short-term solvency of a firm.

Current Ratio: It is a crude ratio because it measures only the quantity and not the quality of Current assets.

Window Dressing: Valuation of current assets and *window dressing* is another problem of current. Current assets and liabilities are manipulated in such a way that current ratio loses its significance. Window dressing may be indulged in the following ways: Over-valuation of closing stock.

Calculation of Current Ratio:

This ratio is calculated by comparing current assets with current liabilities. Take for example, current assets of a concern as Rss.250000 and current liabilities as Rs. 100000; current ratio will be calculated as follows:

Current Ratio = Current Assets / Current Liabilities

Current Ratio = 250000 / 100000 = 2.5

The current ratio of 2.5 means that current assets are 2.5 times of current liabilities. This ratio can also be presented as 2.5 :1. In current ratio, current liabilities are taken as 1 and current assets are given in comparison to it.

Illustration

Calculate current ratio from the following information :

	Rs.		Rs.
Stock	60,000	Sundry Creditors	20,000
Sundry Debtors	70,000	Bills Payable	15,000
Cash Balances	20,000	Tax Payable	18,000
Bills Receivables	30,000	Outstanding Expenses	7,000

Prepaid Expenses	10,000	Bank Overdraft	25,000
Land and Building	1,00,000	Debentures	75,000
Goodwill	50,000		

Solution:

Current Ratio = Current Assets / Current Liabilities

Current Assets = Rs. 60,000 + 70,000 + 20,000 + 30,000 + 10,000 = Rs. 1,90,000

Current Liabilities = Rs. 20,000 + 15,000 + 18,000 + 7,000 + 25,000 = Rs. 85,000

Current Ratio = 1,90,000 / 85,000 = 2.24:1

QUICK OR ACID TEST OR LIQUID RATIO

Quick Ratio, also known as Acid Test or Liquid Ratio, is a more rigorous test of liquidity than the current ratio. The term 'liquidity' refers to the ability of a firm to pay its short-term obligations as and when they become due. Quick ratio may be defined as the relationship between quick/liquid assets and current or liquid liabilities.

Quick / Liquid or Acid Test Ratio = Quick or Liquid Assets / Current Liabilities

Components of Quick/Liquid Ratio	
Quick/Liquid Assets	*Current Liabilities*
Cash in hand Cash at bank Bills receivables Sundry debtors Marketable securities	Outstanding or accrued expenses Bills payable Sundry creditors Short-term advances (payable shortly) Income-tax payable

Temporary investments	Dividends payable Bank overdraft

Quick assets can also be calculated as:

Current Assets-(Inventories +Prepaid Expenses)

Quick/Acid Test / Liquid Ratio = Liquid Assets / Current Liabilities

Quick / Liquid or Acid Test Ratio = Quick or Liquid Assets / Current Liabilities

=200000/150000 = 1.33:1

Interpretation of Quick Ratio

Usually, a high acid test ratio is an indication that the firm is liquid and has the ability to meet its current or liquid liabilities in time and on the other hand a low quick ratio represents that the firm's liquidity position is not good. As a rule of thumb or as a convention quick ratio of 1 : 1 is considered satisfactory.

Significance of Quick Ratio: The quick ratio is very useful in measuring the liquidity position of a firm It measures the firm's capacity to pay off current obligations immediately and is a more rigorous test of liquidity than the current ratio. It is used as a complementary ratio to the current ratio.

ABSOLUTE LIQUID RATIO OR CASH RATIO

Absolute Liquid Ratio = Absolute Liquid Assets / Current Liabilities

OR

Cash Ratio = Cash & Bank + Short-term Securities / Current Liabilities

Absolute Liquid Assets include cash in hand and at bank and marketable securities or temporary investments. The acceptable norm for this ratio is 50% or 05:1 or 1:2 i.e.

Problem:

The following is the balance sheet of New India Ltd., for the year ending 31st Dec. 2016.

	Rs.		Rs.
9% Preference Share Capital	500000	Goodwill	100000
Equity Share Capital	1000000	Land and Building	650000
8% Debentures	200000	Plant	800000
Long-term Loan	100000	Furniture & Fixture	150000
Bills Payable	60000	Bills Receivables	70000
Sundry Creditors	70000	Sundry Debtors	90000
Bank Overdraft	30000	Bank Balance	45000
Outstanding Expenses	5000	Short-term Investments	25000
		Prepaid expenses	5000
		Stock	30000
	1965000		**1965000**

From the balance sheet calculate

(a) Current Ratio

(b) Acid Test Ratio

(c) Absolute Liquid Ratio

Solution:

a) Current Ratio = Current Assets / Current Liabilities

Current Assets = Rs. 70000 + Rs. 90000 + Rs. 45000 + Rs. 25000 + Rs.5000 + Rs. 30000 = Rs. 265000

Current Liabilities = Rs. 60000 + Rs. 70000 + Rs. 30000 + Rs. 5000 = Rs. 165000

Current Ratio = 265000 / 165000 = 1.61

b) *Acid Test Ratio = Liquid Assets / Current liabilities*

Liquid Assets = Rs. 70000 + Rs. 90000 + Rs. 45000 + Rs. 25000 = Rs. 230000

Stock and prepaid Expenses have been excluded from current assets in order to arrive at liquid assets.

Current Liabilities = Rs. 165000

Acid Test Ratio = Rs. 230000 / Rs. 165000 = 1.39

c) *Absolute Liquid Ratio = Absolute Liquid Ratio / Current Liabilities*

Absolute Liquid Assets = Rs. 45000 + Rs. 25000 = Rs. 70000

Absolute Liquid Ratio = 70000 / 165000 = 0.42

Problem:

The following information of a company is given :

Current Ratio, 2.5 : 1 : Acid-test ratio, 1.5 : 1; Current liabilities Rs. 50000

Find out:

(a) Current Assets

(b) Liquid Assets

(c) Inventory.

Solution:

a) *Current Ratio = Current Assets / Current Liabilities*

2.5 = Current assets / Rs. 50000

Current Assets = 50000 x 2.5 = Rs. 125000

b) *Acid Test Ratio = Liquid Assets / Current liabilities*

1.5 = Liquid Assets / Rs. 50000

Liquid Assets = 50000 x 1.5 = Rs. 75000

c) *Inventory = Current Assets – Liquid Assets*

= Rs. 125000 – Rs. 75000 = Rs. 50000

Problem:

Given:

Current Ratio = 2.8

Acid –test Ratio = 1.5

Working Capital = Rs. 1,62,000

Find out:

a) Current Assets
b) Current Liabilities
c) Liquid Assets

Solution:

Working Capital = Current Assets- Current Liabilities

1,62,000 =2.8x-1.0x

1,62,000 = 1.8x

Or , X Current liabilities = 162000 / 1.8 = Rs. 90,000

Current assets = 90,000x2.8 = Rs. 252000

Acid Test Ratio = Liquid Assets / Current Liabilities

1.5 = Liquid Assets / 90000

Liquid assets = 90000 x 1.5 = Rs. 135000

INVENTORY TURNOVER OR STOCK TURNOVER RATIO

Every firm has to maintain a certain level of inventory of finished goods so as to be able to meet the requirements of the business. But the level of inventory should neither be too high nor too low. It will therefore, be advisable to dispose of inventory as early as possible. On the other hand, too low inventory may mean loss of business opportunities. Thus, it is very essential to keep sufficient stocks in business.

Inventory Turnover Ratio = Cost of Goods Sold / Average Inventory at Cost

Problem:

The cost of goods sole of E.S.P. Limited is Rs. 5,00,000. The opening stock/inventory is Rs. 40,000 and the closing inventory is Rs. 60,000 (at cost). Find out inventory turnover ratio.

Inventory Turnover Ratio = Cost of Goods Sold / Average Inventory at Cost

= 500000/ 40000 + 60000 / 2 = 500000 / 50000 = 10 times

Problem:

If Inventory Turnover Ratio is 5 times and average stock at cost is Rs. 75000, find out cost of goods sold.

Solution:

Inventory Turnover Ratio = Cost of Goods Sold / Average Inventory at Cost

5 = Cost of Goods Sold / Rs. 75000

Cost of Goods Sold = 75000 x 5 = Rs. 375000

Interpretation of Inventory Turnover Ratio

Inventory turnover ratio measures the velocity of conversion of stock into sales. Usually, a high inventory turnover/Stock *velocity* indicates efficient management of inventory because more frequently the stocks are sold, the lesser amount of money is required to finance the inventory. A low inventory turnover ratio indicates an inefficient management of inventory.

Illustration

Determine the sales of a firm with the following financial data :

Current ratio	1.5
Acid test ratio	1.2
Current liabilities	Rs. 400000
Inventory turnover ratio	5 times

Solution:

Current Ratio = Current Assets / Current Liabilities

1.5 = Current assets / 400000

Current Assets = 400000 x 1.5 = Rs. 600000

Acid Test Ratio = Liquid Assets / Current Liabilities

1.2 = Liquid Assets / 400000

Liquid Assets = 400000x 1.2 = Rs. 480000

Inventory = Current Assets – Liquid Assets

= Rs. 600000 – Rs. 480000 = Rs. 120000

Inventory Turnover Ratio = Sales / Inventory

5 = Sales / 120000

Sales = 120000 x 5 = Rs. 600000

DEBTORS OR RECEIVABLE TURNOVER RATIO AND AVERAGE COLLECTION PERIOD

A concern may sell goods on cash as well as on credit. Credit is one of the important elements of sales promotion. The volume of sales can be increased by following a liberal credit policy.

Two kinds of ratios can be computed to evaluate the quality of debtors:

a) Debtors/Receivables Turnover or Debtors Velocity

Debtors turnover ratio indicates the velocity of debt collection of firm. In simple words, it indicates the number of times average debtors (Receivables) are turned over during a year, thus:

Debtors (Receivables) Turnover/Velocity = Net Credit Annual Sales / Average Trade Debtors
= No. of Times

Trade Debtors = Sundry Debtors + Bills Receivables and Accounts Receivables

Average Trade Debtors = Opening Trade Debtors + Closing Trade Debtors / 2

Interpretation of Debtors Turnover/Velocity

Debtors velocity indicates the number of times the debtors are turned over during a year. Generally, the higher the value of debtors turnover the more efficient is the management of debtors/sales or more liquid are the debtors.

b) Average Collection Period Ratio

The average collection period represents the average number of days for which a firm has to wait before its receivables are converted into cash. The ratio can be calculated as follows:

Average Collection Period = Average Trade Debtors (Drs + B/R) / Sales per day
= Average Trade Debtors x No. of Working Days / Net sales

Illustration:

Find out a) Debtors Turnover, and B) average Collection period from the following information:

	31st March 2015 Rs.	31st March 2016 Rs.
Annual credit sales	500000	600000
Debtors in the beginning	80000	100000
Debtors at the end	100000	120000

Days to be taken for the year : 360.

Solution:

Average Debtors	= Opening Debtors + Closing Debtors / 2	
Debtors Turnover	Net Credit Annual Sales / Average Debtors	
	Year 2007	**Year 2008**
Average Debtors	80,000+1,00,000 / 2	1.00,000+1,20,000 / 2
	= Rs. 90,000	Rs. 1,10,000
(a) Debtors Turnover	5,00,000 / 90,000	6,00,000 / 1,10,000
	5.56 times	5.45 times
(b) Average Collection Period	No. of Working Days / Debtors Turnover	
	Year 2007	**Year 2008**
Average Collection Period	= 360 / 5.56	360 / 5.45
	= 64.7 days = 65 days (approximately)	= 66.05 days = 66 days (appx.)

CREDITORS/PAYABLES TURNOVER RATIO

The analysis for creditors turnover is basically the same as of debtors turnover ratio except that in place of trade debtors, the trade creditors are taken as one of the components of the ratio and in place of average daily sales, average daily purchases are taken as the other component of the ratio. Same as debtors turnover ratio, creditors turnover ratio can be calculated in two forms:

CREDITORS/PAYABLES TURNOVER RATIO =

Net Credit Annual Purchases / Average Trade Creditors

AVERAGE PAYMENT PERIOD RATIO=

Average Trade Creditors (Creditors + Bills Payable) / Average Daily Purchases

AVERAGE DAILY PURCHASES = Annual Purchases / No. of Working Days in a Year

AVERAGE PAYMENT PERIOD = Trade Creditors x No. of Working Days / Net Annual Purchases

Illustration:

From the following information calculate creditors turnover ratio average payment period:

Total purchases	400000
Cash purchases (included in above)	50000
Purchase returns	20000
Creditors at the end	60000
Bills payable at the end	20000
Reserve for discount on creditors	5000
Take 365 days in a year	5000

Solution:

CREDITORS TURNOVER RATIO = Annual Net Purchases / Average Trade Creditors

	Rs.
Net Credit purchases	
Total purchases	400000
Less: Cash purchases	50000
	350000
Less: Returns	20000
	330000

Creditors Turnover Ratio = 330000 / 60000 + 20000

(Trade creditor include creditors and bills payable)

= 330000 / 80000 = 4.13 times

AVERAGE PAYMENT PERIOD = No. of Working Days / Creditors Turnover Ratio

= 365 / 4.13 = 88 Days

Alternatively:

AVERAGE PAYMENT PERIOD = 60000 + 20000 / 330000 x 365

= 80000 / 330000 x 365 = 88 Days

WORKING CAPITAL TURNOVER RATIO

Working capital of a concern is directly related to sales. The current assets like debtors, bills receivables, cash, stock etc. change with the increase or decrease in sales. the working capital is taken as :

Working Capital = Current assets - Current Liabilities

Working Capital turnover ratio indicates the velocity of the utilisation of net working capital. This ratio indicates the number of times the working capital is turned over in the course of a year.

Working Capital Turnover Ratio=Cost of Sales / Average Working Capital
Average Working Capital = Opening Working Capital +Closing Working Capital \ 2
Working Capital Turnover Ratio= Cost of Sales (or, Sales) / Net Working Capital

Illustration

Find out working capital turnover ratio :

	Rs.
Cash	10,000
Bills Receivables	5,000
Sundry Debtors	25,000
Stocks	20,000
Sundry Creditors	30,000
Cost of Sales	1,50,000

Solution

Working Capital Turnover Ratio = Cost of Sales / Net Working Capital

Current assets = Rs. 10,000 + 5,000 + 25,000 + 20,000

= Rs. 60,000

Current liabilities =30,000

Net working capital = CA - CL = Rs. 60,000 -30,000

= Rs.30,000

So, Working Capital Turnover Ratio = 1,50,000 / 30000 = 5 Times.

Illustration

The following information is given about M/s. S.P. Ltd. for the year ending Dec. 31, 2017

i.	Stock turnover ratio	= 6 times
ii.	Gross profit ratio	= 20% on sales
iii.	Sales for 2007	=Rs. 3,00,000
iv.	Closing stock is Rs. 10,000 more than the opening stock	
v.	Opening creditors	= Rs. 20,000
vi.	Closing creditors	=Rs. 30,000
vii.	Trade debtors at the end	= Rs. 60,000
viii.	Net Working Capital	=Rs. 50,000

Find out :

a) Average Stock

b) Creditor Turnover Ratio

c) Purchases

d) Average Collection period

e) Average Payment Period

f) Working Capital Turnover Ratio

Solution:

Cost of goods sold = Sales – Gross Profit

= 300000 - (20% of sales)

= 300000 – 60000

= Rs. 240000

Average Stock:

Stock Turnover Ratio = Cost of goods sold / Average Stock

6 = 240000 / Average Stock

Average Stock = 240000 / 6 = Rs. 40000

Calculation of Purchases:

Cost of goods sold = Opening Stock + purchases – Closing stock

Purchases = Cost of goods sold + Closing Stock - Opening stock

Average Stock = Opening Stock + Closing stock / 2

Since, Closing stock is Rs. 10000 more than the opening stock so,

Rs. 40000 = Opening Stock + (Rs. 10000 + opening stock) / 2

Rs. 80000 = 2 Opening stock + Rs. 10000

Opening stock = 70000 / 2 = Rs. 35000

Closing stock = 35000+10000 = 45000

Purchases = 240000 + 45000 + 35000 = 250000

Credit Turnover Ratio = Net annual Credit Purchases / Average Trade Creditors

All purchases are taken as credit purchases = 250000 / (20000+30000 / 2)

Credit turnover ratio = 250000 / 25000 = 10 Times

Average Payment Period = Average Trade Creditors x No. of Working days/ Net Annual Purchases

= 25000 / 250000 x 365 = 36.5 days or 37 days

Average collection period = Average Trade Debtors xx No. of Working Days / Net Annual Sales

= 60000 x 365 / 300000 = 73 Days

Working Capital Turnover Ratio = Cost of Goods Sold / Net Working Capital

= 240000 / 50000 = 4.8 times.

ANALYSIS OF LONG-TERM FINANCIAL POSITION OR TESTS OF SOLVENCY

The term 'solvency' refers to the ability of a concern to meet its long term obligations. The long-term indebtedness of a firm includes debenture holders, financial institutions providing medium and long-term loans and other creditors selling goods on instalment basis.

ANALYSIS OF LONG-TERM FINANCIAL POSITION OR TEST OF SOLVENCY	
(a)	Capital Structure Ratios
1	Debt-Equity Ratio.
2	Funded-Debt to Total Capitalisation Ratio.
3	Proprietory Ratio or Equity Ratio.)
4	Solvency Ratio or Ratio of Total Liabilities to Total Assets.
5	Fixed Assets to Net Worth or Proprietor's Funds Ratio.

DEBT-EQUITY RATIO

Debt-Equity Ratio, also known as *External -Internal Equity Ratio* is calculated to measure the relative claims of outsiders and the owners *(i.e.,* shareholders) against the firm's assets. This ratio indicates the relationship between the external equities or the outsiders funds and the internal equities or the shareholders' funds, thus :

Debt- Equity Ratio = Outsiders Funds / Shareholders' Funds
or
Debt to Equity Ratio =External Equities / Internal Equities

The two basic *components* of the ratio are outsiders' funds, *i.e.,* external equities and shareholders' funds, *i.e.,* internal equities. The outsiders' funds include all debts/liabilities to outsiders.

Long-term Debt to Shareholders' Funds (Debt-Equity Ratio) =
Long term Debt / Shareholders

Illustration

Liabilities	Rs.	Assets	Rs.
2,000 Equity Shares of Rs. 100 each	200000	Fixed Assets	400000
1,000 9% Preference Shares of Rs. 100 each	100000	Current Assets	200000
1,000 10% Debentures of Rs. 100 each	100000		
Reserves:			
General Reserve	50000		
Reserves for contingencies	50000		
Current liabilities	100000		

Calculate Debt-Equity Ratio.

Solution

Debt – Equity Ratio= Outsiders' Fund / Shareholders' Funds

= 100000 (Debentures) + 100000(Current Liabilities) / 200000 +100000+50000+50000

= 200000 / 400000 = 1:2

Debt Equity Ratio = Long term Debt / Shareholders' Funds

= 100000 / 400000 = 1:4

Interpretation of Debt-Equity Ratio

The debt-equity ratio is calculated to measure the extent to which debt financing has been used a business. The ratio indicates the proportionate claims of owners and the outsiders against the firm's assets.

PROPRIETORY RATIO OR EQUITY RATIO

A variant to the debt-equity ratio is the proprietary ratio which is also known as equity ratio or shareholders to total equities ratio or net worth to Total asset ratio. This ratio establishes the relationship between shareholders' funds to total assets of the firm. The ratio of proprietors' funds to total funds proprietors outsiders' funds or total funds or total assets is an important ratio for determining long-term solvency of a firm.

Proprietory Ratio or Equity Ratio = Shareholder's Funds / Total Assets

If shareholder's funds are Rs. 4,00,000 and total assets are Rs. 6,00,000.

Proprietory Ratio or Equity Ratio = 400000 / 600000 = 2.3

Interpretation of Equity Ratio

As equity ratio represents the relationship of owner's funds to total assets, higher the ratio or the share of the shareholders in the total capital of the company, better is the long-term solvency position of the company.

SOLVENCY RATIO OR THE RATIO OF TOTAL LIABILITIES TO TOTAL ASSETS

This ratio is a small variant of equity ratio and can be simply calculated as 100-equity ratio, *i.e.,* continuing the example taken for the equity ratio, solvency ratio = 100 - 66.67 or say 33.33%. The ratio indicates the relationship between the total liabilities to outsiders to total assets of a firm and can be calculated as follows:

Solvency Ratio = Total Liabilities to Outsiders / Total Assets

If the total liabilities to outsiders are Rs. 2,00,000 and total assets are Rs. 6,00,000, then

Solvency Ratio = 200000 / 600000 x 100=33.33%

FIXED ASSETS TO NET WORTH RATIO OR FIXED ASSETS TO PROPRIETOR'S FUNDS

The ratio establishes the relationship between fixed assets and shareholder's funds, *i.e.,* share capital plus reserves, surpluses and retained earnings. The ratio can be calculated as follows:

Fixed Assets to Net Worth Ratio =

Fixed Assets (After Depreciation) / Shareholders' Funds

Thus, where the deprecated book value of fixed asset is Rs. 400000 and shareholders' funds are also Rs. 400000 the ratio of fixed assets to net worth / proprietors' funds represented in terms of percentage would be

= 400000 / 400000 x 100 = 100%

ANALYSIS OF PROFITABILITY OR PROFITABILITY RATIOS

The various profitability ratios are discussed below:

(A) GENERAL PROFITABILITY RATIOS

The following ratios are known as general profitability ratios :

1) Gross Profit Ratio
2) Operating Ratio
3) Operating Profit Ratio
4) Expenses Ratio
5) Net Profit Ratio

GROSS PROFIT RATIO

Gross profit ratio measures the relationship of gross profit to net sales and is usually represented as a percentage. Thus, it is calculated by dividing the gross profit by sales :

Gross Profit Ratio = Gross Profit / Net Sales x 100

= Sales - Cost of Goods Sold / Sales x 100

Illustration

Calculate, Gross Profit Ratio :

Solution :

Gross Profit Ratio = Gross Profit / Net Sales x 100

Net sales = Total sales – Sales returns

= Rs. 520000 – 20000 = Rs. 500000

Gross Profit = Net Sales – Cost of Goods Sold

Rs. 500000 -400000 = Rs. 100000

Gross Profit Ratio = 100000 / 500000 x 100 20%

Interpretation of Gross Profit Ratio

The gross profit indicates the extent to which selling prices of goods per unit may decline without resulting in losses on operations of a firm.

