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SUBJECT : MANAGEMENT ACCOUNTING

Unit : 1

Management Accounting – Meaning – Objectives and Scope – Relationship between Management Accounting, Cost Accounting and Financial Accounting.

Unit : 2

Ratio Analysis – Analysis of liquidity – Solvency and Profitability – Construction of BalanceSheet.

Unit : 3

Working Capital – Working capital requirements and its computation – Fund Flow Analysis and Cash Flow Analysis.

Unit : 4

Marginal costing and Break Even Analysis – Managerial applications of marginal costing –Significance and limitations of marginal costing.

Unit : 5

Budgeting and Budgetary control – Definition – Importance, Essentials – Classification of Budgets– Master Budget – Preparation of cash budget, sales budget, purchase budget, material budget, flexible budget.

UNIT-I
BASICS OF MANAGEMENT ACCOUNTING

Management Accounting

Management accounting is the process of identification, measurement, accumulation, analysis, preparation, interpretation and communication of financial information used by management to plan, evaluate and control within an organization and to assure appropriate use of and accountability for its resources. Management accounting also comprises the preparation of financial reports for management groups such as shareholders, creditors, regulator agencies and tax authorities.

Process of Management accounting

1. **Identification** – the recognition and evaluation of business transactions and other economic events for appropriate accounting action.
2. **Measurement** – the qualification including estimates of business transactions or other economic events that have occurred or may occur.
3. **Accumulation** – the disciplined and consistent approach to recording and classifying appropriate business transactions and other economic events.
4. **Analysis** – the determination of resources for, and the relationships of the reported activity with other economic events and circumstances.
5. **Preparation and Interpretation** – the meaningful coordination of accounting and or planning data to identify a need of information, presented in a logical format, and if appropriate, including conclusions drawn from those data.
6. **Communication** – the reporting of pertinent information to management and others for internal and external uses.

Management accounting is used by management to :

1. **Plan –** to gain an understanding of expected business transactions and other economic events and their impact on the organization.
2. **Evaluate –** to judge the implications of various past and or future events.
3. **Control –** to insure the integrity of financial information concerning an organization or its resources.
4. **Assure accountability –** to implement the system of reporting that is closely aligned to organizational responsibilities and that contributes to the effective measurement of management performance.

The essence of the management process is decision making. Decision making is an unavoidable and continuous management activity. It may be directed towards some specific objectives, or it may result as a reaction of environmental factors as they occur. An enterprise would operate successfully if it does not simple react to events, rather it directs its efforts towards the accomplishment of desired purposes. Objectives tend to make decisions purposeful to the firm. The decision making process should be both efficient and effective. It would be effective when management's objectives are achieved. The decision making system is said to be efficient when objectives are

realized with the minimum use of resources.

The process of decision making involves two basic management functions of planning and controlling. As discussed in the previous section, management accounting accumulates, measures and reports relevant information in such a way that planning and control functions of management are facilitated.

NATURE OR CHARACTERISTICS OF MANAGEMENT ACCOUNTING

The nature and main characteristics of management accounting are as follows:

1. **Both as a Science and an art:** In management accounting data are collected systematically and they are analysed with the help of various formulae and techniques and on this basis it is a science. On the other hand, subjective judgment of management and various needs of the organization are also taken into account while taking decisions and on this basis it is an art. On the whole, management accounting is both- a science as well as an art.
2. **Accounting Service:** Management accounting is a function of accounting service towards management. Under this service necessary information are provided to various levels of management.
3. **Integrated System:** Management accounting is an integrated system in which technique related to various subjects are used in the process of data collection, analysis and decision-making.
4. **More concerned with Future:** Management accounting is more concerned with 'future'. No doubt, analysis and interpretation are made on the basis of historical data, but the important objective of management accounting is to determine policies for future.
5. **Selective Nature:** Management accounting is selective in nature. It selects only those plans or alternative which seems to be more attractive and profitable.
6. **More Emphasis on the Nature of Element of Cost:** Management accounting lays more emphasis on the recognition and study of the nature of various elements of costs. In this context the total cost is divided into fixed, variable and semi-variable components.
7. **Cause and Effect Analysis:** Management accounting lays emphasis on the analysis of 'cause' and effect 'effect' of different variables.
8. **Rules not Precise and Universal:** In management accounting no set of rules or standards are followed universally. Though the tools of management accounting are the same, their use differs from concern to concern.
9. **Supplies Information and not decision:** An important nature of management accounting is that its provides requisite information and not decisions. However, decisions are taken by management with the help of these informations.
10. **Achieving of Objectives:** In management accounting, the accounting information is used in such a way so that organizational objectives and targets may be achieved and efficiency of business may be improved.

OBJECTIVES OF MANAGEMENT ACCOUNTING

The fundamental objective of management accounting is to enable management to maximize profits or minimize losses. Following are the important objectives or purposes of management accounting:

1. **Policy formulation-** Policy formulation and planning are the primary functions of management. The object of management accounting is to supply necessary data to the management for formulating plans. The figure supplied and opinion given by the management accountant helps management in policy formulation.
2. **Helpful in decision making-** The management is required to take various important decisions. Management accounting techniques help in collecting and analyzing data relating to cost, volume and profit which provide a base for taking sound decision.
3. **Helpful in controlling-** Management accounting is a useful device of managerial control. Various accounting techniques such as standard costing and budgetary control are helpful in controlling performance. The actual results are compared with pre-determined targets to know the deviations.
4. **Motivation-** Another important objective of management accounting is to help the management in selecting best alternatives of doing the things. Delegation of authority as well as responsibility increases the job satisfaction of employees and encourages them to look forward.
5. **Interpretation of financial information-** Financial information is of technical nature and must be presented in such a way that it can be easily understood. It is the duty of management accountant who uses statistical devices like charts, diagrams etc. so that the information can be easily understandable.
6. **Reporting-** One of the primary objectives of management fully informed about the latest position of the concern. Management accounting provides data as well as different alternative plans before than management for comparative study. The performance of various departments is also communicated regularly to the also communicated regularly to the top management.
7. **Helpful in co-ordination-** Management accounting provides tools which are helpful for this purposes. Co-ordination is maintained through functional budgeting. It is the duty of management accounting to act as a coordinator and reconcile the activities of different department.

SCOPE OF MANAGEMENT ACCOUNTING :

The scope of management accounting covers all the tools and techniques which help the management in effective discharge of their functions. The scope, therefore is very wide and broad based, covering mainly the following aspects of management accounting.

(i) **Financial Accounting** : Financial accounting provides the data base on the basis of which management accounting processes information to management to serve their needs. Proper designed financial accounting system forms the very base on which management accounting prepares relevant and analytical report to facilitate management decision making. Management accounting assembles and presents

the financial accounting data in meaningful terms for resolution of managerial issues. Hence, without the back up by Financial Accounting feeding system, management accounting functions are not possible.

(ii) **Cost Accounting** : Cost accounting provides the most sophisticated techniques of Marginal Costing, Budgetary Control, Standard Costing, Inter firm comparison which enables Management Accounting to provide necessary information for effective decision making and control. Costing accounting helps in performance appraisal and formulation of pricing policies with costing information. It is in fact the integral arm of management without the support system of costing accounting, the inefficiencies in various operations can not be highlighted to management.

(iii) Tools and Techniques of Management control : Management accounting makes an detailed analysis and interpretation of financial statements through the tools of comparative statements, trend ratios, ratio analysis and fund flow statement. Accounting Ratios help in the evaluation of operating performance and in judging the liquidity and solvency of the enterprise. Fund flow statement focuses on the management of funds in the operations of the business variance analysis aims at controlling the various elements of costs, reporting the adverse variation for management action.

(iv) **Statistical and Quantitative Techniques** : A number of statistical tools and technique is like linear programming, regression analysis facilitates in providing information in a meaningful manner for effective control and decision making. Hence management accounting also includes these techniques in its scope.

(v) **Inflation Accounting** : This is also referred as revaluation accounting which is concerned in maintaining capital in real terms and accordingly profit is calculated. This involves the exercise of revaluing the assets at current prices and shows the increase/decrease in the value of capital. On the assumption that the monetary unit value is unstable; the impact on capital is ascertained as a result of changes in value of money. This is therefore another technique which falls within the orbit of management accounting.

(vi) **Tax Accounting** : Tax planning is another important area which has a serious impact on the profitability of the concern. Without proper planning of tax, the profits of the enterprise are hijacked which affects adversely the business operations. Hence, it an important activity of management accounting.

(vii) **Management Reporting** : Management report forms the integral aspect of management accounting system. They identify the areas where management attention is desired for corrective action. Decision making is facilitated based on the information provided by the report. The reports should portray all the relevant aspects concerning the operative efficiency of the business. Report have to be well designed and frequent to help the management. This is an essential part of management accounting.

FUNCTIONS OF MANAGEMENT ACCOUNTING :

The basic functions of management accounting is to furnish relevant information along with analytical data to the management to enable timely decisions for appropriate actions. It helps in the effective discharge of management functions of planning, organizing, directing and controlling. The following are the main functions of management accounting.

(a) **Furnishing of relevant and vital data** : Relevant and vital data is collected from concerned sources and presented through meaningful reports to management which facilitates decision making. Accounting data provides a strong base for furnishing financial figures to management to enable appropriate and timely action.

(b) **Compilation of data in suitable form** : Accounting data as it is may not serve a meaningful and useful purpose to management for decision making. This data is required to be suitably modified and amended in manner that suits the management purpose. Hence the data is classified and rearranged in a way that helps the management to gain insight into the situation.

(c) **Analysis and Interpretation** : Management accounting provides the tools and techniques for analysis and interpretation of data. Information is furnished in a comparable and analytical manner for easy grasp of the situation. This facilitates planning and decision making.

(d) **Means of communication and reporting** : Management accounting system constitutes an important segment of the management communication system providing information and guidance for prospective planning and control. Reports well prepared sand presented makes the management more effective in controlling business operations. It helps in co- coordinating the operations of various department.

(e) **Facilitates control function** : Management accounting helps in control function through the techniques of budgeting control and standard costing. These techniques enable comparison of actual performance with the targets and standards set analysis of the deviations from such standards taking corrective action as a result of analysis and follow up to appraise the effectiveness of corrective action.

(f) **Planning** : Planning involves determination of different courses of actions based on the purpose facts and considered estimates. It helps in planning the strategy to be adopted in achieving the targets. It renders necessary help in planning for future the business goals and objectives.

(g) **Guides the management in judgment**: It assists the management in forming its judgment about the financial condition or the profitability of the business operation. Suitable action can be taken in laying down future plans and policies for improvement and advancement.

(h) **Decision – making** : Decision making is a management process of making right choices from amongst the various courses of action. Decision can be taken only when the data is assembled and presented in meaningful terms and

the areas requiring management attention are highlighted. Management accounting makes this decision making more effective.

1. Reporting is usually at the end of the year; when the events have already taken place for which nothing can be done.
2. Financial accounting offers a macro view of the entire activities of the organization; it shows the results of the business as a whole without showing the results of the individual departments or products. Hence there is a fusion of all positive and negative results culminating into one result.
3. Financial accounting is subject to statutory audit which is compulsory as per the provisions of the Companies Act, 1956. Management Accounting is not subject to any such statutory audit.
4. Financial accounting considers only the monetary aspect. Management accounting considers both the monetary as well as non monetary aspects.

ROLE OR IMPORTANCE OR SIGNIFICANCE OF MANAGEMENT ACCOUNTING OR MANAGEMENT ACCOUNTING AS A TOOL OF MANAGEMENT

In the present complex business world, management accounting has become an integral part and useful tool of management system. The report prepared and data edited on the basis of management accounting become the foundation of successful operation of managerial activities. The role of management accounting as a tool of management can be studied under following headings:

1. **Increase in Efficiency:** Management accounting increases efficiency of various business activities. The targets of different departments are fixed in advance on the basis of forecasting and planning and later on actual performance is compared with them. This process helps in measuring and increasing the efficiency of the enterprise.
2. **Proper Planning:** Planning is a primary function of management and management accounting has an important role in making it proper. Management is able to plan various activities with the help of accounting information. On the basis of information provided by management accountant, the work-load of each and every individual is fixed in advance and the activities of the concern are planned in a systematic manner.
3. **Measurement of Performance:** Management accounting also plays an important role in measurement and management of work performance through the techniques of standard costing and budgetary control.
4. **Effective Management Control:** Efficiency of management depends upon its effective control and from this point of view also management accounting has its specific role. Nowadays the function of control has become a continuous process.
5. **Improved Services to Customers:** The installation of various types of control through management accounting leads to reduction in cost and price and maintenance of standard level of quality of goods produced and services rendered.

6. **Maximizing Profits:** The thrust of various techniques of management accounting is to control cost of production and to increase operational efficiency. It all results in maximizing the profits.
7. **Prompt and Correct Decision:** Management accounting provides continuous information and analysis is to various levels of management in respect of various aspects of business operations. It helps in prompt and correct decision by management.
8. **Reduction in Business Risks:** The collection and analysis of historical information in management accounting provides knowledge to the management in respect of nature of fluctuations and their causes and effects. Management can prepare such plans which may minimize the impact of trade cycle or seasonal fluctuations and consequently reduction in various types of business risks.