OPERATING RATIO

Operating ratio establishes the relationship between cost of goods sold and other operating expenses on the one hand and the sales on the other.

Operating Ratio = Operating Cost / Net Sales X 100

= Cost of goods sold + operating expenses / Net sales x 100

Illustration

Find out operating Ratio:

	Rs.
Cost of goods sold	350000
Selling and distribution Expenses	20000
Administrative & office Expenses	30000
Net sales	500000

Solution:

OPERATING RATIO = = Cost of goods sold + operating expenses / Net sales x 100

= 3,50,000+20,000+30,000 / 500000 X 100

= 400000 / 500000 x 100 = 80%

Interpretation of Operating Ratio

Operating ratio indicates the percentage of net sales that is consumed by operating cost.

OPERATING PROFIT RATIO

This ratio is calculated by dividing operating profit by sales. Operating profit is calculated as:

Operating Profit = Net Sales-Operating Cost

or= Net Sales-(Cost of goods sold + Administrative and Office Expenses + Selling and Distributive Expenses)

Operating Profit can also be calculated as :

Operating Profit = Net Profit + Non-operating Expenses - Non-operating income

So, Operating Profit Ratio = Operating profit / sales x 100

This ratio can also be calculated as :

Operating Profit Ratio = 100-Operating Ratio.

Illustration

From the information given below, calculate operating profit ratio

Cost of Goods Sold = Rs. 4,00,000

Administrative & Office Expenses = Rs. 35,000

Selling & Distributive Expenses =Rs. 45,000

Net Sales= Rs. 6,00,000.

Solution:

Operating Profit Ratio = Operating Profit / Net Sales x 100

Operating Profit = Sales - (Cost of goods sold + Administrative Office expenses+ Selling & Distributive Expenses)

=Rs. 6,00,000-(Rs. 4,00,000+Rs. 35,000+Rs. 45,000)=Rs. 1,20,000

Operating profit ratio = 120000 / 600000 x 100 = 20%

EXPENSES RATIOS

Expenses ratios indicate the relationship of various expenses to net sales. The operating ratio re the average total variations in expenses.

Cost of goods sold ratio = Particular Expenses / Net Sales x 100
Administrative & Office Expenses Ratio
= Administrative & Office Expenses / Sales x 100
Selling & Distributive Expenses Ratio = selling & Distributive Expenses / Sales x 100
Non-Operating Expenses Ratio = Non-Operating Expenses / Sales x 100

NET PROFIT RATIO

Net Profit ratio establishes a relationship between net profit (after taxes) and sales, and indicates the efficiency of the management m manufacturing, selling, administrative and other activities of the firm This ratio is the overall measure of firm's profitability and is calculated as:

Net Profit Ratio = Net Profit After Tax / Net Sales x 100

Net profit Ratio = Net Operating Profit / Net Sales x 100

Illustration:

Following is the Profit and Loss Account to Royal Matrix Ltd. for the ended 31st December 2016.

Dr.	***Rs.***	***Cr.***	***Rs.***
To Opening stock	100000	By Sales	560000
To Purchases	350000	By Closing stock	100000
To Wages	9000		
To Gross profit c/d	201000		
	660000		**660000**
To Administrative expenses	20000	By Gross profit b/d	201000
To Selling and distribution expenses	89000	By Interest on investments (outside business)	1000
To Non-operating expenses	30000	By Profit on sales of investments	8000
To Net profit	80000		
	219000		**219000**

You are required to calculate:

1. Gross profit Ratio

2. Net profit Ratio
3. Operating Ratio
4. Operating profit Ratio
5. Administrative Expenses Ratio.

Solution:

1. **Gross profit = Gross profit / Net sales x 100**

   = 201000 / 560000 x 100 = 35.9%

2. **Net profit ratio = Net profit (after tax) / Net sales x 100**

   = 80000 / 560000 x 100 = 14.3%

   Alternatively, Net Profit Ratio = Net operating profit /Net sales x 100

   = (80000 + 30000) – (10000 + 8000)/ 560000 x 100

   = 92000 / 560000 x 100 = 16.4%

3. **Operating Ratio = Cost of goods sold + operating Exp. / Net sales**

   Cost of goods sold = Op. stock + Purchases + Wages - Closing Stock

   = 100000+350000 + 9000 – 100000 = Rs. 359000

   Operating Expenses = Administrative + Selling & Distribution Exp.

   = 20000 + 89000 = 109000

   Operating Ratio = 359000 + 109000 / 560000 x 100 = 83.6%

4. **Operating profit Ratio = 100 – Operating Ratio**

   = 100 – 83.6% = 16.4%

5. **Administrative Expenses Ratio = Administrative Expense / Net sales x 100**

   = 20000 / 560000 x 100 = 3.6%

UNIT III

FUNDS FLOW STATEMENT

The Funds Flow Statement is a statement which shows the movement of funds and is a report of the financial operations of the business undertaking. It indicates various means by which funds were obtained during a particular period and the ways in which these funds were employed In simple words,.[1] it is a statement of sources and applications of funds.

MEANING AND CONCEPT OF FUNDS

In a narrow sense: It means cash only and a funds flow statement prepared on this basis is called j a cash flow statement.

In a broader sense: The term 'funds' refers to money values in whatever form it may exist. Here 'funds' means all financial resources, used in business whether in the form of men, material, money, machinery and others.

In a popular sense: toe term 'funds', means working capital, *i.e.,* the excess of current over current liabilities.

Generally refer to 'funds' as working capital and a funds flow statement as a statement of sources and application of funds.

MEANING AND CONCEPT OF ‘FLOW OF FUNDS’

The term 'flow' means movement and includes both 'inflow' and 'outflow'. The term 'flow of funds' means transfer of economic values from one asset of equity to another. According to the working capital I concept of funds, the term 'flow of funds' refers to the movement of funds in the working capital. If any I transaction results in the increase in working capital, it is said to be a source or inflow of funds and if it results I in the decrease of working capital, it is said to be an application or out-flow of funds.

Rule:

The flow of funds occurs when a transaction changes on the one hand a non-current account and on the other a current account and vice-versa.

Funds move when a transaction affects:

- **a.** *A current asset and a fixed asset,*
- **b.** *A fixed and a current liability,*
- **c.** *A current asset and a fixed liability,*
- **d.** *A fixed liability and current liability; and funds do not move* ***when*** *the transaction affects fixed assets and fixed liability or current assets and current liabilities.*

CURRENT AND NON-CURRENT ACCOUNTS

To understand flow of funds, it is essential to classify various accounts and balance sheet items into current and non-current categories.

Current Accounts can either be current assets or current liabilities. Current assets are those assets which in the ordinary course of business can be or will be converted into cash within a short period of normally one accounting year.

LIST OF CURRENT OR WORKING CAPITAL ACCOUNTS	
Current Liabilities	***Current Assets***
Bills Payable	Cash in hand
Sundry Creditors or Accounts Payable	Cash at bank
Accrued or Outstanding Expenses	Bills Receivable
Dividends Payable	Sundry Debtors or Accounts Receivable
Bank Overdraft	Short-term loans & advances
Short-term loans advances & deposits	Temporary or Marketable Investments

	Inventories
	Prepaid Expenses
	Accured Incomes

LIST OF NON-CURRENT OR PERMANENT CAPITAL ACCOUNTS	
Permanent Liabilities	**Permanent Assets**
Equity Share Capital	Goodwill
Preference Share Capital	Land
Redeemable Preference Share Capital	Building
Debentures	Plant and Machinery
Long-term Loans	Furniture and Fittings
Share Premium Account	Trade Marks
Share Forfeited Account	Patent Rights
Profit and Loss Account (balance of profit, ***i.e.,*** credit balance)	Long-term investment
Capital Reserve	Debit Balance of Profit and Loss account
Capital Redemption Reserve	Discount on Issue of Shares
	Discount on Issue of Debentures
	Preliminary Expenses.

MEANING AND DEFINITION OF FUNDS FLOW STATEMENT

Funds Flow Statement is a method by which we study changes in the financial position of a business enterprise between beginning and ending financial statements dates. It is a statement showing sources and uses of funds for a period of time.

Foulke defines this statements as :

"A statement of sources and application of funds is a technical device designed to analyse the changes in the financial condition of a business enterprise between two dates".

In the words of Anthony "The funds flow statement describes the sources from which additional funds were derived and the use to which these sources were put".

Funds flow statement is called by various names such as Sources and Application of Funds Statement of Changes in Financial Position.

FUNDS FLOW STATEMENT, INCOME STATEMENT AND BALANCE SHEET

Funds flow statement is not a substitute of an income statement, *i.e.,* a profit and loss account, and a balance sheet. The Profit and Loss Account is a document which indicates the extent of success achieved by a business in earning profits.

A balance sheet is a statement of financial position or status of a business on a given date. It is prepared at the end of accounting period.

S.No.	Funds Flow Statement	Income Statement
1	It highlights the changes in the financial position of a business and indicates the various means by which funds were obtained during a particular period and the ways to which these funds were employed.	It does not reveal the inflows and outflows of funds but depicts the items of expenses and income arrive at the figure of profit or loss.
2	It is complementary to income statement. Income statement helps the preparation of Funds Flow Statement.	Income statement is not prepared from Funds Flow Statement.
3	While preparing Funds Flow Statement	Only revenue items are considered.

	both capital and revenue items are considered.	
4	There is no prescribed format for preparing a Funds Flow Statement.	It is prepared in a prescribed format.

Difference Between Funds Flow Statement and Balance Sheet		
S.No.	**Funds Flow Statement**	**Balance Sheet**
1	It is a statement of changes in financial position and hence is dynamic in nature.	It is a statement of financial position on a particular date and hence is static in nature.
2	It shows the sources and uses of funds in a particular period of time.	It depicts the assets and liabilities at a particular point of time.
3	It is a tool of management for financial analysis and helps in making decisions.	It is not of much help to management in making decisions.
4	Usually, Schedule of Changes in Working Capital has to be prepared before preparing Funds Flow Statement.	No such schedule of Changes in Working Capital is required. Rather Profit and Loss Account is prepared.

USES, SIGNIFICANCE AND IMPORTANCE OF FUNDS FLOW STATEMENT

A funds flow statement is an essential tool for the financial analysis and is of primary importance to the financial management. The basic purpose of a funds flow statement is to reveal the changes in the working capital on the two balance sheet dates. It also describes the sources from which additional working capital has been financed and the uses to which working capital has been applied.

The significance or importance of funds flow statement can be **well followed from its various uses given below:**

1. It helps in the analysis of financial operations. The financial statements reveal the net effect of various transactions on the operational and financial position of a concern.
2. It throws light on many perplexing questions of general interest which otherwise may be difficult to be answered.
3. It helps in the formation of a realistic dividend policy
4. It helps in the proper allocation of resources.
5. It acts as a future guide.
6. It helps in appraising the use of working capital.
7. It helps knowing the overall creditworthiness of a firm.

LIMITATIONS OF FUNDS FLOW STATEMENT

1. It should be remembered that a funds flow statement is not a substitute of an income statements or balance sheet. It provides only some additional information as regards changes in working capital.
2. It cannot reveal continuous changes.
3. It is not an original statement but simply are-arrangement of data given in the financial statements.
4. It is essentially historic in nature and projected funds flow statement cannot be prepared with much accuracy.
5. Changes in cash are more important and relevant for financial management than the working capital.

PROCEDURE FOR PREPARING A FUNDS FLOW STATEMENT

The preparation of a funds flow statement consists of two parts:

1. Statement or Schedule of Charges in Working Capital.

2. Statement of Sources and Application of Funds.

Statement or Schedule of Changes in Working Capital

Working Capital means the excess of current assets over current liabilities. Statement of changes in working capital is prepared to show the changes in the working capital between the two balance sheet dates. This statement is prepared with the help of current assets and current liabilities derived from the two balance sheets.

-

As, Working Capital = Current Assets - Current Liabilities.

So,

i. An increase in current assets increases working capital.
ii. A decrease in current assets decreases, working capital.
iii. An increase in current liabilities decreases working capital ; and
iv. A decrease in current liabilities increases working capital.

Statement of Schedule of Changes in Working Capital				
			Effect on Working Capital	
Particulars	***Previous Year***	***Current Year***	***Increase***	***Decrease***
Current Assets:				
Cash in hand				
Cash at bank				
Bills Receivable				
Sundry Debtors				
Temporary Investments				
Stocks/Inventories				
Prepaid Expenses				
Accrued Incomes				

Total Current Assets				
Current Liabilities:				
Bills Payable				
Sundry Creditors				
Outstanding Expenses				
Bank Overdraft				
Short-term advances				
Dividends Payable				
Proposed dividends*				
Provision for taxation*				
Total Current Liabilities				
Working Capital (CA-CL)				
Net Increase or Decrease in Working Capital				

Illustration:

Prepare a Statement of changes in Working Capital from the following Balance Sheets of SSM and Company Limited.

Balance Sheets as at December 31					
Liabilities	**2015 *Rs.***	**2016 *Rs.***	***Assets***	**2015 *Rs.***	**2016 *Rs.***
Equity Capital	5,00,000	5,00,000	Fixed Assets	6,00,000	7,00,000
Debentures	3,70,000	4,50,000	Long-term Investments	2,00,000	1,00,000
Tax Payable	77,000	43,000	Work-in-Progress	80,000	90,000
Accounts Payable	96,000	1,92,000	Stock-in-trade	1,50,000	2,25,000
Interest Payable	37,000	45,000	Accounts	70,000	1,40,000

			Receivable		
Dividend Payable	50,000	35,000	Cash	30,000	10,000
	1130000	**1265000**		**1130000**	**1265000**

Solution:

STATEMENT OF CHANGES IN WORKING CAPITAL				
			Effect on Working Capital	
Particulars	**2006 Rs.**	**2007 Rs.**	**Increase Rs.**	**Decrease Rs.**
Current Assets:				
Cash	30,000	10,000	---	20,000
Accounts Receivable	70,000	1,40,000	70,000	---
Stock-in-trade	1,50,000	2,25,000	75,000	---
Work-in-progress	80,000	90,000	10,000	---
	3,30,000	4,65,000	---	---
Current Liabilities :				
Tax Payable	77,000	43,000	34,000	---
Accounts Payable	96,000	1,92,000	---	96,000
Interest Payable	37,000	45,000	---	8,000
Dividend Payable	50,000	35,000	15,000	---
	2,60,000	3,15,0000	---	---
Working Capital (CA-CL) Net	70,000	1,50,000	---	---
Increase in Working Capital	80,000	---	---	80,000
	1,50,000	**1,50,000**	**2,04,000**	**2,04,000**

Illustration

From the following balance sheets of Bharat Company prepare a statement show in changes in Working Capital.

	31st Dec 2016 Rs.	*31st Dec 2015 Rs.*
Assets		
Goodwill	5000	10000
Cash	70000	25000
Debtors	90000	98000
Closing Stock	120000	87000
Long-term Investments	10000	15000
Land	27000	15000
Preliminary Expenses	3000	5000
	325000	**255000**
Liabilities		
Trade Creditors	45000	50000
Bills Payable	35000	20000
Loans (Payable during 2017)	20000	---
Share Capital	150000	125000
Profit & Loss Account	75000	60000
	325000	**255000**

Statement showing changes in working capital

Particulars	2015 Rs.	2016 Rs.	Effect on Working Capital	
			Increase Rs.	Decrease Rs.
Current Assets:				
Cash	25000	70000	45000	
Debtors	98000	90000		8000
Closing stock	87000	120000	33000	
	210000	**280000**		
Current Liabilities:				
Trade creditors	50000	45000	5000	
Bills payable	20000	35000		15000
Loans (Payable during 2017)	---	20000		20000
	70000	**100000**		
Working Capital (CA-CL)	**140000**	**180000**		
Net increase in Working Capital	40000			40000
	180000	**180000**	**83000**	**83000**

Statement of Sources and Application of Funds

Funds flow statement is a statement which indicates various sources from which funds (Working capital) have been obtained during a certain period and the uses or applications to which these funds have been put during that period. Generally, this statement is prepared in two formats :

(a) Report Form

(b) T Form or An Account Form or Self Balancing Type.

Specimen of Report From of Funds Flow Statement

Sources of Funds:	***Rs.***
Funds from Operations	
Issue of Share Capital	
Raising of long-term loans	
Receipts from partly paid shares, called up	
Sales of non current (fixed) assets	
Non-trading receipts, such as dividends received	
Sale of Investments (long-term)	
Decrease in Working Capital (as per schedule of changes in Working Capital)	
Total	
Applications or Uses of Funds:	
Funds Lost in Operations	
Redemption of Preference Share Capital	
Redemption of Debentures	
Repayment of long-term loans	
Purchase of non-current (fixed) assets	
Purchase of long-term Investments	
Non-trading payments	
Payments of dividends*	
Payment of tax*	
Increase in Working Capital (as per schedule of changes in working capital)	
Total	

T Form or An Account Form or Self Balancing Type

Funds Flow Statement *(For the year ended.)*

Sources	*Rs.*	*Applications*	*Rs.*
Funds from Operations		Funds lost in Operations	
Issue of Share Capital		Redemption of Preference Share Capital	
Issue of Debentures		Redemption of Debentures	
Raising of long-term loans		Repayment of long-term loans	
Receipts from partly paid shares, called up		Purchase of non-current (fixed) assets	
Sale of non-current (fixed) assets		Purchase of long-term investments	
Non-trading receipts such as dividends		Non-trading payments	
Sale of long-term Investments		Payment of Dividends*	
Net Decrease in Working Capital		Payment of tax*	
		Net Increase in Working Capital	

* Note. Payment of dividend and tax will appear as an application of funds only when th items are appropriations of profits and not current liabilities.

SOURCES OF FUNDS

The following are the sources from which funds generally flow (come), into the business :

Funds From Operations or Trading Profits: Trading profits or the profits from operations of the business are the most important and major source of funds. Sales are the main source of inflow of hinds into the business as they increase current assets (cash, debtors or bills receivable) but at the same time funds flow out of business for expenses and cost of goods sold.

Funds from operations can also be calculated by preparing Adjusted Profit and Loss Account as follows:

Adjusted Profit and Loss Account			
	Rs.		**Rs.**
To Depreciation & Depletion or amortization of fictitious and intangible assets, such as: Goodwill, Patents, Trade Marks, Preliminary Expenses etc.		By Opening Balance (of P & L A/c)	
To Appropriation of Retained Earnings, such as : Transfers to General Reserve, Dividend Equalisation Fund, Sinking Fund, etc.		By Transfers from excess provisions	
To Loss on sales of any non-current or fixed asset		By Appreciation in the value of fixed assets	
To Dividends (including interim dividend)		By Dividends received	
To Proposed Dividend (if not taken as a current liability)		By Interest on investments	
To Provision for taxation (if not taken as a current liability)		By Profit on sale of fixed or non-current assets	
To Closing balance (of P & L A/c)		By Funds from Operations (balancing figure in case debit side exceeds credit side)	
To Funds lost in Operations (balancing figure, in case credit side exceeds the debit side)			

Illustration:

SSM Company presents the following information and you are required to calculate funds from operations.

Profit And Loss Account			
	Rs.		**Rs.**
To Expenses:		By Gross profit	2,00,000
Operation	1,00,000	By Gain on sale of plant	20,000
Depreciation	40,000		
To Loss on Sale of building	10,000		
To Advertisement Suspense A/c	5,000		
To Discount (allowed to customers)	500		
To Discount on Issue of Shares written off	500		
To Goodwill	12,000		
To Net Profit	52,000		
	2,20,000		**2,20,000**

Solution:

Calculation of Funds from Operations

	Rs.	**Rs.**
Net profit (as given)		52000
Add: Non-fund or non-operating items which have been debited to P/L A/c:		
Depreciation	40000	
Loss on sale of building	10000	
Advertisement written off	5000	

Discount on issue of shares written off	500	
Good will written off	12000	**67500**
		119500
Less: Non-fund or Non-operating items which have been credited to P/L A/c: Gain on sale of plant	20000	20000
Funds from operations		**99500**

APPLICATIONS OR USES OF FUNDS

1. Funds lost in operations
2. Redemption of preference share capital
3. Repayment of long-term loans and redemption of debentures
4. Payments of dividends and Tax
5. Any other Non-trading payment.

Illustration:

From the following Balance sheets of the company for the ending 31st December 2016 and 31st December 2017, Prepare schedule of changes in working capital and a statement showing sources and application of funds.

Liabilities	***2016***	***2017***	***Assets***	***2016***	***2017***
	Rs.	***Rs.***		***Rs.***	***Rs.***
Share capital	300000	400000	Plant & Machinery	50000	60000
Sundry creditors	100000	70000	Furniture & Fixtures	10000	15000
P ?L A/c	15000	30000	Stock in trade	85000	105000
			Debtors	160000	150000
			Cash	110000	170000
	415000	**500000**		**415000**	**500000**

Solution:

Schedule of Changes in Working Capital				
	2016	***2017***	***Effect on Working Capital***	
	Rs.	***Rs.***	***Increase***	***Decrease***
Current Assets			***Rs.***	***Rs.***
Cash	110000	170000	60000	---
Debtors	160000	150000	---	10000
Stock-in-Tiadc	85000	105000	20000	---
	355000	425000	---	---
Current Liabilities				
Sundry Creditors	100000	70000	30000	---
	100000	**70000**		
Working capital (C.A. –C.L.)	**255000**	**355000**	---	---
Net Increase in working capital	**100000**	---	---	100000
	355000	**355000**	**110000**	110000

Statement of source and application of funds

for the year end 31.12.2017

Sources	Rs.	Applications	Rs.
Issue of share capital	100000	Purchase of plant & machinery (60000-50000)	10000
Funds from operations	15000	Purchase of furniture & fixtures(15000-10000)	5000
		Net increase in working capital	100000
	115000		**115000**

Funds from operations:

Balance of P/L A/c 2017	30000
Less: Bal. of P/L A/c In the beginning of the year	15000
Funds from Operations	**15000**

Illustration:

From the following Balance Sheet of Mr. A, Prepare a schedule of changes in work capital and funds flow statement:

Liabilities	***2016***	***2017***	***Assets***	***2016***	***2017***
	Rs.	***Rs.***		***Rs.***	***Rs.***
Capital	63,000	1,00,000	Cash	15,000	20,000
Long-term Borrowings	50,000	60,000	Debtors	30,000	28,000
Trade Creditors	42,000	39,000	Stock-in-trade	55,000	72,000
Bank Overdraft	35,000	25,000	Land and Buildings	80,000	1,00,000
Outstanding Expenses	5,000	6,000	Furniture	15,000	10,000
	195000	**230000**		**195000**	**230000**

Solution:

Schedule of Changes in Working Capital				
	2016	***2017***	***Effect on Working Capital***	
	Rs.	***Rs.***	***Increase***	***Decrease***
Current Assets			***Rs.***	***Rs.***
Cash	15,000	20,000	5,000	
Debtors	30,000	28,000		2,000
Stock-in-Tiadc	55,000	72,000	17,000	
	1,00,000	1,20,000		
Current Liabilities				
Trade Creditors	42,000	39,000	3,000	
Bank overdraft	35,000	25,000	10,000	
Outstanding Expenses	5,000	6.000		1,000
	82,000	**70,000**		
Working capital (C.A. –C.L.)	**18000**	**50000**		
Net Increase in working capital	**32000**			32000
	50000	**50000**	**35000**	35000

FUND FLOW STATEMENT

Sources	Rs.	Applications	Rs.
Raising of long-term borrowings (60000- 50000)	10000	Purchases of land & Building (100000- 80000)	20000
Sales of furniture (15000-10000)	5000	Net increase in working capital	32000
Funds from operations	37000		
	52000		**52000**

Working Notes:

Long term Borrowings A/c

	Rs.		Rs.
To Balance C/d	60000	By Balance b/d	50000
		By Cash (balancing figures)	10000
	60000		**60000**

Furniture A/c

	Rs.		Rs.
To Balance b/d	15000	By cash-sale (balancing figure)	5000
		By Balance c/d	10000
	15000		**15000**

Land and Building A/c

	Rs.		Rs.
To Balance b/d	80000		
To cash-purchase (Bal.Fig.)	20000	By Balance c/d	100000
	100000		**100000**

Capital A/c

	Rs.		Rs.
To balance c/d	100000	By balance b/d	63000
		By profit (Bal.Fig.)	37000
	100000		**100000**

Illustration:

From the following balance sheets and additional information given, you are required to calculate funds operations for the year ended 2017.

Liabilities	2016 Rs.	2017 Rs.	Assets	2016 Rs.	2017 Rs.
Share capital	100000	150000	Land & buildings	100000	95000
General reserve	30000	30000	Plant & Machinery	80000	90000
Profit & loss a/c	20000	22000	Stocks	70000	110000
6% Debentures	80000	80000	Debtors	20000	25000
Creditors	65000	58000	Investments	---	10000
Provision for tax	5000	10000	Cash	10000	10000
			Goodwill	20000	10000
	300000	**350000**		**300000**	**350000**

Additional information:

1. During 2017, dividends of Rs. 15000 were paid.
2. Depreciation written off plant and machinery amounted to Rs. 6000 and no depreciation has been charged on land and buildings.
3. Provision for tax made during the year Rs. 5000.
4. Profit on sale of machinery Rs. 2000.

Solution:

Calculation of funds from operations		
	Rs.	**Rs.**
Closing balance of P/L A/c given in the B/S		22000
Add: Non-fund or non operating items already debited to P/L A/c:		
Depreciation	6000	
Dividends	15000	
Provision for tax	5000	
Goodwill	10000	36000
Less: Non-fund or non operating items already credited to P/L A/c:		
Profit on sale of machinery	2000	
Opening balance of P/L A/c (given in B/S)	20000	22000
Funds from operations		**36000**

Provision for tax has been treated as a non current liability.
Goodwill written off during the year is Rs. 20000- Rs. 10000 = Rs. 10000

Alternatively:

ADJUSTED PROFIT AND LOSS ACCOUNT			
	Rs.		**Rs.**
To depreciation	6000	By opening balance	20000
To dividends	15000	By profit on sale of machinery	2000
To provision for tax	5000	By funds from operations (bal.fig.)	36000
To goodwill	10000		
To closing balance	22000		
	58000		**58000**

Illustration

From the following balance sheets of A & Co Ltd., you are required to show any increase or decrease in working capital and sources and applications thereof:

Liabilities	**As at 31.12.16 Rs.**	**As at 31.12.17 Rs.**	**Assets**	**As at 31.12.16 Rs.**	**As at 31.12.17 Rs.**
Equity share capital	240000	360000	Land	166200	339600
Share premium	24000	36000	Machinery	106800	153900
General reserve	18000	27000	Furniture	7200	4500
Profit and Loss Account	58500	62400	Stock	66300	78000
8% Debentures	---	78000	Debtors	109500	117300

Provision for taxation	29400	32700	Bank	14400	12000
Creditors	100500	109200			
	470400	**705300**		**470400**	**705300**

Depreciation written off during the year:
On machinery Rs. 38400
On furniture Rs. 1200

Solution:

	2016 Rs.	**2017 Rs.**	***Increase in W.C.***	***Decrease in W.C.***
Current Assets:				
Stock	66300	78000	11700	
Bank	109500	117300	7800	
Debtors	14400	12000	---	
	190200	207300		2400
Current Liabilities:				
Creditors	100500	109200		8700
Provision for taxation	29400	32700		3300
	129900	**141900**		
Working Capital	60300	65400		
Net Increase in W.C.	5100			5100
	65400	**65400**	**19500**	**19500**

STATEMENT OF SOURCES AND APPLICATIONS OF FUNDS

Sources	**Rs.**	**Applications**	**Rs.**
Issue of share capital	120000	Purchase of land & building	173400
Share premium	12000	Purchase of machinery	85500
Issue of debentures	78000	Net increase in W.C.	5100
Sale of furniture	1500		
Funds from operations	52500		
	264000		**264000**

Working Notes:

Machinery A/c			
	Rs.		**Rs.**
To balance B/d	106800	By depreciation	38400
To purchase during the year (Bal. Fig.)	85500	By balance c/d	153900
	192300		**192300**

Land & Buildings A/c			
To balance B/d	166200	By balance c/d	339600
To purchase during the year (Bal. Fig.)	173400		
	339600		**339600**

Furniture A/c			
To balance B/d	7200	By depreciation	1200
		By cash-sale (bal. fig.)	1500
		By balance c/d	4500
	7200		**7200**

Adjusted Profit & Loss A/c			
To transfer to Reserves	9000	By balance b/d	58500
To Depreciation on machinery	38400	By funds from operation	52500
To Depreciation on furniture	1200		
To Balance C/d	62400		
	111000		**111000**

Illustration:

The following are summarized balance sheets of Star Ltd., on 31st Dec. 2016 and 31st Dec. 2017.

LIABILITIES	2016	2017	ASSETS	2006	2007
Share Capital	600000	800000	Plant & Machinery (at cost)	***Rs.***	***Rs.***
Debentures	200000	300000	Land & Building (at cost)	400000	645000
Profit and Loss A/c	125000	250000	Stock	300000	400000
Creditors	115000	90,000	Bank	300000	350000
Provision for bad and doubtful debts	6000	3,000	Preliminary Expenses	20000	40000
Provision for Depreciation			Debtors	7000	6000
-On Land & Building	20000	24,000		69000	61000
On Plant & Machinery	30000	35,000			
	1096000	**1502000**		**1096000**	**1502000**

Additional Information :

1. During the year a part of machinery costing Rs. 70,000 (accumulated depreciation thereon Rs. 2,000) was sold for Rs. 6,000.
2. Dividends of Rs. 50,000 were paid during the year.

You are required to ascertain :

(a) Changes in Working Capital for 2007.

(b) Funds Flow Statement

Solution:

Statement of Changes in Working Capital

	2016 Rs.	**2017 Rs.**	***Increase in W.C.***	***Decrease in W.C.***
Current Assets:				
Stock	300000	350000	50000	
Bank	20000	40000	20000	
Debtors	69000	61000		8000
	389000	**451000**		
Current Liabilities:				
Creditors	115000	90000	25000	
Provision for bad and doubtful debts	6000	3000	3000	
	121000	**93000**		
Working Capital	268000	358000		
Net Increase in W.C.	90000	----		90000
	358000	**358000**	**98000**	**98000**

Funds Flow Statement

Sources	*Rs.*	*Applications*	*Rs.*
Issue of share capital	200000	Purchase of plant & machinery	315000
Issue of debentures	100000	Purchase of land & building	100000
Sale of machinery	6000	Dividends Paid	50000
Funds from operations	249000	Net increase in Working Capital	90000
	555000		**555000**

Provision for Depreciation on Plant & Machinery A/c

	Rs.		***Rs.***
To Plant & Machinery A/c (Dep. On machinery sold)	2000	By Balance b/d	30000
To Balance c/d	35000	By Adjusted P/L A/c (Dep. Provided) (bal. fig.)	7000
	37000		**37000**

Provision for Depreciation on Land & Building A/c

To Balance c/d	24000	By Balance b/d	20000
		By Adjusted P/L A/c (bal. fig.)	4000
	24000		**24000**

Plant & Machinery A/c			
To Balance b/d	4,00,000	By Cash (sale)	6,000
ToCash-Purchases(bal.fig)	3,15,000	By-Provision for Dep.	2,000
		By Adjusted P/L A/c (Loss on sale)	62,000
		By Balance c/d	6,45,000
	7,15,000		**7,15,000**
Adjusted Profit and Loss Account			
To provision for depreciation:		By balance c/d	125000
Plant & machinery	7000	By Funds from operations	249000
Land and building	4000		
To Preliminary Expenses written off	1000		
To Dividend	50000		
To Loss on sale of machinery	62000		
To Balance c/d	250000		
	374000		**374000**

CASH FLOW STATEMENT

INTRODUCTION

Cash plays a very important role in the entire economic life of a business. Recognising the importance of cash flow statement, the Institute of Chartered Accountants of India (ICAT) issued. AS-3 Revised : Cash flow Statements in March, 1997.

Meaning:

Cash Flow Statement is a statement which describes the inflows (sources) and outflows (uses) of cash and cash equivalents in an enterprise during a specified period of time. A cash flow statement summarises the causes of changes in cash position of a business enterprise between dates of two balance sheets. According to AS-3 (Revised), an enterprise should prepare a cash flow Statement and should present it for each period for which financial statements are prepared. The terms cash, cash equivalents and cash flows are used in this statement with the following meanings:

1. Cash comprises cash on hand and demand deposits with banks.
2. Cash equivalents are short term, highly liquid investments.
3. Cash flows are inflows and outflows of cash and cash equivalents.

CLASSIFICAION OF CASH FLOWS

According to AS-3 (Revised) cash flows are classified into three main categories.

1. Cash flows from operating activities.
2. Cash flows from investing activities.
3. Cash flows from financing activities.

1. **Cash Flows from Operating Activities:** Operating activities are the principal revenue-producing activities of The enterprise and other activities that are not investing or financing activities. The amount of cash flows arising from operating activities is a key indicator of the extent to which the operations of the enterprise have generated sufficient cash flows to maintain the operating capability of the enterprise, pay dividends.

Examples of cash flows from operating activities are:

i. Cash receipts from the sale of goods and the rendering of services;

ii. Cash receipts from royalties, fees, commissions, and other revenue;

iii. Cash payments to suppliers of goods and services;

iv. Cash payments to and on behalf of employees.

v. Cash receipts and cash payments of an insurance enterprise for premiums and claims, annuities and other policy benefits;

vi. Cash payments or refunds of income taxes unless they can be specifically identified with financing and investing activities ; and

vii. Cash receipts and payments relating to futures contracts, forward contracts, option contracts, and swap contracts when the contracts are held for dealing or trading purposes.

2. **Cash Flows From Investing Activities:** Investing activities are the acquisition and disposal of long-term assets and other investments not included in cash equivalents. The separate disclosure of cash flows arising from investing activities.

a) Cash payments to acquire fixed assets (including intangibles). These payments include those relating to capitalised research & development costs and self constructed fixed assets;

b) Cash receipts from disposal of fixed assets.

3. **Cash Flows From Financing Activities:** Financing activities are activities that result in changes in the size and composition of the owners' capital (including preference share capital in the case of a company) and borrowings of the enterprise.

a) Cash proceeds from issuing shares or other similar instruments :
b) Cash proceeds from issuing debentures, loans, notes, bonds, and other short-or long-term borrowings; and
c) Cash repayments of amounts borrowed such as redemption of debentures, bonds, preference shares.

FORMAT OF CASH FLOW STATEMENT

A S - 3 (Revised) has not provided any specific format for preparing a cash flow statement. A widely used format of cash flow statement (Direct Method) is given below:

Cash Flow Statement

(for the year ended ...)

	Rs.	*Rs.*
Cash Flows From Operating Activities Either		
Cash receipts from customers		
Cash paid to suppliers and employees		
Cash generated from operations		
Income-tax paid		
Cash flow before extraordinary items		
Extraordinary items		
Net cash from (used in) Operating activities **Or** Net profit before tax and extraordinary items		

Adjustments for non-cash and non-operating items (List of individual items such as depreciation, foreign exchange loss, loss on sale of fixed assets, interest income, dividend income, interest expense etc.)		
Operating profit before working capital changes		
Adjustments for changes in current assets and current liabilities (List of individual items)		
Cash generated from (used in) operations before tax		
Income tax paid		
Cash flow before extraordinary items		
Extraordinary items (such as refund of tax)		
Net cash from (used in) operating activities		
Cash Flows From Investing Activities		
Individual Items of cash inflows and outflows from financing activities		
(such as) purchase/sale of fixed assets, purchase or sale of investments, interest received, dividend received etc.		
Net Cash from (used in) investing activities		
Cash Flows From Financing Activities		
Individual items of cash inflows and outflows from financing activities		
(such as) proceeds from issue of shares, long-term borrowings, repayments of long-term borrowings, interest paid, dividend paid etc.		
Net cash from (used in) financing activities		
Net Increase (Decrease) in cash and cash equivalents		
Cash and cash equivalents at the beginning of the period		

Cash and cash equivalents at the end of the period		

Format of Cash Flow Statement (Indirect Method):

Cash Flow Statement *(for the year ended………)*	
XYZ Ltd.	Rs.
A. Cash Flow From Operating Activities	
Net Profit/Loss before tax and extraordinary items Adjustments for:	
Depreciation	
Gain/Loss on sale of fixed assets	
Foreign exchange	
Miscellaneous expenditure written off	
Investment income	
Interest	
Dividend	
Operating profit before working capital changes Adjustments for:	
Trade and other receivables	
Inventories	
Trade Payables	
Cash generated from operations	
Interest paid	
Direct taxes paid	
Cash flow before items	
Extraordinary items	
Net Cash from Operating Activities	
B. Cash Flow From Investing Activities	
Purchase of fixed assets	
Sales of fixed assets	

Purchase of investments	
Sale of investments	
Interest received	
Dividend received	
Net Cash from/used in investing activities	
C. Cash Flow From Financing Activities	
Proceeds from issue of share capital	
Proceeds from long-term borrowings/banks	
Payment of long-term borrowings	
Dividend paid	
Net Cash from /used in financing activities	
Net Increase/Decrease in Cash and Cash Equivalents	
Cash and Cash Equivalents as at……..(Opening Balance)	
Cash and Cash Equivalents as at……..(Closing Balance)	

COMPARISON BETWEEN FUNDS FLOW STATEMENT AND CASH FLOW STATEMENT

The term 'funds' refers to working capital and a statement of changes in the financial position prepared on this basis is called a funds flow statement. A cash flow statement is to summarise the causes of changes in the financial position of a business.

1. Funds flow statement is based on a wider concept of funds, i.e., working capital, while cash flow statement is based on the narrower concept of funds).
2. Funds flow statement is based on accrual basis of accounting while cash flow statement is based on cash basis of accounting.
3. A funds flow statement current assets and current liabilities, these appear separately in a schedule of changes in working capital No such schedule of changes in working capital is prepared for a cash flow statement and changes in

all assets and liabilities fixed as well as current, are summarised in the cash flow statement.

4. A cash flow statement is prepared by classifying all cash inflows and outflows in terms of operating, investing and financing activities. No such classification is made in a funds flow statement.
5. Funds flow statement explains the reasons for change in working capital whereas cash flow statement explains the reasons for change in cash and cash equivalents.
6. Funds flow statement is useful in planning intermediate and long-term financing while a cash flow statement is more useful for short-term analysis and cash planning of the business.

Difference Between Funds Flow Statement and Cash Flow Statement		
Basis of Difference	*Funds Flow Statement*	*Cash Flow Statement*
Basis of Concept	It is based on a wider concept of funds, i. e. *working capital.*	' It is based on a narrower concept of funds, *i.e.*. cash.
Basis of Accounting	It is based on accrual basis of accounting.	It is based on cash basis of accounting.
Schedule of changes in working Capital	Schedule of changes in working capital is prepared to show the changes in current assets and current liabilities.	No such schedule of changes in working capital is prepared.
Method of Preparing	Fund Flow Statement reveals the sources and applications of funds. The net difference between sources and applications of funds represents net increase or	It is prepared by classifying all cash "Inflows and outflows in terms of oper-ating, investing and financing activities. The net difference represents the net

	decrease in working capital.	increase or decrease in cash and cash equivalents.
Basis of Usefulness	It is useful in planning intermediate and r long term financing.	It is more useful for short-term analysis and cash planning of the business.
Basis of Improvement	Improvement in funds (working capital) position of a firm does not necessarily lead , to improvement in cash position.	Improvement in cash position results "in improvement of funds (working capital) position of the firm.
Cash and Cash Equivalents	„ The opening and closing balances of cash are included in the schedule of changes in working capital.	The balances of cash and cash equivalents at the beginning and at the end of the period are shown in the cash flow statement.

USES AND SIGNIFICANCE OF CASH FLOW STATEMENT

It is an essential tool of financial analysis for short-term planning.

1. A cash flow statement is based on the cash basis of accounting, it is very useful in the evaluation of cash position of a firm.
2. A projected cash flow statement can be prepared in order to know the future cash position of a concern so as to enable a firm to plan and coordinate its financial operations properly.
3. A comparison of the historical and projected cash flow statements can be made so as to find the variations and deficiency or otherwise in the performance so as to enable the firm to take immediate and effective action.

4. A series of intra-firm and inter-firm cash flow statements reveals whether the firm's liquidity (short-term paying capacity) is improving or deteriorating over a period of time and in comparison to other firms over a given period of time.
5. Cash flow statement helps in planning the repayment of loans, replacement of fixed assets.
6. It better explains the causes for poor cash position in spite of substantial profits in a firm by throwing light m various applications of cash made by the firm.
7. Cash flow analysis is more useful and appropriate than funds flow analysis for short-term financial analysis as in a very short period.
8. Cash flow statement prepared according to AS-3 (Revised) is more suitable T making comparisons than the funds flow statement.
9. Cash flow statement provides information of all activities classified under operating, investing and financing activities.

LIMITATIONS OF CASH FLOW STATEMENT

i. As cash flow statement is. based on cash basis of accounting, it ignores the basic accounting concept of accrual basis.
ii. Some people feel that as working capital is a wider concept of funds, a funds flow statement provides a more complete picture than cash flow statement.
iii. Cash flow statement is not suitable for judging the profitability of a firm as non-cash charges are ignored while calculating cash flows from operating activities.
iv. A cash flow statement is not a substitute of an income statement, it is complementary to an income statement. Net cash flow does not mean the net income of a firm.
v. A cash flow statement is also not a substitute of funds flow statement which provides information relating to the causes that lead to increase or decrease in working capital.

vi. A comparative study of cash flow statements may give misleading results.

PROCEDURE FOR PREPARING A CASH FLOW STATEMENT

Cash flow statement is not a substitute of income statement, i.e., a profit arid loss account, and a balance sheet. It provides additional information and explains the reasons for changes in cash and cash equivalents, derived from financial statements at two points of time.

The preparation of a cash flow statement involves the following steps:

Step 1	Compute the net increase or decrease in cash and cash equivalents by making a comparison of these accounts given in the comparative balance sheets.
Step 2	Calculate the net cash flow provided (used in) operating activities by analysing the profit and loss account, balance sheet and additional information. There are two methods of converting net income into net cash flows from operating activities : the direct method and the indirect method. These methods have been discussed separately in this chapter.
Step 3	Calculate the net cash flow from investing activities.
Step 4	Calculate the net cash flow from financing activities.
Step 5	Prepare a formal cash flow statement highlighting the net cash flow from (used in) operating, investing and financing activities separately.
Step 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 equivalents as calculated in Step 1.
Step 7	Report significant non-cash transactions that did not involve cash or cash equivalents in a separate schedule to the cash flow statement e.g., purchase of machinery against issue of share capital or redemption of debentures in exchange for share capital.

METHODS OF CALCULATING CASH FLOWS FROM (USED IN) OPERATING ACTIVITIES

There are two methods of reporting cash flows from operating activities: the direct method and the indirect method.