LIMITATIONS OF MANAGEMENT ACCOUNTING:

Management accounting is not free from limitations limits its effectiveness :

1. **Data Base** : Management accounting depends for data on the financial and cost records. If the financial and cost accounting contains incorrect and inaccurate information; management accounting also gets affected to that extent. Discrepancies of financial and cost accounting penetrates into the management accounting system giving unreliable results. Therefore, effectiveness of management accounting system depends upon the efficiency of system followed for recording and compiling financial and cost records.
2. **Intuitive Decision making** : Many times management is prone to take decisions without reference to information provided by management accounting system. They are tempted to take decision in an easy and short cut manner rather than on scientific basis. They may base their decision on mere guess work and ignore the information provided by management accounting system.
3. **Absence of Objectivity** : Management accounting provides both qualitative and quantitative information which offers scope for subjective element. The report are therefore influenced by opinion judgment based on personal bias and prejudice. These make the reports more subjective rather than objective.
4. **Developing discipline** : Management accounting is still a new and developing. It has yet to sharpen its tools and techniques and seek perfection in its application. As a evolving discipline it is subject to certain obstacles and impediments which are to be cleared before it emerges as a fully developed science.
5. **Expensive proposition** : It is an expensive proposition to install the system with necessary facilities and highly skilled persons. Therefore, small concerns cannot afford to adopt it. Only large concerns can taken advantage of it; where the benefits outweigh the cost in many ways.
6. **Wide scope** : Management accounting embraces many disciplines and its scope is very wide. Hence it requires a through knowledge and understanding of many subjects to make the data more meaningful and informative. This makes the task of management accounting difficult.

7. **Resistance** : This subject demands a change in the method and style of working which may meet opposition and non co-operation from certain vested interests. If may be construed by some persons as tool for their exploitation. They dislike being guided in decision making through scientific approach. Proper education of the system is necessary to help them break away from the traditional style of working.
8. **Can not replace Management**: Management accounting with all its tools and techniques can only facilitate decision making process for the management. It cannot be treated as an alternative or substitute for management. Ultimately it depends on the management for execution. Therefore, it is only a tool in the hands of management and cannot replace management. Management accounting processes quantitative data and collaborates with qualitative data. Only qualitative and unquantified data cannot be easily processed by management accounting.

TOOLS AND TECHNIQUES OF MANAGEMENT ACCOUNTING

A number of tools and techniques are used to supply the information required by the management. Any one technique can not satisfy all managerial needs. The tools and techniques used in management accounting are as follows:

1. **Financial Policy and Accounting –** every concern has to take a decision about the sources of raising funds. The funds can be raised either through the issue of share capital or through the raising of loans. Capital or preference share capital. The second decision concerns the raising of the loans. Whether the loans should be long-term or short-term is again a matter of policy. The proportion between share capital and loans should also be decided.
2. **Analysis of Financial Statements-** The analysis of financial statement is meant to classify and present the data in such a way that it becomes useful for the management. The meaning and significance of the data is explained in it in non-technical language. The techniques of financial analysis include comparative financial statements, ratios, funds flow statement, trend analysis etc.
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. The actual cost is compared to the standard cost and it gives an idea about the performance of the concern.
4. **Budgetary Control-** It is a system which uses budgets as a tool for planning and control. The budgets of all functional departments are prepared in advance. The actual performance is recorded and compared with the pre-determined targets. The timing of budgets and finding out deviations is an important tool for planning and controlling.
5. **Standard Costing-** Standard costing is an important technique for cost control purposes. In standard costing system, costs are determines in advance. The actual costs are recorded and compared with standards costs. The variances, if any, are analysed and their reasons are ascertained.
6. **Marginal Costing-** This is a method of costing which is concerned with changes in costs resulting from changes in the volume of production. Under this system, cost

of product is divided into marginal (variable) and fixed cost. The latter part of cost (fixed) is taken as fixed and is recorded over a level of production and every additional production unit involves only variable cost.

7. **Decision Accounting-** An important work of management is to take decisions. Decision taking involves a choice from various alternatives. There may be decisions about capital expenditure, whether to make or buy, what price to be charged, expansion or diversification, etc.
8. **Revaluation Accounting-** This is also known as Replacement Accounting. The preservation of capital in the business is the main objective of management. The profits are calculated in such a way that capital is preserved in real terms. During periods of rising prices, the value of capital is greatly affected.
9. **Control Accounting-** Control accounting is not a separate accounting system. Different systems have their control devices and these are used in control accounting. In control accounting we can use internal check, internal audit, statutory audit and other similar methods for control purposes.
10. **Management Information Systems-** With the development of electronic devices for recording and classifying data, reporting to management has considerably improved. The data relevant planning, co-ordination and control is supplied to the management. Feedback of information and responsive can be used as control techniques.

Relationship of management accounting, financial accounting and cost accounting

Management accounting, financial accounting and cost accounting are the methods of accounting providing information about the business firms. The financial accounting is related to the recording of daily transaction whereas in management accounting sources of information are used to specific mean.

Financial accounts have deep impact on management accounting, because it is a branch of financial accounting. Both of these accounting are mutually helper and alternate to each other and are necessary for efficient operation of the firm.

Cost accounting is tool that provides necessary data to the management for planning, decision making and determination of policies. Basically cost accounting and management are supplementary to each other. If in any business there is no room for cost accounting then management accounting will have no identity in that business.

Difference between management accounting and cost accounting

Base	Cost accounting	Management accounting
Object	An object of cost accounting to find out a cost of a product or a service.	An object of m.a. is to make available various information to the management for planning and other activities.
Nature	In cost accounting both past and present data are used.	In the normally data are used for future policies and planning.

Scope	Cost accounting having a narrow scope because mainly it determines the cost.	Its scope is very wide, it includes financial account, cost account report to management etc
Age	Cost accounting is an old method.	Management accounting is a modern concept.
Principles	In this some principles and methods are adopted and from time to time same principles are used.	In this for reporting to management no specific rule or principle is adopted.

Difference between Financial Accounting and Management Accounting

Basis of Difference	Financial Accounting	Management Accounting
1. Objects	Its object is to record various transactions and to know, on that basis, profit or loss during a particular period and financial position at the end of that period.	It s object is to provide necessary accounting information to management which may help it in taking decisions and formulating policies.
2. Subject-matter	It is concerned with assessing the results of business as a whole.	It is concerned with assessing the activities of different units, departments and cost centers i.e., it examines efficiency not only of the whole enterprise but of different departments also.
3. Historical/ Futuristic	It is mainly concerned with the historical data.	It focuses its attention on future and uses historical data only for taking decisions for the future.
4. Compulsion	Generally, financial accounting is compulsory.	Management accounting is used voluntarily and generally its procedure is also not determined by law
5. Reporting	It is used to find out profitability and financial position of the concern	The main idea for preparing reports in this accounting is to provide information as per requirements of the management.
6. Description	It records only those transactions or events which can be expresses in monetary terms.	It covers all such monetary and non- monetary events which influence managerial decisions.

7. Quickness of Communication	The communication of information in this accounting is very slow and time consuming.	There is relatively more emphasis on quick and prompt communication of information.
8.Accounting Principles	They are prepared generally on the basis of certain accepted accounting principles and conventions.	No set accounting principles are followed in this accounting
9. Period	Generally, its duration is one year and this year is called as accounting year or financial year.	It collects and supplies information from time to time during the whole year.
10. Publication	As per Companies Act, every company is required to send a copy of its final accounts to the Registrar of Companies. Moreover, its publication is compulsory in case of Public Company.	They are prepared for the use of management only and thus they are not published.
11. Audit	These accounts can be got audited	There is no such provision in this accounting.
12. Scope	Its scope is limited	Its scope is much wider.