1. The Direct Method

Under the direct method, cash receipts (inflows) from operating revenues and cash payments (outflows) for operating expenses are calculated to arrive at cash flows from operating activities. The difference between the cash receipts and cash payments is the net cash flow provided by (or used in) operating activities. The following are the examples of cash receipts and cash payments (called cash flows) resulting from activities:

a) Cash receipts from the sale of goods and the rendering of services;

b) Cash receipts from royalties, fees, commissions and other revenues;

c) Cash payment to suppliers for goods and services;

d) Cash payment to and on behalf of employees;

e) Cash receipts and cash payment of an insurance enterprise for premiums and claims, annuities and other policy benefits;

f) Cash payments or refund of income taxes unless they can be specifically identified with financing and investing activities; and \

g) Cash receipts and payments relating to future contracts, forward contracts, option contracts and swap contracts when the contracts are held for dealing or trading purposes.

The information about major classes of gross cash receipts and gross cash payments may be obtained either:

i. From accounting records of the enterprise; or

ii. By adjusting sales, cost of sales (interest and similar income and interest expense and similar charges for a financial enterprise) and other items in the statement of profit and loss for :

   a) Changes during the period in inventories and operating receivables and payables;

   b) Other non-cash items; and

   c) Other items for which the cash effects are investing or financing cash flows.

The following calculation are given to illustrate the point with imaginary figures :

	Rs.
(i) Credit Sales given	670000
Add: Opening Balance of Trade Debtors (Debtors + B/R)	80000
	750000
Less: Closing Balance of Trade Debtors	110000
Cash received from debtors/customers	**640000**
(ii) Cost of Goods Sold (given)	450000
Add: Closing Stock	30000
	480000
Less: Opening Stock	20000
Purchases on accrual basis	**460000**
(iii) Credit Purchases	460000
Add: Opening Balance of Trade Creditors (Creditors + B/P)	60000
	520000
Less: Closing Balance of Trade Creditors	90000
Cash paid to creditors/suppliers	**430000**
(iv) Salary as charged to Profit and Loss A/c	75000

Add: Opening Balance of Outstanding Salary	10000
	85000
Less: Closing Balance of Outstanding Salary	5000
Cash paid to employees on account of salaries	**80000**

Illustration:

From the following information, calculate cash flows from operating activities.

	Rs.
Total sales for the year	250000
Total purchases for the year	200000
Trade debtors as on 1.7.2007	12000
Trade creditors as on 1.7.2007	14500
Trade debtors as on 30.6.2008	20800
Trade creditors as on 30.6.2008	21600
Total operating expenses for the year	10200
Outstanding expenses as on 1.7.2007	1800
Prepaid expenses as on 1.7.2007	1500
Outstanding expenses as on 30.6.2008	2400
Prepaid expenses as on 30.6.2008	2200
Income tax paid during the year	2000

Solution:

Cash flows from operating activities

Cash receipts from customers (working Note: 1)	241200
Cash paid to supplies and employees (working note: 2)	203200
Cash generated from operations	38000

Income tax paid	2000
Net cash flows from operating activities	36000

Working notes:

Calculate of cash receipts from customers:

1.**Calculation of cash receipts from customers :**	***Rs.***
Sales for the year	2,50,000
Add : Trade debtors as on 1.7.2007	12.000
	2,62,000
Less : Trade debtors as on 30.6.2008	20.800
Cash receipts from customers	**2.41.200**
2.**Calculation of cash paid to suppliers and employees :**	
Total purchases for the year	**2,00,000**
Add : Trade creditors as on 1.7.2007	14.500
	2,14,500
Less : Trade creditors as on 30.6.2008	21.600
Cash paid to creditors for purchase of goods **(a)**	**1.92.900**
Total operating expenses for the year	10,200
Add : Outstanding expenses as on 1.7.2007	1.800
	12,000
Less : Outstanding expenses as on 30.6.2008	2.400
	9,600
Add : Prepaid expenses as on 30.6.2008	2.200
	11,800
Less : Prepaid expenses as on 1.7.2007	1.500
Cash paid for services and expenses (b)	**10.300**
Cash paid to suppliers and employees (a+b) or (1,92,900 + 10,300)	**203200**

Illustration:

From the following balance sheets and additional information of ABC Ltd., find out cash crating activities.

Liabilities	31.3.2007 Rs.	31.3.2008 Rs.	Assets	31.3.2007 Rs.	31.3.2008 Rs.
Equity Share Capital	60,000	70,000	Goodwill	20,000	16,000
General Reserve	20,000	30,000	Machinery	82,000	1,08,000
10% Debentures	42,000	50,000	10% Investments	6,000	16,000
Profit and Loss A/c	---	14,000	Stock	8,000	34,000
Sundry Creditors	17,000	25,000	Debtors	4,000	15,000
Provision for Depreciation on Machinery	18,000	26,000	Cash and Bank	24,000	26,000
			Discount on Debentures	1000	---
			Profit and Loss A/c	12.000	---
	1,57,000	**2,15,000**		**1,57,000**	**2,15,000**

Additional Information :

(a) Debentures were issued on 31st March, 2008.

(b) Investment were made on 31st March, 2008.

Solution

Increase in stock Increase in debtors

Net Cash Flow from Operating Activities

CASH FLOW FROM OPERATING ACTIVITIES		
	Rs.	Rs.
Increase in the balance of profit and loss account (14,000 + 12,000 loss)		26000
Add : Non-cash and non-operating items which have been Dr. to P/L A/c		
Transfer to general reserve (30,000 - 20,000)	10000	
Provision for depreciation (26,000 - 18,000)	8000	
Goodwill written off (20,000 - 16,000)	4000	
Discount on debentures written off	1000	
Interest on debentures (10% of 42,000)	4200	27200
Less : Non-cash and non-operating items which have been Cr. to P/L A/c :		53200
Interest on investments (10% of 6000)		(600)
Operating profit before working capital changes		52600
Add : Decrease in accounts of current assets except cash and increase in current liabilities		
Increase in sundry creditors (25000-17000)		8000
Less : Increase in accounts of current assets and decrease in current liabilities :		60600
Increase in stock	26000	
Increase in debtors	11000	(37000)
Net cash flow from operating activities		**23600**

Illustration:
CASH FLOWS FROM INVESTING ACTIVITIES
Calculate net cash flows from investing activities from the following information:

	31.3.2016	31.3.2017
Buildings (w.d.v.)	600000	750000

Additional information:
Building costing Rs. 100000 on which Rs. 30000 had accumulated as depreciation was sold Rs. 60000.
Depreciation charged on buildings for the year ended 31.3.2017 Rs. 50000.

Solution:

Building A/c			
	Rs.		Rs.
To balance b/d	600000	By cash (sale)	60000
To cash (purchase – bal.fig.)	270000	By P/L a/c (loss)	10000
		By depreciation	50000
		By balance c/d	750000
	870000		870000

CALCULATION OF NET CASH FLOWS FROM INVESTING ACTIVITIES

	Rs.	Rs.
Sale of buildings	60000	
Purchase of buildings	(270000)	
Net cash used in investing activities		(210000)

Illustration:
CASH FLOWS FROM FINANCING ACTIVITIES
From the information given below, calculate cash flows from financing activities.

	2016 Rs.	2017 Rs.
Equity share capital	200000	300000
8% debentures	100000	50000
Securities premium	20000	30000
Bank loan (long-term)	---	100000

Additional information: Interest paid on debentures Rs. 8000.

Solution:

CALCULATION OF CASH FLOWS FROM FINANCING ACTIVITIES		
	Rs.	Rs.
Issue of share capital	100000	
Redemption of debentures	(50000)	
Proceeds from securities premium	10000	
Raising of Bank Loan	100000	
Interest on Debentures paid	(8000)	
Net Cash Flows From Financing Activities		152000

Illustration:

From the summary Cash Amount of Sunny Ltd. prepare Cash Flow Statement for the year ended 31st March, 2017 in accordance with AS-3 (Revised) using the direct method. The company does not have any cash equivalents.

Summary Cash Account
(For the year ended 31.3.2017)

Receipts	Rs. '000	Payments	Rs. '000
Balance on 1.4.2007	100	Payment of suppliers	4000
Issue of equity shares	600	Purchase of fixed assets	400
Receipts from customers	5600	Overhead expenses	400
Sale of fixed assets	200	Wage and salaries	200
		Taxation	500
		Dividend	100
		Repayment of bank loan	600
		Balance on 31.3.2008	300
	6500		**6500**

CASH FLOW STATEMENT
(for the year ended 31.3.2017)

	Rs.'000	Rs.'000
CASH FLOWS FROM OPERATING ACTIVITIES		
Cash receipts from customers	5600	
Cash paid to suppliers and employees (4000+400+200)	(4600)	
Cash generated from operations	1000	
Income tax paid	(500)	
Cash flow from operating activities		500
CASH FLOW FROM INVESTING ACTIVITIES		
Sale of fixed assets	200	
Purchase of fixed assets	(400)	
Net cash used in investing activities		(200)
CASH FLOWS FROM FINANCING ACTIVITIES		
Issue of equity shares	600	
Dividend paid	(100)	
Repayment of bank loan	(600)	
Net cash used in financing activities		(100)
Net increase in cash and cash equivalents		200
Cash and cash equivalents at the beginning of the period		100
Cash and cash equivalents at the end of the period		300

Illustration

The following details are available from a company.

	31-12-06	**31-12-07**		**31-12-06**	**31-12-07**
	Rs.	**Rs.**		**Rs.**	**Rs.**
Share Capital	70,000	74,000	Cash	9,000	7,800
Debentures	12,000	6,000	Debtors	14,900	17,700
Reserve for doubtful debts	700	800	Stock	49,200	42,700
Trade Creditors	10,360	11,840	Land	20,000	30,000

P/L A/c	10,040	10560	Goodwill	10,000	5,000
	103100	**103200**		**103100**	**103200**

In addition, you are given :
Dividend paid total Rs. 3,500.
Land was purchased for Rs. 10,000.
Amount provided for amortisation of goodwill Rs. 5,000.
Debentures paid off Rs. 6,000.
Prepare Cash Flow Statement,

Solution:

Cash Flow Statement for ended 31st December, 2007)		
CASH FLOWS FROM OPERATING ACTIVITIES	**Rs.**	**Rs.**
Increase in the balance of P/L A/C	520	
Adjustments for non-cash and non-operating items:		
Reserve for Doubtful Debts	100	
Dividend	3500	
Goodwill written off	5000	
Operating Profit before working capital changes	9120	
Adjustments for changes in current operating assets and liabilities:		
Increase in Trade Creditors	1480	
Increase in Debtors	(2800)	
Decrease in Stock	6500	
Cash generated from operations	14300	
Income tax paid	---	
Net cash from operating activities		14300
Cash Flows from Investing Activities		
Purchase of Land	(10000)	
Net cash used in investing activities		(10000)
Cash Flows from Financing Activities		
Proceeds from the issue of Share	4000	
Capital Redemption of Debentures	(6000)	
Dividend paid	(3500)	
Net cash used in financing activities		(5500)
Net Decrease in cash and cash equivalents		(1200)
Cash and cash equivalents at the beginning of the period		9000
Cash and cash equivalents at the end of the period		7800

Illustration: The Balance Sheet of ABC Ltd. is as follows :

Liabilities	1.1.07 (Rs.)	31.12.07 (Rs.)	Assets	1.1.07 (Rs.)	31.12.07 (Rs.)
Equity Capital	100000	100000	Cash	10000	7200
General Reserve	100000	100000	Debtors	70000	76800
Profit and Loss A/c	96000	98000	Stock	50000	44000
Current Liabilities	72000	82000	Land	40000	60000
Loan from Associate Company	---	40000	Buildings	100000	110000
Loan from Bank	62000	50000	Machinery	160000	172000
	430000	**470000**		**430000**	**470000**

Solution:

CASH FLOW STATEMENT (for the year ended 31.12.2007)		
	Rs.	**Rs.**
CASH FLOWS FROM OPERATING ACTIVITIES		
Increase in the balance of P/L A/c	2000	
Adjustments for non-cash and non-operating items:		
Dividend paid	52000	
Provision for depreciation on machinery (72,000-54,000)	18000	
Operating profit before working capital changes	72000	
Adjustments for changes in current operating assets and liabilities:		
Increase in debtors	(6800)	
Decrease in stock	6000	
Increase in current liabilities	10000	
Cash generated from operations before tax	81200	
Less: Income tax paid	---	
Net Cash from operating activities		81200
CASH FLOW FROM INVESTING ACTIVITIES		
Purchase of land (60,000-40,000)	(20000)	
Purchase of buildings (1,10,000-1,00,000)	(10000)	
Purchase of machinery (1)	(30000)	(60000)
Net Cash used in investing activities		
CASH FLOWS FROM FINANCING ACTIVITIES		
Loan from associate company	40,000	
Loan repaid to bank	(12,000)	
Dividend paid	(52.000)	(24000)
Net Decrease in cash a cash equivalents		(2800)
Cash and cash equivalents at the beginning of the period		10000
Cash and cash equivalents at the end of the period		7200

Working Notes:

Machinery A/c (At written down values)

	Rs.		Rs.
To Balance b/d	160000	By Depreciation(72,000-54,000)	18000
To Cash-purchased (bal. fig.)	30000	By Balance c/d	172000
	190000		190000

Illustration:

The Balance Sheets of M/S A and B on 1.1.2017 and 31.12.2017 were as follows.

LIABILITIES	**1.1.2017**	**31.12.2017**	**ASSETS**	**1.1.2017**	**31.12.2017**
Creditors	1,20,000	1,32,000	Cash	30,000	21,000
Mrs A's Loan	75,000		Debtors	90,000	1,50,000
Loan from Bank	1,20,000	1,50,000	Stock	1,05,000	75,000
Capital	3,75,000	4,59,000	Machinery	2,40,000	1,65,000
			Land	1,20,000	1,50,000
			Building	1,05,000	1,80,000
	6,90,000	**7,41,000**		**6,90,000**	**7,41,000**

During the year a machine costing Rs. 30,000 (accumulated depreciation Rs. 9,1)00) was sold for Rs. 15,000. The provision for depreciation against machinery as on 1.1.2007 was Rs. 75,000 and on 31.12.2007 Rs. 1,20,000. Net profit for the year 2007 amounted to Rs. 1,35,000.
Prepare Cash Flow Statement

Solution:

Cash Flow Statement (for the year ended 31.12.2007)		
	Rs.	Rs.
CASH FLOWS FROM OPERATING ACTIVITIES		
Net profit for the year (Working Note 3)		135000
Adjustments for non-cash and non-operating items:	6000	
Loss on sale of machinery	54000	
Depreciation provided during the year	195000	
Operating profit before working capital changes		
Adjustments for changes in current operating assets and liabilities:		
Increase in debtors	(60000)	
Decrease in stock	30000	
Increase in creditors	12000	
Cash generated from operations	177000	
Less: Income tax paid	---	
Net Cash from operating activities		177000
CASH FLOWS FROM INVESTING ACTIVITIES		
Sale of machinery	15000	
Purchase of land	(30000)	
Purchase of building	(75000)	
Net cash used in investing activities		(90000)
CASH FLOWS FROM FINANCING ACTIVITIES		
Repayment of Mrs. A's Loan	(75000)	
Loan from bank	30000	
Drawings from capital (see capital account)	(51000)	
Net cash used in financing activities		(96000)
Net Decrease in cash and cash equivalents		(9000)
Cash and cash equivalents at the beginning of the period		30000
Cash and cash equivalents at the end of the period		21000

Workings:

Provision for depreciation A/c

	Rs.		Rs.
To depreciation on machinery sold	9000	By balance b/d	75000
To balance b/d	120000	By profit and loss A/c (depreciation provided during the year)	54000
	129000		129000

Machinery A/c (At cost)

	Rs.		Rs.
To balance b/d (240000+75000)	315000	By provision for depreciation (Dep. On Machinery sold)	9000
		By cash (sale)	15000
		By loss on sale	6000
		By balance c/d (165000+12000)	285000
	315000		315000

Capital A/c

	Rs.		Rs.
To drawings (Bal. fig.)	51000	By balance b/d	375000
To balance c/d	459000	By net profit (given)	135000
	510000		510000

TRADING AND PROFIT AND LOSS ACCOUNT

***for the year ending 31st March,* 1998**

Dr.	**Rs.**	Cr.	**Rs.**
To Purchases	20,000	By Sales	30,000
To Wages	5,000		
To Gross Profit c/d	5,000		
30,000	30,000		
To Salaries	1,000	By Gross Profit/b/d	5,000
To Rent	1,000	By Profit on sale out building	
To Depreciation on Plant	1,000	Book Value	10,000
To Goodwill written	1,000		

off			
To Net Profit	5,500		
	10,000		10,000

Calculate the cash from operations.

Solution:

CASH FROM OPERATIONS

	Rs.	Rs.
Net Profit as per P & L Account		5,500
Add: Non-cash items (items which do not result in outflow of cash):		
Depreciation	1,000	
Loss on sale of furniture	500	
Goodwill written off	1,000	2,500
Less: Non-cash items (items which do not result In Inflow of cash):		8,000
Profit on sale of building (Rs. 15,000 will be taken as a separate source of cash)		5,000
Cash from operations		**3,000**

Example:

From the following balances, you are required to calculate cash from operations:

December 31

	1997 Rs.	1998 Rs.
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 made during the year	-	1,30,000

Solutions:

CASH FROM OPERATIONS

	December 1997 Rs.	**31st 1998 Rs.**
Profit made during the year		1,30,000
Add: Decrease in Debtors	3,000	
Increase in Creditors	5,000	
Increase in Outstanding Expenses	200	
Decreases in prepaid expenses	100	8,300
		1,38,300
Less:Increase in Bills Receivable	2,500	
Decrease in Bills payable	2,000	
Increases in Accrued Income	150	
Decrease in Income received in Advance	50	4,700
Cash from Operations		**1,33,600**

WORKING CAPITAL MANAGEMENT

MEANING OF WORKING CAPITAL

Capital required for a business can be classified under two main categories namely.,

1. Fixed capital and 2. working capital.

Every business needs funds for two purposes for its establishment and to carry out its day-to-day operations. Long-term funds are required to create production facilities through purchases of fixed assets such as plant and machinery, land building furniture, etc. funds are also needed for short-term purposes for the purchase of raw materials, payments of wages and other day-today expenses, etc. These funds are known as working capital. In simple words, working capital refers to that part of the term's capital which is required for financing short term or current assets such as cash, marketable securities, debtors and inventories. Funds, thus invested in current assets keep revolving fast are being constantly converted into cash and this cash inflows out again in exchange for other current assets. Hence, it is also known as revolving or circulating capital or short-term capital.

In the words of Shubin, "Working capital is the amount of funds necessary to cover the cost of operating the enterprise".

CONCEPTS OF WORKING CAPITAL

There are two concepts of working capital:

1. Balance sheet concept
2. Operating cycle or circular flow concept

BALANCE SHEET CONCEPT:

There are two interpretations of working capital refers to the gross working capital under the balance sheet concept:

1. Gross Working Capital
2. Net Working Capital

The term working capital refers to the gross working capital and represents the amount of funds invested in current assets. Thus, the gross working capital is the capital invested in total current assets of the enterprise. Current assets are those which in the ordinary course of business can be converted into cash within a short period of normally one accounting year.

Net Working Capital = Current Assets – Current Liabilities

CLASSIFICATION OR KINDS OF WORKING CAPITAL

1. **Permanent or Fixed Working Capital:**

   Permanent or Fixed working capital is the minimum amount which is required to ensure effective utilization of fixed facilities and for maintaining the circulations of current assets. There is always a minimum level of current assets which is continuously required by the enterprise to carry out is normal business operations.

2. **TEMPORARY OR VARIABLE WORKING CAPITAL:**

   Temporary or variable working capital is the amount working capital which is required to meet the seasonal demands and some special exigencies. Variable working capital can be further classified as seasonal working capital and special working capital.

IMPORTANCE OR ADVANTAGES OF ADEQUATE WORKING CAPITAL

1. **Solvency of the business:** Adequate working capital helps in maintain solvency of the business by providing uninterrupted flow of production.
2. **Goodwill:** sufficient working capital enables a business concern to make prompt payments and hence helps in creating and maintaining goodwill.

3. **Easy loans:** A concern having adequate working capital, high solvency and good credit standing can arrange loans from banks and others on easy and favourable terms.
4. **Cash Discounts:** Adequate working capital also enables a concern to avail cash discounts on the purchases and hence it reduces costs.
5. **Regular supply of raw materials:** Sufficient working capital ensures regular supply of raw materials and continuous production.
6. **Regular payment of salaries, wages and other day-to-day commitments:** A company which has ample working capital can make regular payment of salaries, wages and other day-to-day commitments which raises the morale of its employees, increases their efficiency, reduces wastages and costs and enhances production and profits.
7. **Exploitation of favourable market conditions:** Only concerns with adequate working capital can exploit favourable market conditions such as purchasing its requirements in bulk when the prices are lower and by holding its inventories for high prices.
8. **Ability to face crisis:** Adequate working capital enables a concern to face business crises in emergencies such as depression because during such periods, generally, there is much pressure on working capital.
9. **Quick and regular return on investments:** Every investor wants a quick and regular return on his investments. Sufficiency of working capital enables a concern to pay quick and regular dividends to its investors as there may not be much pressure to plough back profits. This gains the confidence of its investors and creates a favourable market to raise additional funds in the future.
10. **High morale:** Adequacy of working capital creates an environment of security, confidence, high morale and creates overall efficiency in a business.

EXCESS OR INADEQUATE WORKING CAPITAL

Disadvantages of Redundant or Excessive Working Capital

1. Excessive working capital means idle funds which earn no profits for the business and hence the business cannot earn a proper rate of return on its investments.
2. When there is a redundant working capital , it may lead to unnecessary purchasing and accumulation of inventories causing more chances of theft, waste and losses.

Disadvantages or Dangers of Inadequate Working Capital:

1. A concern which has inadequate working capital cannot pay its short-term liabilities in time. Thus, it will lose its reputation and shall not be able to get good credit facilities.
2. It cannot buy its requirements in bulk and cannot avail of discount.