UNIT-II

Financial statements analysis: Meaning, objectives and methods

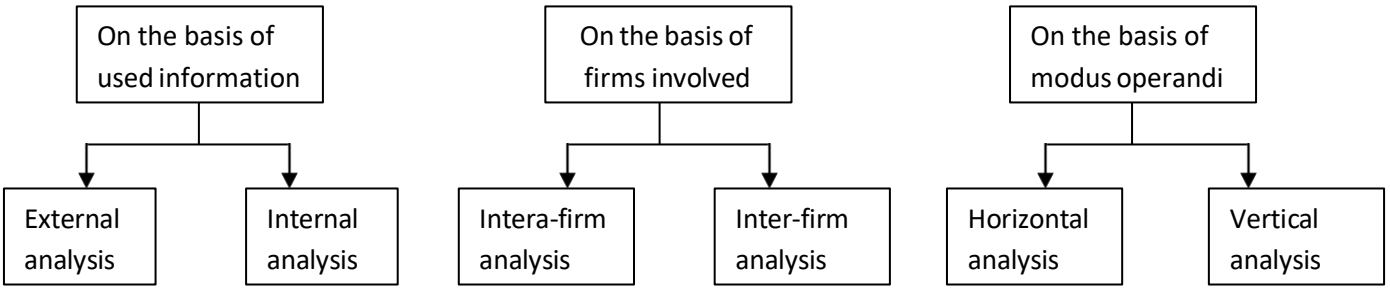
The term' Financial Analysis' Which is also known as 'analysis and interpretation of financial statements refer to process of determining financial strength and weaknesses of the firm by stabilizing relationship between the items of balance sheet, profit & loss a/c and other operative data.
The purpose of financial analysis is to diagnose the information context in financial statement so as to judge the profitability and financial position of the firm.'

TYPES OF FINANCIAL ANALYSIS

Financial analysis can be classified into different categories depending upon

1. Information used
2. Method of operation followed in analysis or the modes operandi of analysis

TYPES OF FINANCIAL ANALYSIS



TOOLS OR METHODS OF FINANCIAL ANALYSIS

A number of methods are used to study the relationship between different statements
Following are het methods generally used for financial analysis

1. Comparative financial statements
2. Common size statements
3. Trends analysis
4. Fund flow analysis
5. Cash flow analysis
6. Ratio analysis
7. Cost-volume-profit analysis

COMPARATIVE FINANCIAL STATEMENTS

The comparative financial statements are the statements of the financial position at different periods of time. The elements of financial position are shown in a comparative form to give an idea of the financial position of two or more periods. Generally two financial statements (balance sheet and income statements) are prepared in comparative form for the purpose of financial analysis.
For example, when figure of sales of previous periods are given along with the figures of current period, the analyst will be able to see the trends of sales over different period of time.

THE COMPARATIVE STATEMENTS ARE-

1. Balance sheet
2. Income statement

COMPARATIVE BALANCE SHEET

Comparative balance sheet as on two different dates can be used for comparing assets and liabilities and finding out on increase or decrease in those items.
While interpreting comparative balance sheet, the interpreter is expected to consider the following points.

a. **Current financial position-** For studying the current financial position, one should see the working capital for both the year. A study of increase or decrease in current assets and current liabilities enable to see the current financial position.
b. **Long term financial position-** The long term financial position of the concern can be analyzed by studying the changes in fixed assets, long term liabilities & capital. An increase in fixed assets should be compared to the increase in long term loans and capitals.
c. **Profitability of the concern-** The study of increase or decrease in retained earnings will enable the interpreters to see cheater the profitability has improved or not.

COMPARATIVE INCOME STATEMENT-

The income statement shows net profit or net loss on accounts of operations of a business. The comparative income statement gives an idea of the progress of a business over a period of time. The interpretation of income statements will involve

a. The increase or decrease in sales should be compared with the increase or decrease of cost of goods sold.
b. The second step is to study the operational profits.
c. The effect of non-operating expenses such as interest, loans on profit should be studied.

COMMON SIZE STATEMENTS

Common size statements are those in which the figures are converted into percentage on some common basis. The use of these helps in making inter period & inter firm comparison and also in high lighting upon the trends in performance, efficiency & financial position. However any material change in the techniques procedure & principles would render these statements users & insignificant tool of financial analysis.

a. **Common size balance sheet-** A statement in which balance sheet items are expressed as the percentage of its total.
b. **Common size income statements-** in common size income statement various item of income statements are shown as percentage of sales.

TRENDS ANALYSIS

The financial statement may be analyzed by computing trends of several years

The methods of calculating trend percentage involve the calculation of percentage relationship that each items bears to the same item in the base year. It is very important from the point of view of forecasting or budgeting. It discloses the change in the financial and operating data between specific periods. However, no. of precautions should be taken, while using trends ratios as a tool.

Limitations of financial analysis: financial statement analysis is an important method of determination of financial capabilities and weakness of any firm, but their analysis is based on the information given in the financial statements. Some of the limitations are as follows

1. It is study of interim reports only.
2. Comparison of financial statements of one firm with another is not possible.
3. Validity of financial analysis is reduced when there are price changes.
4. Conclusion drawn from one year financial statements is worthless.
5. Profit and loss account is prepared on the basis of old conventions due to which correct information of net profit is not provided.

Ratio Analysis

Meaning of Ratio : generally ratio means establishment of logical relationship between two or more variable. Thus ratio is a numeric relation between two or more items of financial statement.

Ratio analysis : Ratio analysis is a techniques of analysis and interpretation of financial statements. It is a process of establishing various ratios and their interpretation, to help top management in decision

making. Ratio is not an end in itself but it is a means of understand strength and weakness of the firm properly.

Interpretation of the ratio: as the calculations of ratios from the data given in the financial statements is an important function. In the same manner interpretation of these ratios is also the most important function. Calculation of ratio is a clerical work while for interpretation of ratios skill and foresightedness are required. Normally the interpretation of ratios can be made by the following ways.

1. **Single absolute ratio –** Generally it is said that if a person interprets a single ratio.
2. **Group of ratios –** Some of ratios are not important by their own but provides meaning ful conclusion when they are interpreted along with other ratios like study of profit on sale with capital employed or current ratio with liquid ratio.
3. **Historical comparison -** When ratios of various years are compared then this study indicates the direction of the change and shows whether there is a improvement, downfall or constancy in the performance and financial position of the firm.
4. **Project Ratios –** Various ratios may be calculated as a standard from the projected financial statements.
5. **Inter-firm comparison –** inter firm comparison of ratios of any firm with the ratios of other firms or with the average ratios of all the firms.

Classification of Ratios : Various accounting ratios are broadly classified as under –

1. Short term financial position ratios or liquidity ratios.
2. Activity or turnover ratio.
3. Profitability ratios.
4. Long term financial positions or solvency ratios.

Short Term Financial Liquidity Ratios

Current Ratio = A liquidity ratio that measures a company's ability to pay short term obligations.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Interpretation – If the current ratio is low it represents that the liquidity position of the firm is not good and the firm is not able to pay its current liabilities immediately.

On the other hand, if the current ratio is very high it indicates idle assets which are not properly utilized. There should be proper balance between these two situations. A current ratio of 2:1 is considered on ideal situation.

Significance – Current Ratio is an index of the firm's financial stability. It provides a margin of safety of the creditors and indicates strength of working capital.

Limitation-

1. It is crude measurement of liquidity because it measures only the quantity and not the quality of current assets.
2. Ratio is computed from the figures of balance sheet which might be manipulated to show a better position of the firm than what is actual.

Quick/Acid Test/Liquid Ratio.

Quick ratio is used as a measure of the company's ability to meet its current obligation.

$$\text{Quick/Liquid/Acid Test Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

Liquid Assets = Current Assets – (Stock and prepaid expenses)

Interpretation – A high quick ration is an indication that the firm has the ability to meet its current liabilities in time and on the other hand, a low quick ratio represents that the firms liquidity position is not good.

Quick ratio of 1:1 is considered satisfactory It indicates high solvent positions.

Significance

1. It is the real test of liquidity position.
2. It gives better picture of firms ability to meet its short term obligations.
3. It is used as a supplementary ratio to the current ratio.
4. It is more of a qualitative nature of test.

(iii) Absolute Liquidity Ratio/Super Quick Ratio – Absolute liquid assets include cash in hand, cash at bank readily saleable securities and short term investment because it is assumed that all creditors will not demand their amount at once and mean while cash can be recovered from stock and debtors.

Absolute liquid Ratio = $\frac{\text{Absolute liquide Assets}}{\text{Current Liabilities}}$

(iv) Cash Ratio- This ratio is calculated to know how much cash and bank balance a business is having against its current liabilities. It shows the availability of cash and bank balance.

Current Ratio = $\frac{\text{Cash +Bank}}{\text{Current Liabilities}}$

Solvency Ratio / Capital Structure Ratios:

1. Debt-Equity Ratio – It is also called as external internal equities ratio. It measures claims of outsiders and owners (shareholders) against the firm.
   This is calculated between external equities or external funds and internal equities or share holders funds.
   Debt Equity = $\frac{\text{External equities or debt}}{\text{Internal equitieis or equity}}$ OR
   = Long term borrowings/equity share capital + preference share capital + reserve & surplus – fictitious Assets
   Interpretation – This ratio indicates margin of safety to creditors on its liquidation.
2. Debt to Total Capital Ratio – This ratio shows the relationship between long term debts and total permanent capital of the business.
   = $\frac{\text{Long term Debts}}{\text{Permanent capital (Share holder fund +Long term Debts}}$ OR
3. Debt to total Assets – This ratio establish the relationship between total debts to total assets- = $\frac{\text{Total Debotrs}}{\text{Total Assets}}$OR
4. Property Ratio or equity Ratio- This ratio establishes the relationship between shareholder's funds and total tangible assets of the firms -
   = $\frac{\text{Share holder funds}}{\text{Total Tangibl e Assets}}$
   Interpretation:- Higher ratio shows that firm is less dependent on outsiders for working capital. Thus, higher ratio shows strength of the firm.
5. Capital Gearing Ratio :- This ratio is calculated between equity share capital and reserve and surplus of the company with its debentures preference share capital and long term loans.
   = $\frac{\text{Equity capital +Reserve Funds}}{\text{Fixed Rate interest bearingfunds}}$

   Interpretation:- It the calculated ratio is greater than 1, it shows the firm in highly geared because the burden of fixed interest bearing funds/debts is more than owners equity. It is indication of higher risk.
   On the other hand, if ratio is less than one, the firm is said to be low geared and the risk is also low.
6. Capital Employed to Net Work Ratio:- Capital employed is the value of the asset that contribute to a company's ability
   = $\frac{\text{Capital Employed}}{\text{Net worth}}$
7. Reserve to Capital Ratio- Funds or material set aside saved or saved for future use
   = $\frac{\text{Reserves}}{\text{Capital}}$
8. Fixed Assets Ratio – This ratio show the relationship between long term funds (Shareholder's funds + long term loan) and fixed assets.
   = $\frac{\text{Long term funds (i.e.shareholder funds +Long term Debts}}{\text{Net Fixed Assets}}$
9. Debtors to Total Funds/Solvency Ratio- This ratio is used for measuring and analyzing long-term solvency of the business.
   This ratio explains that if the firm goes into liquidation then amount realized from sale of assets will be sufficient for repayment of all debtor and liabilities or not.

Solvency Ratio = $\frac{\text{Total outisde liabilities}}{\text{Total Assets}}$

Interpretation –

1. Higher ratio indicates more risk to creditor.
2. If capital gearing ratio is lower than 1 than it is a high gearing and if higher than 1 there it's low gearing.

B. Coverage Ratios/Income Based

10. Interest coverage/Fixed charges cover/Debtors Service Ratio- This ratio indicates how many times the profit covers the interest. It shows the margin of cover to lenders of the company.
    In other words, interest coverage ratio is helpful to test the firm's debt servicing capacity.
    = $\frac{\text{Net profit before interest \& } tax}{\text{Fixed interest charges}}$
11. Dividend Coverage Ratio:- This ratio indicates how many times the profit after tax covers the dividend of preference share holders
    = $\frac{\text{Profit after tax (PAT)}}{\text{Preference Dividend}}$

Activity Ratios or Turn over Ratios or Current Assets movement or Efficiency Ratios

In any business funds are invested in various assets to earn sale and profit. If the management of assets is better, then amount of sale and profit will be higher. Efficiency ratios measures the efficiency and effectiveness with which company manages its resources & assets. These are also called turn over ratios, because these ratios indicate the speed with which assets are converted into sale like stock into sale.

1. (a) Inventory /Stock turnover ratio- A firm must have reasonable stock of inventories in comparison to sales. The level of inventory should neither be too high nor too low.
   Inventory/ Stock turn over Ratio = $\frac{\text{cost of goods sold}}{\text{average inventory}}$
   or = $\frac{\text{Net sales}}{\text{average inventory}}$ or = $\frac{\text{Net sales}}{\text{average inventory at selling price}}$
   (b) Inventory Conversion period- It is also important to see average time taken for clearing the stocks.
   = $\frac{365/\ 360}{\text{inventory turn over ratio}}$
   Interpretation
   This ratio measures the velocity of conversion of stock into sales.
   A high inventory turnover indicates efficient management of inventory because if stock are sold speedly lesser amount of money will be involved in inventory.
   A low inventory turnover indicates dull business, accumulation of obsolete stock poor investment in inventories.
2. Debtors/ Receivables turn over or debtors velocity- Generally all the business firms sales goods on credit as well as for cash credit is considered as tool for higher sale. It is expected that business debtors can be converted in cash within the short period, and due this they are included in the current assets.
   = $\frac{\text{Net credit sales}}{\text{average accounts receivables}}$
   It should be noted that
   i. Average account receivable = Average Debtors + Average B/R
   ii. Average Debtors = $\frac{\text{opening debtors} + \text{closing debtors}}{2}$
   iii. Average B/R = $\frac{\text{opening B/R} + \text{closing B/R}}{2}$

Interpretation

Debtors velocity indicates the number of times the debtors are turned over during the year. If the turnover is higher, it shows higher liquidity and efficiency of management. On the other hand low debtors turnover implies poor liquidity and less efficient management.