FACTORS DETERMINING THE WORKING CAPITAL REQUIREMENTS:

1. Nature or Character of Business:

The working capital requirements of a firm basically depend upon the nature of its business. Public utility undertakings like Electricity, Water supply and Railways need very limited working capital because they offer cash sales only supply services, not products, and as such no funds are tied up in inventories and receivables. On the other hand trading and financial firms require less investment in fixed assets but have to invest large amounts in current assets.

2. Size of business / Scale of operations:

Greater the size of a business unit, generally larger will be the requirements of working capital.

3. **Production policy:**

   If the policy is to keep production steady by accumulating inventories it will require higher working capital.

4. **Manufacturing process/ Length of production cycle:**

   Longer the process period of manufacture, larger is the amount of working capital required.

5. **Seasonal variations:**

   Generally, during the busy season, a firm requires larger working capital than in the slack season.

6. **Working capital cycle:**

   The speed with which the working capital completes one cycle determines the requirements of working capital-longer the period of the cycle larger is the requirement of working capital.

7. **Rate of stock turnover:**

   Thus,, the working capital requirements of such a dealer shall be higher than that of a provision store.

8. **Credit policy:**

   The credit policy of concern in its dealings with debtors and creditors influence considerably the requirements of working capital.

9. **Business cycles:**

   When the business is prosperous, there is a need for large amount of working capital due to increase in sales, rise in prices, optimistic expansion of business, etc. on the contrary in the times of depression.

10. **Rate of growth of business:**

    The working capital requirements of a concern increase with the growth and expansion of its business activities.

11.Earning capacity and Dividend policy:

Some firms have more earning than others due quality of their products, monopoly conditions, etc. such firms with high earning capacity may generate profits from operations and contribute to their working capital.

12.Price level changes:

Changes in the price level also affect the working capital requirements. Generally, the rising prices will require the firm to maintain larger amount of working capital as more funds the required to maintain the same current assets.

13.Other factors:

Certain other factors such as operating efficiency, management ability, regularities of supply.

Statement of working capital requirements	
	Amounts Rs.
Current assets:	
Cash	
Debtors or receivables (For… months sales)	
Stocks (For… months sales)	
Advance payments, if any	
Others	
Less: current liabilities	
Creditors (For … moths purchases)	
Lag in payment of expenses (outstanding expenses, if any)	
Working capital (C.A.- C.L.)	

Add: Provision / Margin for contingencies	
Net working capital required	

Illustration:

From the following details you are required to make an assessment of the average amount working capital requirement of Sundar Ltd.

Items	**Average period of credit**	**Estimate for the first year**
Purchase of material	6 weeks	2600000
Wages	1 ½ weeks	1950000
Overheads:		
Rent, rates etc.	6 months	100000
Salaries	1 months	800000
Other overheads	2 months	750000
Sales (cash)	---	200000
Sales (credit)	2 months	6000000
Average amount of stock and working progress	---	400000
Average amount of undrawn profit		300000

It is assumed that all expenses and incomes were made at even rate for the year.

Solution:

STATEMENT OF WORKING CAPITAL REQUIREMENTS		
Current Assets:		
Stock and work-in-progress		400000
Debtors (6000000x 2/12)		1000000

		1400000
Less: Current Liabilities		
Creditors (2600000x6/52)	300000	
Wages outstanding (1950000x3/2x1/52)	56250	
Rent, rates outstanding (100000x6/12)	50000	
Salaries outstanding (800000x1/12)	66667	
Other overheads outstanding (750000x2/12)	125000	**597917**
Net working capital required		**802083**

Illustration:

Sun & Co. is desirous to purchase a business and has consulted you and one point which you are asked to advise them is the average amount of working capital which will be required in the first year's working. You are given the following estimates and are instructed to add 10% to your computed figure to allow contingencies:

	Figures for the year Rs.
i. Amount blocked up for stocks:	
Stock of finished product	5000
Stocks of stores, materials, etc.	8000
ii. Average credit given:	
Inland sales- 6 weeks credit	312000
Export sales 1 ½ weeks credit	78000
iii. Lag in payment of wages and other outgoings:	
Wages – 1 ½ weeks	260000
Stocks of materials, etc. 1 ½ months	48000

Rent, Royalties etc. – 6 months	10000
Clerical staff - ½ month	62400
Manager ½ month	4800
Miscellaneous expenses 1 ½ months	48000
iv. Payment in advance:	
Sundry expenses (paid quarterly in advance)	8000
v. Undrawn profit on the average throughout the year	11000

Solution:

Statement showing the calculation of average working capital required		
Current assets:	**Rs.**	**Rs.**
i. Stock of finished products		5000
ii. Stocks of stores materials, etc.		8000
iii. Sundry debtors		
a. Inland (6weeks) 312000x6/52	36000	
b. Export sales (1 ½ weeks) 78000x3/52x1/2	2250	38250
iv. Payments in advance 8000x1/4		2000
		53250
Less: Current Liabilities: (lag in payments of)		
Wages – 1 ½ weeks (260000x3/52x1/2)	7500	
Stocks of materials, etc. 1 ½ months(48000/12x3/2)	6000	
Rent, Royalties etc. – 6 months (10000x6/12)	5000	
Clerical staff - ½ months (62400/12x1/2)	2600	
Manager ½ month (4800/12x1/2)	200	

Miscellaneous expenses 1 ½ months (4800/12x3/2)	6000	**27300**
Net working capital		25950
Add: 10% margin for contingencies		2595
Working capital required		**28545**

UNIT IV

BUDGETING AND BUDGETARY CONTROL

MEANING

A budget is the monetary or/and quantitative expression of business plans and policies to be pursued in the future period of time. The term budgeting is used for preparing budgets and other procedures for planning, co-ordination and control of business enterprise. According to CLMA, Official Terminology, "A budget is a financial and/or quantitative statement prepared prior to a defined period of time, of the policy to be pursued during that period for the purpose of attaining a given objective.

MEANING AND NATURE OF BUDGETARY CONTROL

budgetary control is the process of determining various budgeted figures for the enterprises for the future period and then comparing the budgeted figures with the actual performance for calculating variances, if any. First of all budgets are prepared and then actual results are recorded. The comparison of budgeted and actual figures will enable the management to find out discrepancies and take remedial measures at a proper time. The budgetary control is a continuous process which helps in planning and co-ordination. It provides a method of control too. A budget is a means and budgetary control is the end-result.

According to Brown and Howard, “Budgetary control is a system of controlling costs-which includes the preparation of budgets, co-ordinating the department and establishing responsibilities, comparing actual performance with the budgeted and acting upon results to achieve maximum profitability”.

J. Batty defines it as "A system which uses budgets as a means of planning and controlling all aspects of producing and/or selling commodities and services."

BUDGET, BUDGETING AND BUDGETARY CONTROL

A budget is a blue print of a plan expressed in quantitative terms. Budgeting is technique for formulating budgets. Budgetary control, on the other hand, refers to the principles, procedures and practices of achieving given objectives through budgets

OBJECTIVES OF BUDGETARY CONTROL

Budgetary control is essential for policy planning and control. It also acts as an instrument of coordination, The main objectives of budgetary control are as follows:

1. To ensure planning for future by setting up various budgets. The requirements and expected performance of the enterprise are anticipated.
2. To co-ordinate the activities of different departments.
3. To operate various cost centres and departments with efficiency and economy.
4. Elimination of wastes and increase in profitability.
5. To anticipate capital expenditures for future.
6. To centralise the control system.
7. Correction of deviations from the established standards.
8. Fixation of responsibility of various individuals in the organisation.

CHARACTERISTICS OF GOOD BUDGETING

1. A good budgeting system should involve persons at different levels while preparing die budgets. The subordinates should not feel any imposition on them.
2. There should be a proper fixation of authority and responsibility. The delegation of authority should be done in a proper way.
3. The targets of the budgets should be realistic, if the targets are difficult to be achieved then they will not enthuse the persons concerned.
4. A good system of accounting is also essential to make the budgeting successful.
5. The budgeting system should have a whole-hearted support of the top management

6. The employees should be imparted budgeting education. There should be meetings and discussions and the targets should be explained to the employees concerned.
7. A proper reporting system should be introduced, the actual results should be promptly reported so that performance appraisal is undertaken.

REQUISITES FOR A SUCCESSFUL BUDGETARY CONTROL SYSTEM

For making a budgetary control system successful, following requisites are required :

2. **Clarifying objectives:** The budgets are used to realise objectives of the business.
3. Proper Delegation of Authority and Responsibility.
4. **Proper Communication System:** An effective system of communication is required for a successful budgetary control.
5. **Budget Education:** The employees should be properly educated about the benefits of budgeting system.
6. **Participation** of **all Employees:** Budgeting is done for every segment of the business. It will also require the active participation and involvement of all employees.
7. **Flexibility**: Flexibility in budgets is required to make them suitable under changed circumstances.
8. **Motivation:** Budgets are to be implemented by human beings. Their successful implementation will depend upon the interest shown by the employees.

ESSENTIALS OF BUDGETARY CONTROL

There are certain steps which are necessary for the successful implementation of a budgetary control system. They are as follows :

1	Organisation for budgetary control.
2	Budget centres.
3	Budget officer.
4	Budget manual
5	Budget committee.
6	Budget period.
7	Determination of key factor.

1. **Organisation for Budgetary Control:** The proper organisation is essential for the successful preparation, maintenance and administration of budgets. A Budgetary Committee is formed which comprises the departmental heads of various departments. All the functional heads are entrusted with the responsibility of ensuring proper implementation of their respective departmental budgets.

2. **Budget Centres**: 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 establishment of budget centres is essential for covering all parts of the organisation. The budget centres are also necessary for cost control purposes. The appraisal^ of performance of different parts of the organisation becomes easy when different centres are established.

3. **Budget Manual:** A budget manual is a document which spells out the duties and the also the responsibilities of the various executives concerned with the budgets. It specifies the relations among various functionaries.
   a) A budget manual clearly defines the objectives of budgetary control system. It also gives the benefits and principles of this system.
   b) The duties and responsibilities of various persons dealing with preparation and execution of budgets are also given in a budget manual.

4. **Budget Officer**: The Chief Executive who is at the top of the organisation, appoints some person as Budget Officer. The budget officer is empowered to scrutinise the budgets prepared by different functional heads and to make changes in them, if the situation so demands.
5. **Budget Committee:** In large scale concerns a committee known as Budget Committee is formed. The heads of all the important departments are made members of this committee. The committee is responsible for preparation and execution of budgets.
6. **Budget Period:** A budget period is the length of time for which a budget is prepared. The budget period depends upon a number of factors.
7. **Determination of Key Factor:** The budgets are prepared for all functional area. The constraints on some budgets may have an effect on other budgets too/ factor which influences all other budgets is known as Key Factor or Principal Factor.

BUDGETING VS. FORECASTING

I. FORECASTS are merely well-educated estimates or inferences about the future probable events whereas a budget relates to planned events and is the quantitative expression of business plans and policies to be pursued in the future.

II. Budgeting begins where forecasting ends.

III. CA budget provides a standard for comparison with the results actually achieved and, thus, is an important control device for the management, while a forecast represents merely a probable event over which no control can be exercised.

ADVANTAGES OF BUDGETARY CONTROL

Maximisation of Profit The budgetary control aims at the maximisation of profits of the enterprise.

Co-rodination. The working of different departments and sectors is properly co-ordinated.

Specific Aims. The plans, policies and goals are decided by the top management. AH efforts are put together to reach the common goal of the organization.

Tool for Measuring Performance. By providing targets to various department, budgetary control provides a tool for measuring managerial performance.

Economy. The planning of expenditure will be systematic and there will be economy in spending. The finances will be put to optimum use.

Determining Weaknesses: The deviations in budgeted and actual performance will enable the determination of weak sports.

Corrective Action. The management Will be able to take corrective measures whenever there is a discrepancy in performance.

Consciousness: It creates budget consciousness among the employees. By fixing targets for the employees, they are made conscious of their responsibility.

Reduces Costs: In the present day competitive world budgetary control has a significant role to play. Every Businessman tries to reduce the cost of production for increasing sales. He tries to have those combinations of products where profitability is more.

Introduction of Incentive Schemes: Budgetary control system also enables the introduction of incentive schemes of remuneration.

LIMITATIONS OF BUDGETARY CONTROL

1. **Uncertain Future**: The budgets are prepared for the future period. Despite best estimates made for the future, the predictions may not always come true. The

future is always uncertain and the situation which is presumed to prevail in future may change.

2. **Budgetary Revisions Required:** Budgets are prepared on the assumptions that certain conditions will prevail. Because of future uncertainties, assumed conditions may not prevail necessitating the revision of budgetary targets. The frequent revision of targets will reduce the value of budgets and revisions involve huge expenditures too.
3. **Discourages Efficient Persons**: Under budgetary control system the targets are given to every person m the organisation. The common tendency of people is to achieve the targets only. There may be some efficient persons who can exceed the targets but they will .also feel contented by reaching the targets. So budgets may serve as constraints on managerial initiatives.
4. **Problem of Co-ordination**: The success of budgetary control depends upon the co-ordination among different departments. The performance of one department affects the results of other departments. To overcome the problem of co-ordination a Budgetary Officer is needed.
5. **Conflict among Different Departments:** Budgetary control may lead to conflicts among functional departments.
6. **Depends upon Support of Top Management**: Budgetary control system depends upon the support of top management.

1. **Fixed Budget:** The fixed budgets are prepared for a given level of activity, the budget is prepared before the beginning of the financial year.
2. **Flexible Budgets:** A flexible budget consists of a series of budgets for different level of activity. It , therefore, varies with the level of activity attained. A flexible budget is prepared after taking into consideration unforeseen changes in the conditions of the business. A flexible budget is defined as a budget which by recognising the difference between fixed, semi-fixed and variable cost is

designed to change in relation to the level of activity. The flexible budgets will be useful where level of activity changes from time to time.

DIFFERENCE BETWEEN A FIXED AND FLEXIBLE BUDGET		
Basic of Distinction	***Fixed Budget***	***Flexible Budget***
1. Rigidity	A fixed budget remains the same irrespective of changed situations. It remains inflexible even if volume of business is changed.	A flexible budget is recast to suit the changed circumstances. Suitable adjustments are made if the situation so demands.
2 Conditions	A fixed budget assumes that conditions will remain constant	This budget is changed if level of activity varies.
3. Cost Classification	In Fixed budgets costs are not classified according to their nature.	The costs are studied as per their nature, *i.e.,* fixed variable, semi-variable.
4. Changes in Volume	If the level of activity changes then budgeted and actual results cannot be compared because of change in basis.	The budgets are redrafted as per the changed volume and a comparison between budgeted and actual figures will be possible.
5. Forecasting	Forecasting of accurate results is difficult.	Flexible budgets clearly show the impact of expenses on operations and it helps in making accurate forecasts.
6. Cost Ascertainment	Under changed circumstances costs cannot be ascertained.	The costs can be easily ascertained under different levels of activity. This helps in fixing prices,

Illustration:

Particulars	**Rs.**
Materials	50
Labour	20
Variable Overheads	15
Fixed Overheads (Rs. 50,000)	10
Administrative expenses (5% variable)	10
Selling expenses (20%Fixed)	6
Distribution expenses (10% Fixed)	5
Total cost of sales per unit	116

Solution:

FLEXIBLE BUDGET

	Rs.	*Rs.*	*Rs.*	*Rs.*
Materials	50.00	2,50,000	50.00	3,50,000
Labour	20.00	1.00.000	20.00	1.40:000
Prime Cost	**70.00**	**3,50,000**	**70.00**	**4,90,000**
Factory Overheads:				
Variable Overheads	15.60	75,000	15.00	1.05,000
Fixed Overheads	10.00	50.000	7.14	50.000

Works Cost	**95.00**	**4.75,000**	**92.14**	**6,45,000**
Administrative Expenses	10.00	50.000	7.28	51.000
Cost of production	**105.00**	**5,25,000**	**99.42**	**6,96,000**
Selling Expenses	6.00	30,000	5.66	39,600
Distribution Expenses	5.00	25000	4.86	34000
Total cost of Sales	**116.00**	**580000**	**109.94**	**769600**

Illustration

The following information at 50% capacity is given. Prepare a flexible budget and forecost the profit or loss at 60%, 70% and 90% capacity forecast the profit or loss at 60%, 70% and 90% capacity.

	Expenses at 50% Capacity
Fixed Expenses:	
Salaries	50000
Rent and taxes	40000
Depreciation	60000
Administrative Expenses	70000
Variable Expenses:	
Materials	200000
Labour	250000
Others	40000
Semi-variable Expenses:	
Repairs	100000
Indirect labour	150000
Others	90000

It is estimate J that fixed expenses will remain constant at all capacities. Semi-Variable expenses will not change between 45% and 60% capacity, will rise

by'10% between 60% arid 75% capacity, a further increase of 5% when capacity crosses 75%.

Estimated sales at various levels of capacity are :

Capacity	Sales Rs.
60%	11,00,000
70%	13,00,000
90%	15,00,000

Solution:

FLEXIBLE BUDGET

(Showing Profit & Loss at Various Capacities)

Particulars	*Capacities*			
	50% Rs.	**60%** ***Rs.***	**70%** ***Rs.***	**90%** ***Rs.***
Fixed Expenses:				
Salaries	50000	50000	50000	50000
Rent and taxes	40000	40000	40000	40000
Depreciation	60000	60000	60000	60000
Administrative Expenses	70000	70000	70000	70000
Variable Expenses:				
Materials	200000	240000	280000	360000
Labour	250000	300000	350000	450000
Others	40000	48000	56000	72000
Semi-variable Expenses:				
Repairs	100000	100000	100000	115000
Indirect labour	150000	150000	165000	172500
Others	90000	99000	99000	103500
Total cost	**1050000**	**1148000**	**1280000**	**1493000**

Profit (+) (or) Loss (-)		-48000	+20000	+7000
Estimate sales		**1100000**	**1300000**	**1500000**

Illustration:

With the following data for a 60% activity prepare a budget for production at 80% and 100% capacity:

Production at 60% activity	600 Units
Materials	Rs. 100 per unit
Labour	Rs. 40 per unit
Direct Expenses	Rs. 10 per unit
Factory overheads	Rs. 40,000 (40% fixed)
Administration Expenses	Rs. 30,000 (60% fixed)

Solution:

Flexible Production Budget						
	60% Capacity		***80% Capacity***		***100% Capacity***	
	600 Units		***800 Units***		***1,000 Units***	
	Unit Cost	***Total Cost***	***Unit Cost***	***Total Cost***	***Unit Cost***	***Total Cost***
	Rs.	***Rs.***	***Rs.***	***Rs.***	***Rs.***	***Rs.***
Materials	100	60,000	100	80,000	100	1,00,000
Labour	40	24,000	40	32,000	40	40,000
Direct Expenses	10	6,000	10	8,000	10	10,000
Prime Cost	150	90,000	150	1,20,000	150	1,50,000
Factory Overheads:						

Fixed (40% of Rs. 40,000)	26.67	16,000	20	16,000	16	16,000
Variable*	40	24,000	40	32,000	40	40,000
Works Cost	216.67	1,30,000	210	1,68.000	206	2,06,000
Administrative Expenses:						
Fixed: (60% of Rs. 30,000)	30	18,000	22.50	18,000	18	18,000
Variable	20	12,000	20	16,000	20	20,000
Total cost	**266.67**	**1,60,000**	**252.50**	**2,02,000**	**244**	**2,44.000**

PRODUCTION BUDGET

It is prepared in relation to sales budget. what is to be produced? When is it to be produced?

Steps: production planning, plant capacity sale quantity to be held and preparing sale budget are to be considered to prepare production budget.

A production budget may be prepared as given under:

PRODUCTION BUDGET					
for the period ending 31st Dec, 2008					
Month	*Units required for sale*	*Add closing stock of finished goods*	*Total units required*	*Less opening stock of finished goods*	*Units to be Produced*
January					
February					
March					
April					
May					
June					
July					
August					

September					
October					
November					
December					
Total					

Illustration:

Prepare a production Budget for each month and a summarized production cost Budget for six months period ending 31st December, 2016 from the following data of Product X

vi. The units to be sold for diffrenet months are as follows:

July 2016	1100
August	1100
September	1700
October	1900
November	2500
December	2300
January2017	2000

vii. There will be no work in progress at the end of any month.

viii. Finished units equal to half the sales for the next month will be in stock at the end of each month (including June, 2016).

ix. Budgeted production and production cost for the year ending 31st December, 2016 are as follows:

Production (units)	22000
Direct materials (per unit)	Rs. 10

Direct Wages (per unit) Rs.4

Total Factory Overheads apportioned to products Rs. 88,000.

Solution:

Production budget (for each month from July, 2016to December 2017)				
Month 2016	**Opening stock (units)**	**Sales (units)**	**Closing stock (units)**	**Production (units)**
July	550	1100	550	1100
August	550	1100	850	1400
September	850	1700	950	1800
October	950	1900	1250	2200
November	1250	2500	1150	2400
December	1150	2300	1000	2150
			Total	**11050units**

Production = sales + Closing stock – Opening stock

PRODUCTION COST BUDGET

For six months ending 31st December 2016

	Rate per unit Rs.	**Production units 11050 Amount Rs.**
Direct materials	10.00	110500
Direct wages	4.00	44200
Factory overheads (88000/22000)	4.00	44200
	Total	**198900**

CASH BUDGET

A cash budget is an estimate of cash receipts and disbursements during a future period of time. It proceeds-various other budgets like materials budgets and research and development budget. "The cash budget is an analysis of flow of cash in a business over a future, short or long period of time. It is a forecast of expected cash intake and outlay".

Illustration:

A company is expecting to have Rs. 32,000 cash in hand on 1.4.2008 and it requests you to prepare cash budget for the three months, April to June 2008. The following information is supplied to you

Month	**Sales (Rs.)**	**Purchases (Rs.)**	**Wages (Rs.)**	**Expenses (Rs.)**
February	70000	44000	6000	5000
March	80000	56000	9000	6000
April	96000	60000	9000	7000
May	100000	68000	11000	9000
June	120000	62000	14000	9000

Other information:

a) Period of credit allowed by suppliers is two months.
b) 25% of sales is for cash and the period of credit allowed to customers for credit sales is one month.
c) Delay in payment of wages and expenses one month.
d) Income tax Rs. 28,000 is to be paid in June 2008.

Cash Budget *for the months from April to June 2008*			
	April Rs.	May Rs.	June Rs.

Receipts:			
Opening balance of cash in hand	32000	57000	82000
Receipts from cash sales (25%)	24000	25000	30000
Cash realised from debtors (75% of previous month's sales)	60000	72000	75000
Total (a)	**116000**	**154000**	**187000**
Payments:			
Creditors for purchases (Feb. paid April and so on)	44000	56000	60000
Wages	9000	9000	11000
Expenses	6000	7000	9000
Income Tax	---	---	28000
Total (b)	**59000**	**72000**	**108000**
Closing stock of cash (a-b)	57000	82000	79000

CAPITAL BUDGETING

MEANING AND NATURE OF CAPITAL BUDGETING

Capital budgeting is the process of making investment decisions in capital expenditures. A capital expenditure may be defined as an expenditure the benefits of which are expected to be received over period of time exceeding one year. The main characteristic of a capital expenditure is that the expenditure is incurred at one point of time whereas benefits of the expenditure are realised at different points of time in future. In simple language we may say that a capital expenditure is an expenditure incurred for acquiring or improving the fixed assets, the benefits of which are expected

to be received over a number of years in future. The following are some of the examples of capital expenditure:

NEED AND IMPORTANCE OF CAPITAL BUDGETING

i. **Large Investments.** Capital budgeting decisions, generally, involve large investment of funds. But the funds available with the firm are always limited and the demand for funds far exceeds the resources. Hence, it is very important for a firm to plan and control its capital expenditure.

ii. **Long-term Commitment of Funds.** Capital expenditure involves not only large amount of funds but also funds for long-term or more or less on permanent basis. The long-term commitment of funds increases the financial risk involved in the investment decision. Grater the risk involved, greater is the need for careful planning of capital expenditure, *i.e.* Capital budgeting.

iii. **Irreversible Nature.** The capital expenditure decisions are of irreversible nature. Once the decision for acquiring a permanent asset is taken, it becomes very difficult to dispose of these assets without incurring heavy losses.

iv. **Long-term Effect on Profitability.** Capital budgeting decisions have a long-4erm and significant effect on the profitability of a concern. Not only the present earnings of the firm are affected by the investments in capital assets but also the future growth and profitability of the firm depends upon the investment decision taken today. An unwise decision may prove disastrous and fatal to the very existence of the concern. Capital budgeting is of utmost importance to avoid over investment or under investment in fixed assets.

v. **Difficulties of Investment Decisions.** The long term investment decisions are difficult to be taken because *(I)* decision extends to a series of years beyond the current accounting period, *(ii)* uncertainties of future and *(iii)* higher degree of risk.

vi. **National Importance**. Investment decision though taken by individual concern is of national importance because it determines employment, economic activities and economic growth.

Thus, we may say that without using capital budgeting techniques a firm may involve itself in a losing project. Proper timing of purchase, replacement, expansion and alternation of assets is essential.

CAPITAL BUDGETING PROCESS

Capital budgeting is a complex process as it involves decisions relating to the investment of current funds for the benefit to the achieved in future and the future is always uncertain. However, the following procedure may be adopted in the process of capital budgeting :

1. **Identification of Investment Proposals:** The capital budgeting process begins with the identification of investment proposals. The proposal or the idea about potential investment opportunities may originate from the top management or may come from the rank and file worker of any department or from any officer of the organisation. The departmental head analyses the various proposals in the light of the corporate strategies and submits the suitable proposals to the Capital Expenditure Planning Committee in case of large organisations or to the officers concerned with the process of long-term investment decisions.
2. **Screening the Proposals:** The Expenditure Planning Committee screens the various us proposals received from different departments. The committee views these proposals from various angles to ensure that these are in accordance with the corporate strategies or selection criterion of the firm and also do not lead to departmental imbalances.
3. **Evaluation of Various Proposals:** The next step in the capital budgeting process is to evaluate the profitability of various proposals. There are many

methods which may be used for this purpose such as payback period method, rate of return method, net present value method, internal rate of return method etc. All these methods of evaluating profitability of capital investment proposals have been discussed in detail separately in the following pages of this chapter.

a. It should, however, be noted that the various proposals to the evaluated may be classified as:

(i) independent proposals

(ii) contingent or dependent proposals and

(iii) mutually exclusive proposals.

Independent proposals are those which do not compete with one another and the same may be either accepted or rejected on the basis of a minimum return on investment required. The contingent proposals are those whose acceptance depends upon the acceptance of one or more other proposals, *e.g.,* further investment in building or machineries may have to be undertaken as a result of expansion programme. Mutually exclusive proposals are those which compete with each other and one of those may have to be selected at the cost of the other.

4. **Fixing Priorities:** After evaluating various proposals, the unprofitable or uneconomic proposals may be rejected straight away. But it may not be possible for the firm to invest immediately in all the acceptable proposals due to limitation of funds. Hence, it is very essential to rank the various proposals and to establish priorities after considering urgency, risk and profitability involved therein.
5. **Final Approval and Preparation of Capital Expenditure Budget:** Proposals meeting the evaluation and other criteria are finally approved to be included in the Capital Expenditure Budget. However, proposals involving smaller investment may be decided at the lower levels for expeditious action. The capital expenditure budget lays down the amount of estimated expenditure to be incurred on fixed assets during the budget period.

6. **Implementing Proposal:** Preparation of a capital expenditure budgeting and incorporation of a particular proposal in the budget does not itself authorise to go ahead with the implementation of the project. A request for authority to spend the amount should further be made to the Capital Expenditure Committee which may like to review the profitability of the project in the changed circumstances.
    a. Further, while implementing the project, it is better to assign responsibilities for completing the project within the given time frame and cost limit so as to avoid unnecessary delays and cost over runs. Network techniques used in the project management such as PERT and CPM can also be applied to control and monitor the implementation of the projects.
7. **Performance Review:** The last stage in the process of capital budgeting is the evaluation of the performance of the project. The evaluation is made through post completion audit by way of comparison of actual expenditure on the project with the budgeted one, and also by comparing the actual return from the investment with the anticipated return. The unfavourable variances, if any should be looked into and the causes of the same be identified so that corrective action may be taken in future.

KINDS OF CAPITAL BUDGETING DECISIONS

Further, in view of the investment proposals under consideration, capital budgeting decisions may also
be classified as.

(i) Accept Reject Decisions
(ii) Mutually Exclusive Project Decisions
(Hi) Capital Rationing Decisions.

(i) **Accept Reject Decisions:** Accept -reject decisions relate to independent projects which do not compete with one another. Such decisions are generally taken on the basis of minimum return on investment. All those proposals which yield a rate of return higher than the minimum required rate of return or the cost of capital are accepted and the rest are rejected. If the proposal is accepted the firm makes investment in it, and if it is rejected the firm does not invest in the same.

(ii) **Mutually Exclusive Project Decisions:** Such decisions relate to proposals which compete with one another in such way that acceptance of one automatically excludes the acceptance of the other. Thus, one of the proposals is selected at the cost of the other. For example, a company may have the option of buying a new machine, or a second hand machine, or taking an old machine on hire or selecting a machine out of more than one brands available in the market. In such a case, the company may select one best alternative out of the various options by adopting some suitable technique or method of capital budgeting. Once one alternative is selected the others are automatically rejected.

(iii) **Capital Rationing Decisions:** A firm may have several profitable investment proposals but only limited funds to invest. In such a case, these various investments proposals compete for limited funds and, thus, the firm has to ration them. The firm selects the combination of proposals that will yield die greatest profitability by ranking them in descending order of their profitability. The capital rationing decisions have been separately discussed in this chapter.

METHODS OF CAPITAL BUDGETING OR EVALUATION OF INVESTMENT PROPOSALS

At each point of time a business firm has a number of proposals regarding various projects in which it can invest funds. But the funds available with the firm are always limited and it is not possible to invest funds in all the proposals at a time. Hence, it is very essential to select from amongst the various competing proposals,

those which give the highest benefits. The crux of the capital budgeting is the allocation of available resources to various proposals. There are many considerations, economic as well as non-economic, which influence the capital budgeting decisions. The crucial factor that influences the capital budgeting decision is the profitability of the prospective investment Yet the risk involved in the proposal cannot be ignored because profitability and risk are directly related, i.e.higher the profitability, the greater the risk and *vice-versa.*

There are many methods of evaluating profitability of capital investment proposals. The various commonly used methods are as follows :

(A)Traditional methods:

(1)Pay-back Period Method or Pay out or Pay off Method.

(2)Improvement of Traditional Approach to Pay Back Period Method.

(3)Rate of Return Method or Accounting Method.

(B)Time -adjusted method or discounted Methods:

(4)Net present Value Method.

(5)Internal Rate of Return Method.

(6)Profitability Index Method.

1. **PAY-BACK PERIOD METHOD**

The 'Pay back' sometimes called as pay out or pay off period method represents the period in which the total investment in permanent assets pays back itself. This method is based on the principle mat every capital expenditure pays itself back within a certain period out of the additional earnings generated from the capital assets. Thus, it measures the period of time for the original cost of a project to be recovered from the additional earnings of the project itself. Under this method, various investments are ranked according to the length of their payback period in such a manner that the investment with a shorter payback period is preferred to the one which has longer pay back period.

In case of evaluation of a single project it is adopted if it pays back for itself within a period specified by the management and if the project does not pay back itself within the period specified by the management then it is rejected.

The pay-back period can be ascertained in the following manner:

(1) Calculate annual net earnings (profits) before depreciation and after taxes; these are called annual cash inflows.

(2) Divide the initial outlay (cost) of the project by the annual cash inflow, where the project generates constant annual cash inflows.

Thus, where the project generates constant cash inflows.

Pay-back period = Cash Outlay of the Project or Original Cost of the Asset / Annual Cash Inflows

(3) Where the annual cash inflows (Profit before depreciation and after taxes) are unequal, the payback period can be found by adding up the cash inflows until the total is equal to the initial cash outlay of project or original cost of the asset.

Illustration:

A project costs Rs.1,00,000 and yields an annual cash inflow of Rs. 20,000 for 8 years. Calculate its pay-back period.

Solution:

The Pay-back period for the project is as follows:

Pay back Period = Initial Outlay of the Project / Annual Cash Inflow

= 100000 / 20000 = 5Years

Illustration:

Determine the pay-back period for a project which requires a cash outlay of Rs. 10,000 and generates cash inflows of Rs.2,000, Rs.4,000,Rs.3,000 and Rs.2,000 in the first, second, third and fourth year respectively.

Solution:

Total Cash Outlay = Rs. 10,000

Total Cash Inflow for the first 3 years = Rs. 2,000+4,000+3,000=Rs. 9,000

Upto the third year the total cost is not recovered but the total cash inflows for the four years are Rs.9,000+2,000= Rs. 11000 i.e. Rs. 1,000 more than the cost of the project. So the payback period is somewhere between 3 and 4 years. Assuming that the cash inflows occur evenly throughout the year, the time required to recover Rs. 1,000 will be 1,000/2,000) 12=6 months.

Hence payback period is 3 years and 6 months.

Illustration:

A project cost Rs. 5,00,000 and yields annually a profit of Rs.80,000 after depreciation @ 12%p.a. but before tax of 50%. Calculate the Payback period.

Solution:

	Rs.
Profit before tax	80,000
Less tax® 50%	40,000
Profit after tax	40,000
Add back depreciation @ 12% on Rs.5,00,000	60.000
Profit before depreciation but after tax or Annual Cash Inflow	1.00.000

Pay back period = Cost of the Project / Annual Cash Inflow

= 500000 / 100000 = 5years.

Advantages of Pay-back Period Method

1. The main advantage of this method is that it is simple to understand and easy to calculate.
2. It saves in cost, it requires lesser time and labour as compared to other methods of capital budgeting.
3. In this method, as a project with a shorter pay-back period is preferred to the one having a longer pay-back period, it reduces the loss through obsolescence and is more suited to the developing countries, like India, which are in the process of development and have quick obsolescence.
4. Due to its short term approach, this method is particularly suited to a firm which has shortage of cash or whose liquidity position is not particularly good.

Disadvantages of Pay-back Method

Though pay-back period method is the simplest, oldest and most frequently used method, it suffers from the following limitations :

1. It does not take into account the cash inflows earned after the payback period and hence the true profitability of the projects cannot be correctly assessed.
2. This method ignores the time value of money and does not consider the magnitude and timing of cash inflows. It treats all cash flows as equal though they occur in different periods. It ignores the fact that cash received today is more important than the same amount of cash received after, say 3 years. In spite of the above mentioned limitations, this method can be used in evaluating the profitability of short term and medium term capital investment proposals.

3. It does not take into consideration the cost of capital which is a very important factor in making sound investment decisions.
4. It may be difficult to determine the minimum acceptable pay-back period, it is usually, a subjective decision.
5. It treats each asset individually in isolation with other assets which is not feasible in real practice.
6. Pay-back period method does not measure the true profitability of the project as the period considered under this method is limited to a short period only and not the full life of the asset.

RATE OF RETURN METHOD

This method takes into account the earnings expected from the investment over their whole life. It is known as Accounting Rate of Return method for the reason that under this method, the Accounting concept of profit (net profit after tax and depreciation) is used rather than cash inflows. According to this method, various projects are ranked, in order of the rate of earnings or rate of return. The project with the higher rate of return is selected as compared to the one with lower rate of return. This method can also be used to make decision as to accepting or rejecting a proposal. The expected return is determined and the project which has a higher rate of return than the minimum rate specified by the firm called the cut off rate, is accepted and the one which gives a lower expected rate of return than the minimum rate is rejected.

Average rate of return method:

Under this method average profit after tax and depreciation is calculated and then it is divided by the total capital outlay or total investment in the project. In the words, establishes the relationship between average annual profits to total investments.

Average Rate of Return =

Total profits (after dep. &taxes) / Net Investment in the project X No. of years of profits X 100

(OR)

Average Annual Profits / Net Investment in the project X 100

Illustration:

A project requires an investment of Rs. 500000 and has a scrap value of Rs. 20000after five years. It is expected to yield profits after depreciation and taxes during the five years amounting to Rs. 40000, Rs. 60000, Rs. 70000, Rs. 50000 and Rs. 20000. Calculate the average rate of return on the investment.

Solution:

Total profit = 40000 + 60000 + 70000 + 50000 + 20000 = Rs. 240000

Average profit = Rs. 240000 / 5 = Rs. 48000

Net Investment in the project = Rs. 500000 – 20000 (Scrap value) = Rs. 480000.

Average Rate of Return = Average Annual profit / Net Investment in the project X 100

= 48000 / 480000 X 100 = 10%

Advantages of Rate of Return Method

a) It is very simple to understand and easy to operate.
b) It uses the entire earnings of a project in calculating rate of return and not only the earnings upto pay-back period and hence gives a better view of profitability as compared to pay-back period method.
c) As this method is based upon accounting concept of profits, it can be readily calculated from the financial data.

Disadvantages of Rate of Return Method

a) This method also like pay-back period method ignores the time value of money as the profits earned at different points of time are given equal weight by averaging the profits. It ignores the fact that a rupee earned today is of more value than a rupee earned an year after, or so.

b) It does not take into consideration the cash flows which are more important than the accounting profits.

c) It ignores the period in which the profits are earned as a 20% rate of return in 27_2 years may be considered to be better than 18% rate of return for 12 years. This is not proper because longer the term of the project, greater is the risk involved.

d) This method cannot be applied to a situation where investment in a project is to be made in parts.

TIME-ADJUSTED OR DISCOUNTED CASH FLOW METHODS :

The traditional methods of capital budgeting *i.e.* pay-back method as well as accounting rate of return method, suffer from the serious limitations that give equal weight to present and future flow of incomes. These methods do not take into consideration the time value of money, the fact that a rupee earned today has more value than a rupee earned after five years. The time-adjusted or discounted cash flow methods take into account the profitability and also the time value of money. These methods also called modern methods of capital budgeting are becoming increasingly popular day by day. Following are the discounted cash flow methods;

NET PRESENT VALUE METHOD

The net present value method is a modern method of evaluating investment proposals. This method takes into consideration the time value of money and attempts to calculate the return on investments by introducing the factor of time element. It recognises the fact that a rupee earned today is worth more than the same rupee earned tomorrow. The net present values of all inflows and outflows of cash occurring during the entire life of the project is determined separately for each year by discounting these flows by the firm's cost of capital or a pre-determined rate. The following are the necessary steps to be followed for adopting the net present value method of evaluating investment proposals :

(i) First of all determine an appropriate rate of interest that should be selected as the minimum required rate of return called 'cut -off rate or discount rate. The rate should be a minimum rate of return below which the investor considers that it does not pay him to invest. The discount rate should be either the actual rate of interest in the market on long-term loans or it should reflect the opportunity cost o capital of the investor.

(ii) Compute the present value of total investment outlay, *i.e.* cash outflows at the determined discount rate. If the total investment is to be made in the initial year, the present value shall be the same as the cost of investment.

(iii) Compute the present values of total investment proceeds, *i.e.*, cash inflows, (profit before depreciation and after tax) at the above determined discount rate.

(iv) Calculate the net present value of each project by subtracting the present value of cash inflows from the present value of cash outflows for each project.

(v) If the net present value is positive or zero, *i.e.,* when present value of cash inflows either exceeds or is equal to the present values of cash outflows, the proposal may be accepted. But in case the present value of inflows is less than the present value of cash outflows, the proposal should be rejected.

(vi) To select between mutually exclusive projects, projects should be ranked in order of net present values, *i.e.* the first preference should be given to the project having the maximum positive net present value.

For clear understanding, a portion of the table is re produced below:

PRESENT VALUE TABLE

(Present value of Rel payable or receivable Annually for N years)

Year	***8%***	***10%***	***12%***	***14%***	***15%***	***20%***
01	0.92593	0.90909	0.89286	0.87719	0.86957	0.83333
02	.85734	.82654	.79719	.76947	.75614	.69444
03	.79383	.75131	.71178	.67497	.65752	.57870

04	.73503	.68301	.63552	.59208	.57175	.48225
05	.68058	.62092	.56743	.51937	.49718	.40188
06	.63017	.56447	.50663	.45559	.43233	.33490
07	.58349	.51361	.45305	.39964	.37594	.27908
08	.54027	.46651	.40388	.35056	.32690	.23257
09	.50025	.42410	.36061	.30874	.28426	.19381
10	.46319	.38554	.32197	.26974	.24718	.16151

Illustration: From the following information calculate the net present value of the two projects arid suggest which of the two projects should be accepted assuming a discount rate of 10%.

	Project X	**Project Y**
Initial Investment	Rs. 20000	Rs. 30000
Estimated Life	5 years	5 Years
Scrap Value	Rs. 1000	Rs. 2000

The profits before depreciation and after taxes (cash flows) are as follows

	Year 1 Rs.	Year 2 Rs.	Year 3 Rs.	Year 4 Rs.	Year 5 Rs.
Project X	5000	10000	10000	3000	2000
Project Y	20000	10000	5000	3000	2000

Solution:

Calculation for net present value **Project X**			
Year	Cash flows	Present value of Re. 1 @10% (Discount	Present value of net cash flows Rs.

		factor) using present value tables Rs.	
1	5000	.909	4545
2	10000	.826	8260
3	10000	.751	7510
4	3000	.683	2049
5	2000	.621	1242
5 (Scrap Value)	1000	.621	621
			24227

Present value of all cash inflows	24227
Less: Present value of initial investment	20000
Net present value	**4227**

Calculation for net present value **Project Y**			
Year	Cash flows	Present value of Re. 1 @10% (Discount factor) using present value tables Rs.	Present value of net cash flows Rs.
1	20000	.909	18180
2	10000	.826	8260
3	5000	.751	3755
4	3000	.683	2049
5	2000	.621	1242
5 (Scrap Value)	2000	.621	1242
			34728

Present value of all cash inflows	34728
Less: Present value of initial investment	30000
Net present value	**4728**

We find that net present value of project Y is higher than the net present value of project X and hence it is suggested that project Y should be selected.

Advantages of the Net Present Value Method

The advantages of the net present value method of evaluating investment proposals are as follows:

1. It recognises the time value of money and is suitable to be applied in a situation with uniform cash outflows and uneven cash inflows or cash flows at different periods of time.
2. It takes into account the earnings over the entire life of the project and the true profitability of the investment proposal can be evaluated.
3. It takes into consideration the objective of maximum profitability.

Disadvantages of the Net Present Value Method

The net present value method suffers from the following limitations:

1. As compared to the traditional methods, the net present value method is more difficult to understand and operate.
2. It may not give good results while comparing projects with unequal lives as the project having higher net present value but realised in a longer life span may not be as desirable as a project having something lesser net present value achieved in a much shorter span of life of the asset.
3. In the same way as above, it may not give good results while comparing projects with unequal investment of funds.
4. It is not easy to determine an appropriate discount rate.

INTERNAL RATE OF RETURN METHOD

The internal rate of return method is also a modern technique of capital budgeting that takes into account the time value of money. It is also known as 'time adjusted rate of return' discounted cash flow' 'discounted rate of return,' 'yield method,' and 'trial and error yield method'. In the net present value method the net present value is determined by discounting the future cash flows of a-project at a predetermined or specified rate called the cut-off rate. But under the internal An rate of returiLmethod, the cash flows of a project are discounted at a suitable rate by hit and trial method, which equates the net present value so calculated to the amount of the investment. Under this method, since the discount rate is determined internally, this method is called as the internal rate of return method. The internal rate of return can be defined as that rate of discount at which the present value of cash-inflows is equal to the present value of cash outflows. It can be determined with the help of the following mathematical formula.

$$C = A_1 / (1+r)^1 + A_2 / (1+r)^2 + A_3 / (1+r)^3 + \ldots\ldots\ldots + A_n / (1+r)^n$$

Where,

C = Initial Outlay at time Zero.