3. Average collection period or debts collection period- By this ratio a form comes to know that in how many days its receivables will be converted into cash.

   $= \frac{\text{average debtors and B/R}}{\text{net credit sales}}$ x 365/12

4. Creditors turnover ratio or creditors velocity or payable turnover- creditors turnover ratio is similar to creditors turnover ratio is similar to debtors turnover ratio. It indicates the speed with which the payment are made to the creditors.

   $= \frac{\text{net credit purcahse}}{\text{average A/C payables}}$

   It should be noted that

   i. Average accounts payable= Average Creditors + Average bills payable

   ii. Average Creditors = $\frac{\text{opening creditors + closing creditors}}{2}$

   iii. Average bills payable = $\frac{\text{opening B/P + closing B/P}}{2}$

5. Average payment period- It indicates the average days which a firm takes to make payment to its creditors.

   $= \frac{\text{Average A/cpayable}}{\text{Credit Purcahse}}$ x 365/ 12 Or = $\frac{\text{Months / Days in a year}}{\text{Creditor turnover}}$

   Significance

   Both the creditors turn over ratio and the average payment period indicates the promptness in making payments to creditors.

   Generally, lower the ratio, better the liquidity position of the firm and higher ratio implies less liquidity position of the firm.

6. **Working capital turn over ratio-** Working capital of every firm is directly related with its sales because it increase and decrease with change in current assets & current liabilities

   $= \frac{\text{sales}}{\text{2 average working capital}}$

   Average working capital = $\frac{\text{opening W/C + closing W/C}}{2}$

   If the sale is not given, the figure of COGS can be used

   Working capital turnover ratio = $\frac{\text{Sales / cost of sales}}{\text{net working capital}}$

7. **Fixed Assets Turnover Ratio-** This ratio measure the efficiency as well as profit earning capacity of the firm

   $= \frac{\text{sales}}{\text{net fixed assets}}$

   Net fixed assets = value of assets – depreciation

Some Important Terminologies

1. Miscellaneous expenses.

Under this head we include fictitious assets which are as under-

a) Preliminary expenses
b) Underwriting Commission
c) Discount on issue of shares and debentures
d) Development expenditure
e) Debit balance of P/L A/c (loss)

2. Current Assets

a) Cash in hand b) Cash at bank
c) Bills receivables d) Debtors
e) Short term investments/Marketable securities/ Government securities
f) Accrued income g) Prepaid expenses h) Stock or inventory

3. Liquid Assets

Assets Which can be easily converted into cash is known as liquid assets.

Liquid Assets = Current Assets – Stock – Prepaid Expenses

4. Absolute Liquid Assets

Cash + Bank + Marketable Securities

5. Current Liabilities

a) Creditors b) Bills Payables c) Outstanding Expenses
d) unearned income advance income e) Short term loans f) Bad debts reserves
g) Provision for tax h) Bank overdraft (i) Tax Payable
j) Dividend Payable/Unclaimed dividend

6. Liquid liabilities

Liquid liabilities = Current Liabilities – Bank overdraft

7. Working Capital

Working Capital = Current Assets – Current Liabilities

8. Long term loans / liabilities / Long term Debts

a) Debentures b) Mortgage loan c) Bank loan d) Unsecured loans e) Secured loans

9. Total debts/ total liabilities/ external liabilities

Total debts = Current liabilities +long term liabilities

10. Capital employed

Capital Employed =

Share capital + Reserves and Surplus + Secured loans + Unsecured loans – misc. Expenditure