$A_1, A_2, A_3 \ldots A_n$ = Future net cash flows at different periods.

2,3…….. = number of years

r = rate of discount of internal rate of return.

The internal rate of return can also be determined with the help of present value tables. The following steps are required to practice the internal rate of return method.

1. Determine the future net cash flows during the entire economic life of the project. The cash inflows are estimated for future profits before depreciation but after taxes.
2. Determine the rate of discount at which the value of cash inflows is equal to the present value of cash outflows. This may be determined as explained after step (4).
3. Accept the proposal if the internal rate of return is higher than or equal to the minimum required rate of return, *i.e.* the cost of capital or cut off rate and reject the proposal if the internal rate of return is lower than the cost of cut-off rate.
4. In case of alternative proposals select the proposal with the highest rate of return as long as the rates are higher than the cost of capital or cut-off-rate.

DETERMINATION OF INTERNAL RATE OF RETURN (IRR)

(a) When the annual net cash flows are equal over the life of the asset: Firstly, find out present value fitclor by dividing initial outlay (cost of the investment) by annual cash flow, *ie.,*

Present Value Factor = Initial outlay / Annual Cash Flow

Illustration:

Initial Outlay	Rs.50,000
Life of the asset	5 years
Estimated Annual Cash -flow	Rs. 12,500

Calculate the internal rate of return.

Solution:

Present Value Factor = Initial outlay / Annual Cash Flow

= 50,000/ 12500 = 4

Consulting Present Value Annuity tables for 5 years periods at Present Value Factor of 4,

Internal Rate of Return = 8% approx

When the annual cash flows are unequal over the life of the asset:

In case annual cash flows are unequal over the life of the asset, the internal rate of return cannot be determined according to the technique suggested above. In such cases, the internal rate of return is calculated by hit and trial and that is why this method is also known as hit and trial yield method. We may start with any assumed discount rate and find out the total present value of cash outflows which is equal to the cost of the initial investment where total investment is to be made in the beginning. The rate, at which the total present value of all cash inflows equals the initial outlay, is the internal rate of return. Several discount rates may have to be tried until the appropriate rate is found. The calculation process may be summed up as follows:

1. Prepare the cash flow table using an arbitrary assumed discount rate to discount the net cash flows to the present value.
2. Find out the Net Present Value by deducting from the present value of total cash flows calculated in *(i)* above the initial cost of the investment.
3. If the Net Present Value (NPV) is positive, apply higher rate of discount.
4. If the higher discount rate still gives a positive net present value, increase the discount rate further until the NPV becomes negative.
5. If the NPV is negative at this higher rate, the internal rate of return must be between these two rates:

Illustration:

Initial Investment	Rs. 60000
Life of the Asset	4 years

Estimated Net Annual Cash Flows :	Rs.
1st Year	15000
2nd Year	20000
3rd Year	30000
4th Year	20000

Calculate Internal Rate of Return.

Solution:

Cash Flow Table at Various Assumed Discount Rates of 10% 12% 14% & 15%

Year	*Annual Cash*	*Discount rate 10%*		*Discount rate 12%*		*Discount rate 14%*		*Discount rate 15%*	
	Flow	*P.V.F.*	*P.V.*	*P.V.F.*	*P.V.*	*P.V.F.*	*P.V.*	*P.V.F.*	*P.V.*
	Rs.		*Rs.*		*Rs.*		*Rs.*		*Rs.*
1.	15.000	.909	13,635	.892	13,380	.877	13,155	.869	13,035
2.	20,000	.826	16,520	.797	15,940	.769	15,380	.756	15,120
3.	30,000	.751	22,530	.711	21,330	.674	20,220	.657	19,710
4.	20,000	.683	13,660	.635	12,700	.592	11,840	.571	11,420
			66,345		**63,350**		**60,595**		**59,285**

The present value of net cash flows at 14% rate of discount is Rs.60,595 and at 15% rate of discount it is Rs. 59,285. So die initial cost of investment which is Rs. 60,000 falls in between these two discount rates. At 14% the NPV is + 595 but at 15% the NPV is -715, we may say that

IRR= 14% +595 / 595+715 X (15%- 14%) = 14.45%.

Advantages of Internal Rate of Return Method

The internal rate of return method has the following advantages :

1. Like the net present value method, it takes into account the time value of money and can be usefully applied in situations with even as well as un even cash flow at different periods of time.
2. It considers the profitability of the project for its entire economic life and hence enables evaluation of true profitability.
3. The determination of cost of capital is not a prerequisite for the use of this method and hence it is better than net present value method where the cost of capital cannot be determined easily.
4. It provides for uniform ranking of various proposals due to the percentage rate of return.
5. This method is also compatible with the objective of maximum profitability and is considered to be a more reliable technique of capital budgeting.

Disadvantages of Internal Rate of Return Method

In spite of so many advantages, it suffers from the following drawbacks:

1. It is difficult to understand and is the most difficult method of evaluation of investment proposals.
2. This method is based upon the assumption that the earnings are reinvested at the internal rate of return for the remaining life of the project, which is not a justified assumption particularly when the average rate of return earned by the firm is not close to the internal rate of return. In this sense, Net Present Value method seems to be better as it assumes that the earnings are reinvested at the rate of firm's cost of capital.
3. The results of NPV method and IRR method may differ when the projects under evaluation differ in their size, life and timings of cash flows.

PROFITABILITY INDEX METHOD OR BENIF1T COST RATIO

It is also a time -adjusted method of evaluating the investment proposals. Profitability index also called as Benefit-Cost Ratio (B/C) or 'Desirability factor' is the relationship between present value of cash inflows and the present value of cash outflows. Thus

Profitability Index = Present Value of Cash Inflows / Present Value of Cash Outflows

(OR)

P.L = NPV of Cash inflows / Initial Cash outlay

The profitability index may be found for net present values of inflows

P.I. (Net) = NPV(Net Present Value) / Initial Cash Outlay

The net profitability index can also be found as Profitability Index (gross)minus one.

The proposal is accepted if the profitability index is more than one and is rejected in case the profitability index is less than one. The various projects are ranked under this method in order of their profitability index,-in such a manner that one with higher profitability index is ranked higher than the other with lower profitability index.

Advantages and Disadvantages of Profitability Index Method

The method is a slight modification of the Net Present Value Method. The net present value method has one major drawback that it is not easy to rank projects on the basis of this method particularly when the costs of the projects differ significantly. To evaluate such projects, the profitability index method is most suitable. The other advantages and disadvantages of this method are the same as those of net present value method.

Illustration 20. The initial cash outlay of a project is Rs. 50;000 and it generates cash inflows of Rs. 20,000, Rs. 15,000 Rs.25,000 and Rs. 10,000 in four years. Using

present value index method, appraise profitability of the proposed investment assuming 10% rate of discount.

Solution:

Calculations of Present Values and Profitability Index			
Year	*Cash inflows Rs.*	*Present Value Factor @10%*	*Present Value Rs.*
1.	20,000	.909	18,180
2.	15,000	.826	12,390
3.	25.000	.751	18,775
4.	10,000	.683	6.830
			56,175
			Rs.
Total Present Value			56,175
Less: Initial Outlay			50,000
Net Present Value			6.175

Profitably Index(gross) = Present Value of Cash Inflows / Initial Cash Outlay

= 56712 / 50000 = 1.1235

As the P.I is higher than 1, the proposal can be accepted.

Net Profitability Index= NPV / Initial Cash Outlay

= 6175 / 50,000 = .1235

or N.P.I. = 1.1235-1=0.1235.

Ai the net profitability index is positive, the proposal can be accepted.

COMPARISON BETWEEN NPV AND IRR (NPV Vs. IRR)

The Net Present Value Method and the Internal Rate of Return Method are similar in the sense that both are modem techniques of capital budgeting and both take into account the time value of money. In fact, both these methods are discounted cash flow techniques. However, there are certain basic differences between these two method of capital budgeting :

1. In the net present value method, the present value is determined by discounting the future cash flows of a project at a predetermined or specified rate called the cut off rate based on cost of capital. But under the internal rate of return method, the cash flows are discounted at a suitable rate by hit and trial method which equates the present value so calculated to the amount of the investment. Under IRR method, discount rate is not predetermined or known as is the case in NPV method.
2. The NPV method recognises the importance of market rate of interest or cost of capital. It arrives at the amount to be invested in a given project so that its anticipated earnings would recover the amount invested in the project at market rate. Contrary to this, the IRR method does not consider the market rate of interest and seeks to determine the maximum rate of interest at which funds invested in any project could be repaid with the earnings generated by the project
3. The basic presumption of NPV method is that intermediate cash inflows are reinvested at the cut off rate, whereas, in the case of IRR method, intermediate cash flows are presumed to be reinvested at the internal rate of return.
4. The results shown by NPV method are similar to that of IRR method under certain situations, whereas, the two give contradictory results under some other circumstances. However, it must be remembered that NPV method using a predetermined cut -off rate is more reliable than the IRR method for ranking two or more capital investment proposals.

Illustration: A firm whose cost of capital is 10% is considering two mutually exclusive projects X and Y the cash flows of which are given as follows

Year	Project X	Project Y
0	-100000	-70000
1	80000	60000
2	80000	60000

Suggest which project should be taken up using: a) Net presnt value method b) Profitability Index method

Solution:

Year	*P.V. Factor at 10%*	*Project X*		*Project Y*	
		Cash flow (Rs.)	*Present Value (Rs.)*	*Cash Flow (Rs.)*	*Present Value (Rs.)*
0	1	-1,00,000	-1,00,000	-70,000	-70,000
1	.909	80,000	72,720	60,000	54^40
2	.826	80,000	66080	60,000	49,560
Net Present Value (NPV)			**38,800**		**34,100**
Profitability Index (PI) = Present value of cash Inflows / Present value of cash Outflows			138,800/ 1,00,000 =1.39		1,04,100 / 70.000 =1.49

Suggestion: According to Net Present Value method project X is acceptable because of its higher

Illustration: (Pay Back Period Method)

Moon Ltd. is producing articles mostly by manual labour and is considering to replace it a new machine. There are two alternative models M and N of the new machine.

Prepare a statement of liability showing the payback period from the following information:

	Machine M	**Machine N**
Estimated life of machine	4 years	5 years
Cost of machine	Rs 90,000	Rs 1,80,000
Estimated savings in scrap	5,000	8,000
Estimated savings in direct wages	60,000	80,000
Additional cost of maintenance	8,000	10,000
Additional cost of supervision	12,000	18,000

Solution

	Machine M [Rs]	**Machine N [Rs]**
Estimated savings per annum		
scrap	5000	8000
Direct wages	60000	80000
Total savings[a]	65000	88000
Additional cost per annum		
Maintenance	8000	10000
supervision	12000	18000
Total additional cost[b]	20000	28000
Net savings or annual cash inflows[a-b]	45000	60000
Pay back period =initially	90000/45000=2 years	180000/60000=3 years

outlay of the project/ annual cash inflow		

As pay back period in case of machine M is less than that in case of machine N, machine M is recommended.

Note. Tax has been ignored as the rate of tax has not been given.

ADVANTAGES OF PAYBACK PERIOD METHOD

The main advantage of method is that it is simple to understand and easy to calculate. It saves in cost, it requires lesser time and labour as compared to other methods of capital budgeting.

DISADVANTAGES

It ignores time value of money. It doesn't take into account cost of capital.

Illustration: (Average Rate of Return Method)

Calculate the average rate of return for projects A and B from the following

	Project A	**Project B**
Investments	Rs. 20000	Rs. 30000
Expected life[no salvage value]	4years	5years
Projected net income[after interest, depreciation and taxes]		
Years	Project A Rs	Project B Rs
1	2000	3000
2	1500	3000
3	1500	2000
4	1000	1000
5		1000

	6000	10000

If the required rate of return is 12percent which project should be undertaken

SOLUTION

	Project A Rs	**Project B Rs**
Total profit[after depreciation ,interest and taxes]	6000	10000
Average profit	6000/4=1500	10000/4=2000
Net investment on the project	20000	30000
Average rate of return	1500/20000*100	2000/30000*100
Average annual profit /net investment in the project *100	7.5 percent	6.66percent
But if we calculate rate of return on average investment which is initial investment divided by 2 then average investment or average investment	20000/2 =10000	30000/2 =15000
Average return on investment	1500/10000*100	2000/15000*100
Investment	15percent	13.33percent

The average return on average investment is higher in case of project A and is also higher than the required rate of return of 12percent and hence project A is suggested to be undertaken.

Illustration: (Pay Back, Net Present Value, Profitability Index And IRR)

A company has an investment opportunity costing Rs 40000 with the following expected net cash flow after taxes and before depreciation.

Years	Net cash flow Rs
1	7000
2	7000
3	7000
4	7000
5	7000
6	8000
7	10000
8	15000
9	10000
10	4000

Using 10 percent as the cost of capital ,determine the following

[a] pay back period

[b] net present value at 10 percent discount factor

[c] profitability index at 10 percent discount factor

[d]internal rate of return with the help of 10 percent and 15 percent discount factor

Note

Year	Present value of Re 1at 10 percent discount rate	Present value of Re 1 at 15 percent discount rate
1	0.909	0.870
2	0.826	0.756
3	0.751	0.658
4	0.683	0.572
5	0.621	0.497
6	0.564	0.432

7	0.513	0.376
8	0.467	0.327
9	0.424	0.284
10	0.386	0.247

Solution:

[A] CALCULATION OF PAY BACK PERIOD	
Cash outlay of the project	40000
Total cash inflow for the first five years	35000
Balance of cash outlay left to be paid back in the 6th year	5000
Cash inflow for 6th year	8000
So the payback period is between 5th and 6th years	5years+5000/8000=5*5/8

[B] CALCULATION OF NET PRESENT VALUE AT 10 PERCENT DISCOUNT RATE

Year [col1]	**Net cash inflow [col2] Rs**	**Present value at discount rate of 10 percent [col3]**	**Present value [col2*col3] Rs**
1	7000	0.909	6363
2	7000	0.826	5782
3	7000	0.751	5257
4	7000	0.683	4781
5	7000	0.621	4347
6	8000	0.564	4512
7	10000	0.513	5130
8	15000	0.467	7005

9	10000	0.424	4240
10	4000	0.386	1544
	Total		**48961**

Net present

value =present value of inflow-cost of the investment

=Rs48961-40000=8961

[C]CALCULATION OF PROFITABILITY INDEX @ 10% DISCOUNT RATE

Profitability index =present value of cash inflows/cost of investment =48961/40000=1.22

[d] CALCULATION OF INTERNAL RATE OF RETURN

As the net present value [calculate in [b]above] is positive ,we must calculate net present value at a higher rate of discount i.e. 15 percent as given

Year	Net cash inflow Rs	Present value at discount rated of 15 percent	Present value Rs
1	**7000**	**.870**	**6090**
2	**7000**	**.756**	**5292**
3	**7000**	**.658**	**4606**
4	**7000**	**.572**	**4004**
5	**7000**	**.497**	**3479**
6	**8000**	**.432**	**3456**
7	**10000**	**.376**	**3760**
8	**15000**	**.327**	**4905**
9	**10000**	**.284**	**2840**
10	**4000**	**.247**	**988 total 39420**

Net present value at 15 percent=39420-40000=-580

As the net present value at 15 percent discount rate is negative hence internal rate of return fall in between 10 percent and 15 percent. The correct internal rate of return can be calculated as follows

10percent +positive NPV at 10 percent/PV at 10 percent –PV at 15 percent *[15 percent-10 percent]

=10percent + 8961/48961-39420*5 percent

=10percent+8961/9541*5/100

=10 percent + 4.7 percent

=14.7 percent

UNIT V

MANAGEMENT INFORMATION SYSTEMS (MIS) AND REPORTING

INTRODUCTION

Management needs full information before taking any decisions. Good decisions can minimise costs and optimise returns. Management Information System (MIS) can be helpful to the management in undertaking managerial functions smoothly and effectively. It is an approach of providing timely, adequate and accurate information to the right person in the organisation which helps him in taking right decisions. So, management information system is a planned and organised approach to the transferring of intelligence within an organisation for the organisation of management. The information is furnished into useful quantum of knowledge in the form of reports

ELEMENTS OF MIS

The following are the elements of MIS:

1. The first element of MIS is the determining of informational needs, What type of information will be required and what will be its sources etc. ? When these questions are decided then it will be possible to decide the modus operandi for collecting the required data, etc.
2. The collected information should be properly processed, sorted and stored.
3. Another element of MIS is to determine the time and quantum of information needed. The information is sent to the desired managerial levels within the specified time.
4. MIS also involves the process of measuring the adequacy of purpose served. If the information not been sufficient and desired purpose has not been served then the base of collecting should be enlarged or modified.

TYPES OF MIS

Management information system is of two types :

1. **Management Operating System:** This system is meant for meeting the information needs of lower and middle level managements. The information supplied generally relates to operations of the business. The figures about finance, raw materials, labour, production, sales, etc ; are supplied to the concerned persons. The operational information is required to see the pace of work and make necessary changes, if needed. The supply of information is quick and regular. The use of electronic devices is made for. processing and analysing data.
2. **Management Reporting System:** This system is designed to supply information to top level management for decision-taking. The information is presented in a way which enables the management to take quick decisions. Sometimes, comparative information is presented to see the present performance in relation to past one. The purpose of this information is to present before management the real positidn of the enterprise. The supply of this information is slow because information from various sources is first compiled. Decision making requires full information about all important areas of the enterprise.

INSTALLING MIS

The installation of management information system requires the following steps:

1. **Preliminaries:** The introduction of MIS requires a proper study of business objective, plans, policies etc. It will enable in deciding the type of data required, its sources and the levels at which required. The organisational structure should be able to supply the required information. The organisational levels, authorities, responsibilities, etc. should be studied for this purpose. The success of MIS will depend upon the support of top level management.

2. **Planning:** The informational needs of top, middle and lower levels of management should be studied so that the system is planned accordingly. The functions of each level of management should also be studied. The questions like, what data is needed ? When is it needed ? Who needs it and ; in what form is it needed ? should be studied for making the system effective.

3. **Implementation:** MIS can effectively be applied only when every person in the organisation is involved in it. The persons should also be given training for implementing this system. Information system manuals should be prepared to devise procedure for it The manual and mechanical devices necessary for processing data should also be selected. Standard proformas, etc. should also be decided for collecting information. The main emphasis should be on the involvement of all persons in the organisation.

4. **Review:** The review of the system is very essential. The problems and difficulties faced in the system and additional requirements should be pointed out. The review of MIS will enable us to spot the week spots and a corrective action will make the system more effective.

MEANING AND DEFINITION OF REPORT

The word 'Report' is derived from the Latin word *'portare'* which means 'to carry'. So 'Report' is a document which carries the information. The word Report consists of two parts, *viz.,* RE+PORT. The meaning of the word RE is 'again' or 'back' and PORT means 'to carry'. Combining these two words. It means to carry the information again. It must be clear that reports are always written for any event which has already occurred. So report is a written document which carries the information again.

Dictionary meaning of the word report is 'to convey' or to transmit as having been said.' In fact, a report is a communication from someone who has the information to someone who wants to use that information. Report is always planned for use.

'According to *G.R. Terry,* report is "a written statement based on a collection of facts, events and opinions and usually expresses a summarised and interpretative value of this information. It may deal with past accomplishments, present conditions or probable future developments". Terry talks about report as a written communication prepared on the basis of collected information related to present, past or future.

In simple words, report can be defined as "a form of statement which presents and examines facts relating to an event, problem, progress of action, state of business affairs etc. and for the purpose of conveying information, reporting findings, putting forward ideas and making recommendations as the basis of action". So report is an impartial presentation of facts. These facts may arise out of available factual data or through enquiry, investigation, survey, interview, experiments or research. A mere expression of opinion without supporting factual data is not a report.

OBJECTS OR PURPOSE OF REPORTS

The reports are prepared and written to serve the following purposes:

1. **Means of Communication:** Reports are means of upward communication. It is a communication from someone who has the information to someone who needs that information for carrying out functions of management. Reports provide information to executives, government agencies, shareholders, creditors, customers or general public.
2. **Serve as Record:** Reports provide valuable records for future reference. Reports record facts and results of investigations. The facts can be of great importance in future.
3. **Legal Requirements:** Reports are also written and submitted to fulfil legal requirements.

4. **To Develop Public Relations**: Reports of general progress of business and utilisation of national resources to public helps in increasing the goodwill and developing public relations.
5. **Basis to Measure Performance:** Routine reports about the work performance of employees "help the management to measure performance in view of the objects. The reports on performance shall become the basis for promotions and incentives.
6. **Control Purposes**: Reports are the basis of any control process. It is on the basis of reports, actions are initiated and instructions are given to improve the performance.

MANAGEMENT REPORTING

The process of providing information to the management is known as 'Management Reporting'. The reports are regularly sent to various levels of management so as to enable in judging the effectiveness of their responsibility centres. These reports also become a base for taking corrective measures, if necessary.

According to Anthony and Reece, "Reports on what has happened in a business, are useful for two general purposes which may be called information and control, respectively". Information reports are useful performance and economic performance.

METHOD OF REPORTING

Following methods of reporting may be used **:-**

1. **Written Reporting:**

   A number of written reports may be sent to different levels of management. These reports may be

Formal Financial Statements:

Such statements may deal with any or some of the following :-

(i) Actual figures against the budgeted ones.

(ii) Comparative accounting statements giving information at different periods of time.

Tabulated Information:

The tabulated statistics which include analysis according to products, time, territories etc. A particular type of information, for example sales, may be tabulated as per different periods, products, areas etc.

Accounting Ratios:

Accounting ratios may be presented as a part of formal financial statements. The ratios are useful in appropriate analysis of financial statements. The ratios may be current ratios, efficiency ratios, long-term solvency ratios, profitability ratios, *etc.*

2. Graphic Reporting:

The reports may be presented in the form of charts, diagrams and pictures. These reports have the advantage of quick grasp of trends of information presented. A look at the chart or diagram may enable the reader to have an idea about the information.