11. Cost of goods sold

COGS = Sales – Gross profit

Or

12. Operating net profit

Operating Net Profit = Gross Profit – Operating expenses

Or

13. Average Stock

$$\text{Average Stock} \quad \frac{\text{Opening stock + Closing stock}}{}$$

14. Receivables

Receivables = Debtors + Bills receivables

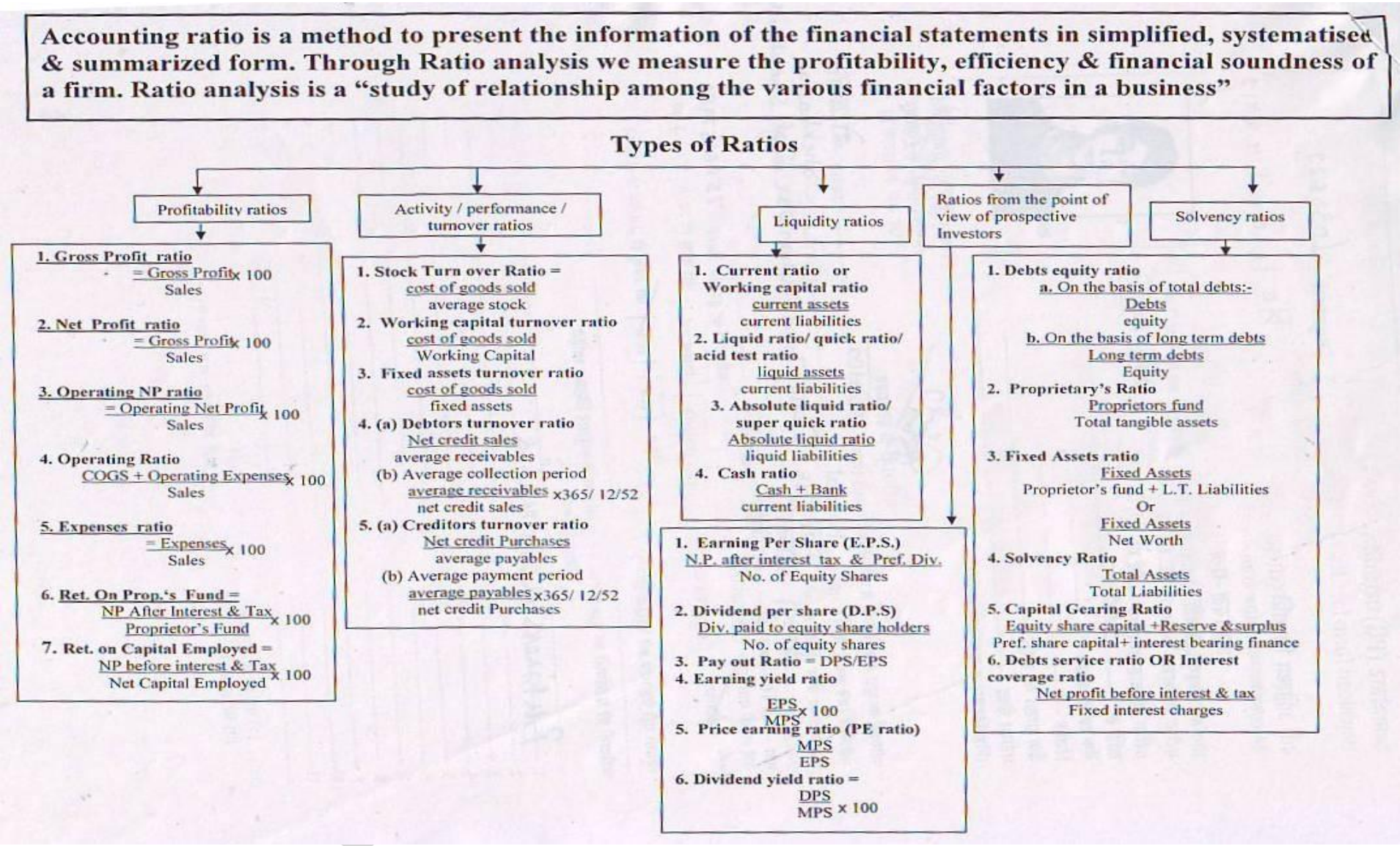
15. Payables

Payables = Creditors + Bills payables

16. Proprietors fund/ shareholders fund/ owners equity/ equity/ Net worth/ Net assets

=

Share capital + Reserve & Surplus – Miscellaneous expenditure


Accounting ratio is a method to present the information of the financial statements in simplified, systematised & summarized form. Through Ratio analysis we measure the profitability, efficiency & financial soundness of a firm. Ratio analysis is a "study of relationship among the various financial factors in a business"
Types of Ratios
Profitability ratios
1. Gross Profit ratio = Gross Profit / Sales x 100
2. Net Profit ratio = Gross Profit / Sales x 100
3. Operating NP ratio = Operating Net Profit / Sales x 100
4. Operating Ratio = COGS + Operating Expenses / Sales x 100
5. Expenses ratio = Expenses / Sales x 100
6. Ret. On Prop.'s Fund = NP After Interest & Tax / Proprietor's Fund x 100
7. Ret. on Capital Employed = NP before interest & Tax / Net Capital Employed x 100
Activity / performance / turnover ratios
1. Stock Turn over Ratio = cost of goods sold / average stock
2. Working capital turnover ratio = cost of goods sold / Working Capital
3. Fixed assets turnover ratio = cost of goods sold / fixed assets
4. (a) Debtors turnover ratio = Net credit sales / average receivables
(b) Average collection period = average receivables x365/ 12/52 / net credit sales
5. (a) Creditors turnover ratio = Net credit Purchases / average payables
(b) Average payment period = average payables x365/ 12/52 / net credit Purchases
Liquidity ratios
1. Current ratio or Working capital ratio = current assets / current liabilities
2. Liquid ratio/ quick ratio/ acid test ratio = liquid assets / current liabilities
3. Absolute liquid ratio/ super quick ratio = Absolute liquid ratio / liquid liabilities
4. Cash ratio = Cash + Bank / current liabilities
Ratios from the point of view of prospective Investors
1. Earning Per Share (E.P.S.) = N.P. after interest tax & Pref. Div. / No. of Equity Shares
2. Dividend per share (D.P.S) = Div. paid to equity share holders / No. of equity shares
3. Pay out Ratio = DPS/EPS
4. Earning yield ratio = EPS / MPS x 100
5. Price earning ratio (PE ratio) = MPS / EPS
6. Dividend yield ratio = DPS / MPS x 100
Solvency ratios
1. Debts equity ratio
a. On the basis of total debts:- Debts / equity
b. On the basis of long term debts = Long term debts / Equity
2. Proprietary's Ratio = Proprietors fund / Total tangible assets
3. Fixed Assets ratio = Fixed Assets / Proprietor's fund + L.T. Liabilities
Or
Fixed Assets / Net Worth
4. Solvency Ratio = Total Assets / Total Liabilities
5. Capital Gearing Ratio = Equity share capital +Reserve &surplus / Pref. share capital+ interest bearing finance
6. Debts service ratio OR Interest coverage ratio = Net profit before interest & tax / Fixed interest charges

Sum 1: Calculate gross profit ratio:

	Rs.		Rs.
Sales	2,20,000	Purchases	1,75,000
Sales returns	20,000	Purchase returns	15,000
Opening stock	30,000	Closing stock	40,000

Solution:

$$\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Sales}} \times 100$$

Gross profit = Sales – Cost of goods sold

Sales (Net) = Sales – Returns

= Rs. 2,20,000 – Rs. 20,000 = Rs. 2,00,000

Net purchases = Purchases – Returns

= Rs. 1,75,000 – Rs. 15,000 = Rs. 1,60,000

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

= 30,000 + 1,60,000 – 40,000 = 1,50,000

Gross profit = Rs. 2,00,000 – Rs. 1.50.000 = Rs 50,000

$$\text{Gross profit ratio} = \frac{50,000}{2,00,000} \times 100 = 25\%$$

Sum 2: Calculate Gross Profit Ratio from the following figures:

	RS.		
Sales	10,00,000	Purchases	6,00,000
Sales returns	1,00,000	Purchase returns	1,50,000
Opening stock	2,00,000	Closing stock	65,000

Solution:

$$\text{Gross Profit Ratio} = \frac{\text{Gross profit}}{\text{Net sales}} \times 100$$

Gross profit is ascertained by preparing Trading Account.

Trading Account

Particulars	*Rs.*	*Rs.*	*Particulars*	*Rs.*	*Rs.*
To Opening Stock		2,00,000	By Sales	10,00,000	
To Purchases	6,00,000		*Less:* Returns	1,00,000	
Less: Returns	1,50,000	4,50,000	Net sales		9,00,000
To Gross profit		3,15,000	By Closing stock		65,000
		9,65,000			9,65,000

$$\text{Gross profit ratio} = \frac{3,15,000}{9,00,000} \times 100 = 35\%$$

Sum 3:

(a) From the following details of a business concern calculate net profit ratio.

Sales	3,50,000	Cost of goods sold	1,50,000
Administration exp.	50,000	Selling expenses	10,000

(b) From the following details you are required to ascertain net profit and calculate net profit ratio.