3. Oral Reporting:

Oral reporting may be in the following forms :

(a) Group meetings

(b) Conversation with individuals

Oral reporting is helpful only to a limited extent. It cannot form a part of important managerial decision-making. For that purpose the reports must be in writing so that these may be referred in future discussions too.

REQUIREMENTS OF A GOOD REPORT

A report is a vehicle carrying information to those who need it. A report is prepared by putting. labour by the executives. A good report should have the following requisites.

1. Good Form and Content

The following points be taken into account while preparing a report -

i. The report should be given a proper title, headings sub-headings and paragraph divisions.

ii. If statistical figures are to be given in the report then only signifies figures and totals should be made a part of it and other detailed figures should be given in appendix.

iii. The reports should contain facts and not opinions.

iv. The report must contain the date of its preparation and date of submission.

v. If the report is prepared in response to a request or letter then it should bear reference number of such request or letter.

vi. The contents of a report must serve the purpose for which it has been prepared.

vii. *The* contents of the report should be in a logical sequence.

2. Simplicity

The report should be presented in a simple, unambiguous and clear language. The language should be non-technical.

3. Promptness

Promptness in submitting a report is an essential element of a good report. The reports should be sent at the earliest. These are required for studying the progress and performance of various departments. The quick supply of reports will enable the management to take corrective measures at the earliest.

4. Relevancy

The reports should be presented only to the persons who need them. They should be marked to relevant officials.

5. Consistency

There should be a consistency in the preparation of reports. The comparability of reports will be possible only if they are consistent. For consistency, the reports should be prepared from the same type of information and statistical data. This will be possible if same accounting principles and concepts are used for collecting, classifying, tabulating and presenting of information. Consistency in reporting enhances their utility.

Requirements of a Good Report
Good form and content
Simplicity
Promptness
Relevancy
Consistency
Accuracy
Controllability
Cost consideration

Comparability
Frequency of Reports

6. Accuracy

The reports should be reasonably accurate. Statistical reports may sometimes be approximated to make them easily understandable.

7. Controllability

The reports should be addressed to appropriate persons in respective responsibility centres. The reports should give details of variances, which are related to that centre.

8. **Cost Consideration**

The cost of preparing and presenting the report should also be considered. This cost should not be more than the advantage derived from such reports.

9. Comparability

The reporting system is meant to help management in taking correct decision and improving the operational efficiency of the organisation.

10.Frequency of Reports

Along with promptness, the frequency of reporting is also significant. The reports should be sent regularly when they are required. The timing of reporting will depend upon the nature of information and its purpose. Some reports may be sent daily, some weekly, some monthly and so on.

Frequency of reports means that these should be sent when required. The reports are prepared at appropriate times and sent to appropriate persons as per their requirements.

KINDS OF REPORTS

The reports may be classified into the following categories :

1. According to Object and Purpose

(a) External Reports.

(b) Internal Reports.

2. *According to Nature*

(a) Enterprise Reports.

(b) Control Reports.

(c) Investigative Reports.

3. *According to Period*

(a) Routine Reports,

(b) Special Reports.

4. *According to Functions*

(a) Operating Reports,

(b) Financial Reports.

1. Classification According to Object or Purpose

Classification of reporting according to object or purpose may be discussed as under :

***(a)* External Reports**: The reports meant for persons outside the business are known as external reports. Outsiders interested in company reports may be shareholders, creditors or bankers.

***(b)* Internal Reports**: Internal reports refer to those reports which are meant for different levels of management. Internal reports are not public documents and they are not expected to conform to any standards. These reports are prepared by keeping in

view the needs of disposal for scanning them. These reports may be meant for top level, middle level and lower level of management.

2. **Classification According to Nature**

According to nature, reports are divided into three categories :

(a) **Enterprise Reports**. These reports are prepared for the concern as a wljole. These reports serve as a channel of communication with outsiders. Enterprise reports may concern all activities of the enterprise or may be related to different activities. Enterprise reports may include balance sheet income statement, income tax returns, employment reports, chairman's report, etc.

(b) **Control Reports**: Control reports deal with two aspects. One aspect relates to the personal performance and the second aspect deals with the economic performance. The first type of reports are reported to judge the performance of managers and heads of responsibility centers with what performance should have been under the prevailing circumstances. The reasons for deviations in performance are also identified. The second type of reports show how well the responsibility centre has faired as an economic entity. Such analysis is made periodically.

(c) **Investigative Reports:** These reports are linked with control reports. In case some serious problem arises then the causes of this situation are studied and analysed. Investigative reports are based on the outcome of special solution studies. These reports are intermittent and are prepared only when a situation arises. They are prepared according to the nature of every situation.

3. **Classification According to Period**

According to period the reports may be—

(a) Routine reports and

(b) Special reports.

(a) **Routine Reports:** These reports are prepared about day-to-day working of the concern. They are periodically sent to various levels qf management. These reports may differ according to the nature of information and details to be reported. Routine reports may relate to sales information, production figures, capital expenditure, purchases of raw materials, market trends, labour situation, etc.

(b) **Special Reports:** The management may confront some difficulties and routine reports may not give sufficient information to tackle these situations. Under such circumstances, special reports are called for. Special reports are required for special purposes only. These reports are prepared according to the need of the situation. Available accounting information may not be sufficient, so data may have to be specially collected.

Special reports may deal with the following topics :

a) Information about market analysis and methods of distribution of competitors.
b) Technological changes in the industry.

4. Classification of Reports According to Function

According to function, the reports may be 'divided into two categories — *(a)* Operating reports ; *(b)* Financial reports.

(a) **Operating Reports:** These reports provided information about operations of the concern. The operating reports may consist of the following :

(i) **Control Reports:** These reports are used for managerial control. They are intended to spot deviations from budgeted performance without loss of time so that corrective action can be taken. Control reports are also used to assess the performance of individuals.

(ii) **Information Reports:** These reports are prepared to provide useful information which will enable planning and policy formation for future. Information reports can

take the form of trend reports and analytical reports. Trend reports provide information in comparative form over a period of time. Graphic representations can be effectively used in trend reports. As opposed to trend reports, analytical reports provide information in a classified manner about composition of certain results so that one can identify specific factors in the overall total.

(b) **Financial Reports:** These reports provide information about the financial position of the concern on specific dates or movement of finances during a specific period. The balance sheet provides information about the financial position on a particular date. On the hand, cash flow statement provides data about the movement of cash during a particular period. These reports can be either static or dynamic. Balance sheet and other subsidiary reports are examples of static reports ; cash flow, fund flow statements and other reports showing financial position as compared to the budgeted are examples of dynamic reports

LEVELS OF MANAGEMENT AND REPORTING^

The three levels of management are :

(a) Top Level Management

(b) Middle Level Management

(c) Lower Level Management or First Line Management

***(a)* Reports for Top Level Management**

Top level management consists of Board of Directors. Top level management is concerned with policy planning and co-ordinating activities. The goals are set for the organisation and policies are devised to achieve these goals. The work of executing policies is left to the top level management:

i. Periodic report about profit and loss account and balance sheet

ii. Statements of funds flow and cash flow at regular intervals.

iii. Reports on production trends and utilisation of capacity.

iv. Reports about cost of production.

***b)* Reports for Middle Level Management**

The Middle level management is assigned the work for executing various policies. The objects or goals are set by top-management. The requisite authority is delegated to middle level management so that organisational goals may be achieved.

(i) **Production Manager**

a) Actual production figures along with budgeted production figures for that period. These reports are generally daily, weekly or fortnightly.

b) The figures about the availability and utilisation of workers. Figures about normal and abnormal idle time are also reported.

c) Capacity Utilisation Reports ;

d) Material Usage Reports.

***(ii)* Sales Manager**

a) Reports on actual and budgeted sales. These reports are submitted area-wise and product-wise.

b) Weekly reports on orders booked, orders executed and orders still to be executed.

c) Reports on credit collection and bad debts, etc.

d) Reports on stock position.

***(iii)* Purchase Manager**

a) Raw materials purchased, actual materials received and orders pending.

b) Use of raw materials for production.

c) Raw materials balance and information when minimum level or maximum level reaches.

(iv) Finance Manager

a) Cash and Bank position reports.

b) Periodic fund flow and cash flow statements.

c) Debtors collection period reports.

d) Average Payment period.

e) Analysis of working capital

(c) Reports for Lower Level Management

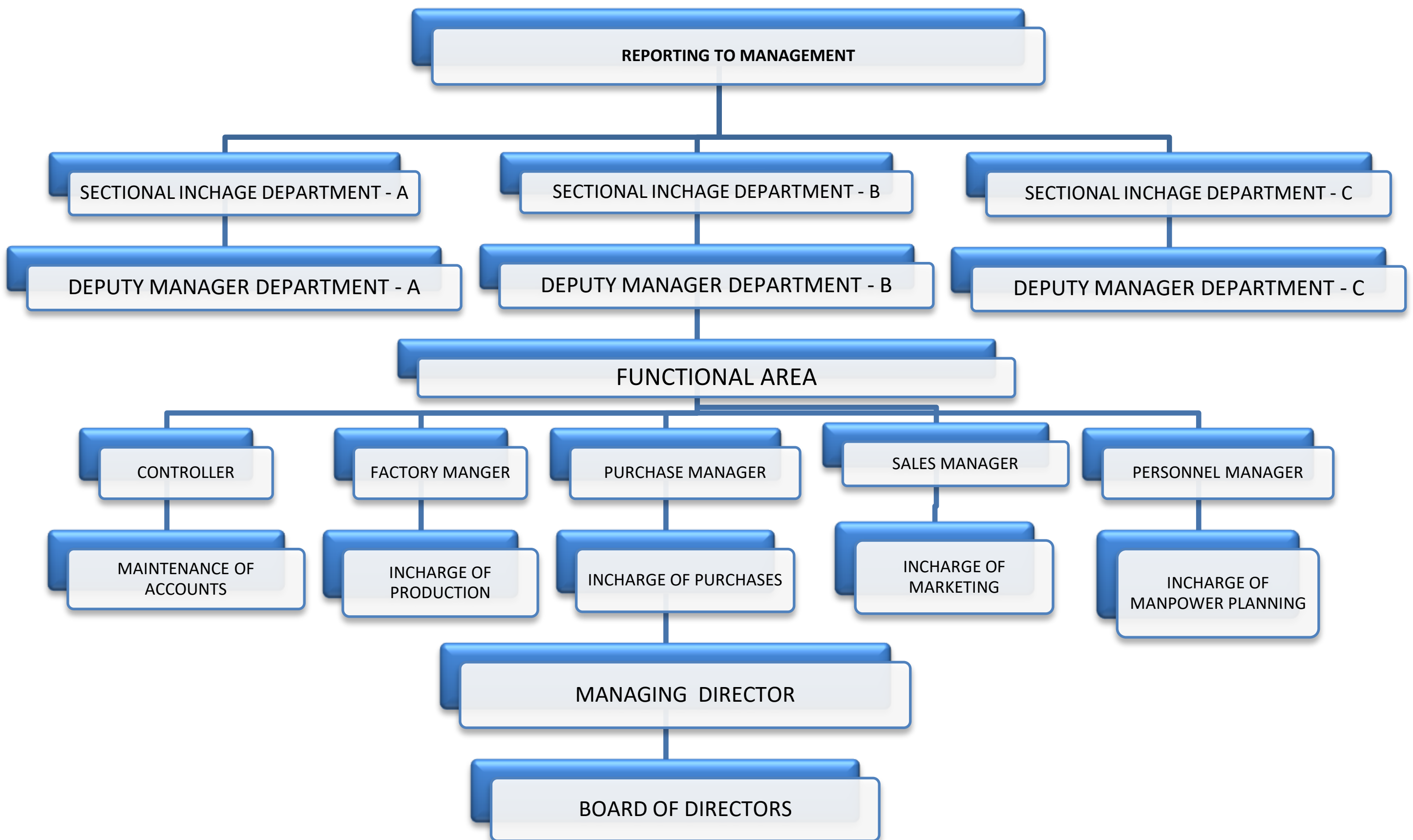
Junior level management consists of foremen or sectional in-charges. They are responsible for the actual execution of policies. They are in touch with the day-to-day performance of their sections. They get daily reports from their juniors. Junior level management prepares and sends regular reports to middle level management Reports for foremen may include :

a) Labour Utilisation report and causes of lost time.

b) Worker's efficiency reports.

c) Scrap report.

REPORTING SYSTEM



The sectional incharge of every section regularly reports the progress of his section to his superior. In this diagram, Functional Managers have Deputy Managers who control departmental sections. The combined reports of different sections reach the departmental manager, called functional manager. Different Functional Managers submit the progress of their departments to the Managing Director. The brief summaries of departmental reports are submitted to the Board of Directors for reviewing policies and making strategy for the future. An effective reporting system will enable the top management to remain in constant touch with the progress of different departments.

GENERAL PRINCIPLES OF A GOOD REPORTING SYSTEM

These principles are discussed as follows:

1. **Proper flow of Information:** A good reporting system should have a proper flow of information. The information should flow from the proper place to the right levels of management. The information should be sent in the right form and at a proper time so that it helps in planning and co-ordination. Flow of information is a continuous activity and effects all levels of the organisation. Information may flow upward, downward or sideways within an organisation.

2. **Proper Timing:** Since reports are used as a controlling device so they should be presented at the earliest or immediately after the happenings of an event. The time required for preparation of reports should be reduced to the minimum; for routine reports the period should be known and strictly adhered to.

3. **Accurate Information:** The information should be as accurate as possible. If the information supplied is inaccurate it may result in making wrong decisions. However, the degree of accuracy may differ in different reports.

4. **Basis of comparison:** The information supplied through reports will be more useful when it is supplied in comparison with past figures, standards set or objectives laid down. The comparison of information with past or budgeted figures will enable the reader to find out trends of variations.

5. **Reports should be clear and simple:** The purpose of preparing reports is to help management in planning, co-ordinating and controlling. This purpose can be

achieved only when the reports are easily understood by the readers. The information should be presented in a clear manner by avoiding extraneous data.

6. **Cost:** The benefits derived from reporting system must be commensurate with the cost involved in it. Though it is not possible to assess the benefit of this system in monetary terms, there should be an endeavour to make the system as economical as possible.

7. **Evaluation of Responsibility:** The reporting system should enable the evaluation of managerial responsibility. The targets are fixed for various functional departmental heads. The record of actual performance is monitored along with the standards so as to enable management to assess the performance of different individuals. So, management reporting should be devised in a way that it helps in evaluating the work assigned to. various persons.

PROCESS OF REPORT WRITING

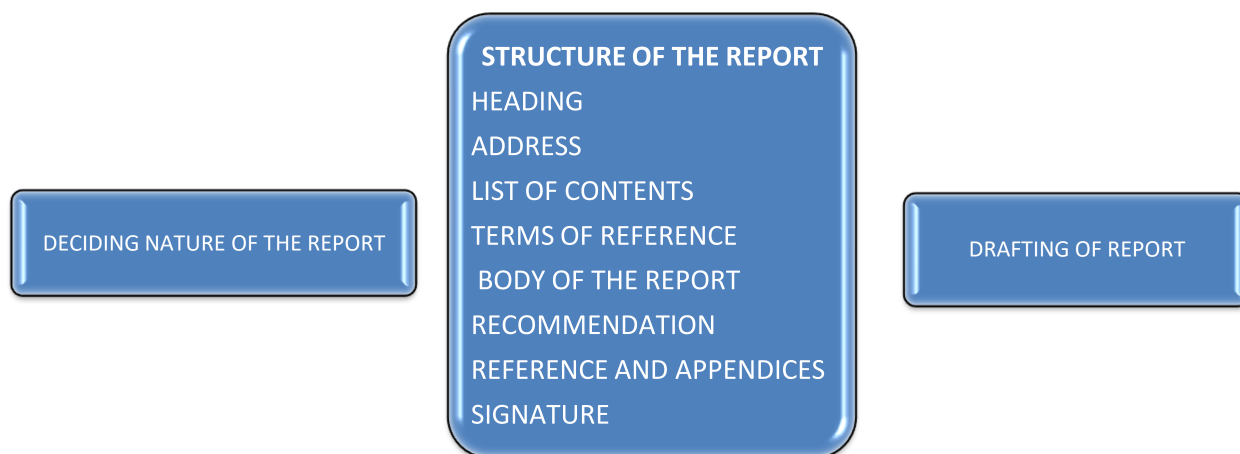
The process of writing and designing a report consists of three stages. These stages are:

a) Deciding the nature and purpose of the report.
b) Structure of the report.
c) Drafting of a report.

These stages are explained as follows:

a) Deciding the nature and purpose of the report:

The first stage is to know the type of the report. Whether the report is statutory or non-statutory. Its type shall determine the nature and shape of the report. It is also very essential to know the purpose or object of the report. The purpose shall determine the other two stages.



PROCESS OF REPORT WRITING

b) Planning structure of the report.

Heading: *A* short, clear, meaningful and attractive heading or title is necessary for a report. Title or heading should indicate the subject-matter of the report.

Address: Every report is written for some one. So it is essential to write the name of reader or readers. Report must be addressed to some person or body of persons.

Contents: IT is a list of chapters of the report. The contents of the report are listed in serial order along with page numbers on which such contents are to be found. Contents should be arranged logically.

Terms of Reference or Introduction: It gives the reasons for writing a report. Brief description of the problem is stated. The object and scope of investigation are also given in this part.

Body of the Report: This part is most important and lengthy, the writer presents here the facts and data collected by him. Use of tables, graphs, diagrams can be made here or in appendices. The analysis of data is shown in this part.

Recommendations: This part is the summary of the report and consists of conclusions and recommendations. The conclusions are made on the basis of the facts and collected data. Recommendations or suggestions are given on the basis of conclusions.

Reference and Appendices: It is customary to mention, list of references and bibliography indicating the sources from where the writer has taken material for writing the report. Appendices contain diagrams, statistical tables, specimen forms etc.

Signature: Every report should be signed by the person responsible for its preparation. Any report submitted by a committee should be signed by the chairman. It is advisable to mention date on the report.

c) Drafting of a report.

Drafting of a report is an important stage in report writing. This stage includes following considerations ;

Collection of data and its analysis: First step in drafting is collecting information, facts and data necessary for the purpose of the report. Data can be collected from secondary or primary sources. Data is collected by investigations, observations, interviews or by surveys etc. Collected data has to be classified, tabulated, edited and analysed. The collected data has to be arranged logically and conclusions are drawn.

Format of a report: The format of a report refers of structure of a report which has already been explained. U is concerned with the layout of the report and arrangement of the data. It can be standardised for the purpose.

Writing of report: (guiding principles) Report writing is an art which can be developed by practicing report writing and by studying the reports of other writers.

Report are written for others so the needs and style preferred by the reader should be kept in mind while writing report.

Presentation of report: General layout of a report should be pleasing to the eye. Report may be typewritten, printed or handwritten depending on the number of copies required. Sufficient space and margin should be kept on the left hand side.

FINANCIAL INFORMATION SYSTEM

Financial information system is a sub-system of an organisation's management information system. Financial information systems are helpful to the management in undertaking financial functions smoothly and effectively. They provide necessary information and support financial managers in taking financial decisions such as financing decisions, investment decisions, dividend decisions and allocation and control of financial resources within a business. The important financial systems include financial planning, financial forecasting, capital budgeting, working capital management, cash and securities management etc. Accounting information systems such as order processing, inventory control, payroll system, accounts receivable and payable systems are also used to support the financial information systems. Some of the important financial information systems are discussed below.

1. **Financial Planning Systems:** Financial planning systems use financial planning models to evaluate the present and projected financial performance of a business. They also help determine the financial needs of a business and analyse and evaluate alternative methods of financing the business. Finance managers use information concerning the economic situation, nature or character of business, internal as well as external business environment, types of financing available, cost of various sources of finance etc. in developing an optimal financing plan.

2. **Financial Forecasting.** Financial forecasting is an act of predicting the future economic conditions ' on the basis of past and present information. It refers to the technique of taking a prospective view of things likely to shape the turn of things in foreseeable future. As future is always uncertain, there is a need of organised system of forecasting in a business. The following are some of the important statistical tools used for financial forecasting :

    1. Business index or barometer.
    2. Extrapolatiqn or mathematical projection
    3. Regression.

3. **Capital Budgeting:** Capital budgeting is the process of making investment decisions in capital expenditures. Capital budgeting is a complex process as it involves decisions relating to the investment of current funds for the benefit to be achieved in future and the future is always uncertain. However, the following procedure may be adopted in the process of capital budgeting :

    i. Identification of investment proposals
    ii. Screening the proposals
    iii. Evaluation of various proposals
    iv. Fixing priorities

4. **Cash and Marketable Securities Management:** Financial information systems collect and provide information on all cash receipts and disbursements on periodic or projected basis. Cash management has assumed importance because it is the most significant of all current assets. It is required to meet business obligations and is unproductive when not used. Cash management deals with cash Inflows and outflows, cash flows within the firm and cash balances help by the firm at a point of time.

Questions:

1. What are the elements of MIS ?
2. Define a Report.
3. What are the objects of reporting ?
4. What do you understand by management reporting ?
5. What are special reports ?
6. Write a brief note on reporting system.
7. What should be the frequency of reports ?
8. Bring out the kinds of reports prepared for different-levels of management. What are the objectives of reporting to management ?
9. What do you mean by MIS ? What are its important elements ?
10. What is Management Information System ? How can it be installed?
11. What do you understand by Reporting to Management ? What are the essential characteristics of a good report ?
12. What are the essential points kept in mind while preparing a report for the management? Describe the informational needs of different levels of management.
13. Discuss various kinds of reports prepared by the management accountant for different levels of management.
14. What do you understand by 'Reporting to Management' ? Discuss briefly the matter that you would deal with while reporting to management of an industrial concern and explain the nature of report in respect of each.