Sales	5.40,000	Sales returns	40,000
Gross profit	3,00,000	Income from investments	40,000
Loss on sale of plant	30,000	Operating expenses	1,20,000
Provision for tax	50,000		

Solution:

(a) Net profit Ratio $= \frac{\text{Net profit}}{\text{Net sales}} \times 100$

Net profit = Sales – Cost of goods sold – Administration expenses – Selling expenses

= 3,50,000 – 1,50,000 – 50,000 – 10,000

= Rs. 1,40,000

Net profit ratio $= \frac{1,40,000}{3,50,000} \times 100 = 40\%$

(b) Net profit is ascertained by preparing P & L A/c

Profit & Loss Account

Particulars	*Rs.*	*Particulars*	*Rs.*
To Operating expenses	1,20,000	By Gross profit b/d	3,00,000
To Loss on sale of plant	30,000	By Income from investments	40,000
To Provision for tax	50,000		
To Net profit	1,40,000		
	3,40,000		3,40,000

Net profit Ratio $= \frac{\text{Net profit}}{\text{Net sales}} \times 100$

Net sales = Sales – Sales returns

= 5,40,000 – 40,000 = Rs. 5,00,000

$\therefore$ Net profit ratio $= \frac{1,40,000}{5,00,000} \times 100 = 28\%$

Sum 4: Calculate Operating Profit ratio and Net Profit ratio,

	Rs.		Rs.
Sales	2,00,000	Administration expenses	20,000
Gross profit	70,000	Income from investments	22,000
Selling expenses	10,000	Loss due to fire	12,000

Solution:

(i) Operating profit ratio $= \frac{\text{Operating profit}}{\text{Sales}} \times 100$

Operating profit = Gross profit – Operating expenses

= 70,000 – 10,000 – 20,000 = 40,000

Operating profit ratio $= \frac{40,000}{2,00,000} \times 100 = 20\%$

Note : Selling expenses and administration expenses are operating expenses.

(ii) Net profit ratio $= \frac{\text{Net profit}}{\text{Sales}} \times 100$

		Rs.
Gross profit		70,000
Add Income from Investments		22,000
		92,000
Less	Rs.	
Selling expenses	10,000	
Administration expenses	20,000	
Loss due to fire	12,000	
		42,000
Net profit		50,000

Net profit ratio $= \frac{50,000}{2,00,000} \times 100 = 25\%$

Sum 5 : Calculate 1. Gross profit ratio, 2. Operating ratio, 3. Operating profit ratio, 4. Net profit ratio.

Sales	21,000	Income from investments	200
Sales returns	1,000	Administration expenses	1,300
Cost of sales	16,400	Selling expenses	700
Interest expenses (non-operating)	100	Depreciation	200

Solution:

Income Statement

		Rs.
Sales		21,000
Less Returns		1,000
Net Sales		20,000
Less Cost of sales		16,400
Gross Profit		3,600
Less Operating expenses:	Rs.	
Administration expenses	1,300	
Selling expenses	700	
Depreciation	200	
		2,200
Operating Profit		1,400
Add Non-operating income (from investments)		200
		1,600
Less Non-operating expenses		100
Net Profit		1,500

1. Gross profit ratio $= \frac{\text{Gross profit}}{\text{Sales}} \times 100$

$= \frac{3,600}{20,000} \times 100 = 18\%$

2. Operating ratio

$= \frac{\text{Cost of goods sold + Operating expenses}}{\text{Sales}} \times 100$

$= \frac{16,400 + 2,200}{20,000} \times 100 = 93\%$

3. Operating profit ratio $= \frac{\text{Operating profit}}{\text{Sales}} \times 100$

$= \frac{1,400}{20,000} \times 100 = 7\%$

Alternatively, operating profit ratio

$= 100 - \text{Operating ratio}$

$= 100 - 93 = 7\%$

4. Net profit ratio $= \frac{\text{Net profit}}{\text{Sales}} \times 100$

$= \frac{1,500}{20,000} \times 100 = 7.5\%$

Sum 6: Profit and Loss Account of X Ltd., is given below

Profit and Loss Account

Particulars	*Rs.*	*Particulars*	*Rs*
To Opening stock	2,00,000	By Sales	16,00,000
To Purchases	12,00,000	By Closing stock	3,20,000
To Administration expenses	120,000	By Dividend	4,000
To Selling expenses	80,000		
To Financial expenses	40,000		
To Loss on sale of assets	5,000		
To Net profit	2,79,000		
	19,24,000		**19,24,000**

Calculate the profitability ratios

Solution:

It is appropriate to redraft the Profit and Loss Account given before calculating profitability ratios:

Profit and Loss Account

Particulars	*Rs.*	*Particulars*	*Rs.*
To Opening stock	2,00,000	By Sales	16,00,000
To Purchases	12,00,000	By Closing stock	3,20,000
To Gross profit c/d	5,20,000		
	19,20,000		19,20,000
To Administration expenses	1,20,000	By Gross profit b/d	5,20,000
To Selling expenses	80,000		
To Operating profit c/d	3,20,000		
	5,20,000		5,20,000
To Finance expenses	40,000	By Operating profit b/d	3,20,000
To Loss on sale of assets	5,000	By Dividend received	4,000
To Net profit c/d	2,79,000		
	3,24,000		3,24,000

Profitability Ratios

(1) Gross profit ratio $= \frac{\text{Gross profit}}{\text{Net sales}} \times 100$

$= \frac{5,20,000}{16,00,000} \times 100 = 32.5\%$

(2) Net profit ratio $= \frac{\text{Net profit}}{\text{Net sales}} \times 100$

$= \frac{2,79,000}{16,00,000} \times 100 = 17.44\%$

(3) Operating profit ratio $= \frac{\text{Operating profit}}{\text{Net sales}} \times 100$

$= \frac{3,20,000}{16,00,000} \times 100$

$= 20\%$

(4) Operating ratio $= \frac{\text{Cost of sales} + \text{Operating expenses}}{\text{Sales}} \times 100$

Cost of sales = Sales – Gross profit

= Rs. 16,00,000 – 5,20,000

= Rs. 10,80,000

Operating expenses = Administration expenses + Selling expenses

= Rs. 1,20,000 + 80,000

= Rs. 2,00,000

Operating ratio $= \frac{10,80,000 + 2,00,000}{16,00,000} \times 100$

$= 80\%$

Note: Finance expenses are generally considered as non operating expenses.

(5) Expenses ratios:

(a) Administrative expenses ratio $= \frac{\text{Administration expenses}}{\text{Sales}} \times 100$

$= \frac{1,20,000}{16,00,000} \times 100 = 7.5\%$

(b) Selling expenses ratio $= \frac{\text{Selling expenses}}{\text{Sales}} \times 100$

$= \frac{80,000}{16,00,000} \times 100 = 5\%$

(c) Finance expenses ratio $= \frac{\text{Finance expenses}}{\text{Sales}} \times 100$

$= \frac{40,000}{16,00,000} \times 100 = 2.5\%$

(d) Non operating expenses ratio $= \frac{\text{Non operating expenses}}{\text{Sales}} \times 100$

Non operating expenses = Loss on sale of assets + Finance expenses

= 5,000 + 40,000

$= \frac{45,000}{16,00,000} \times 100 = 2.81\%$

Sum 7: M/s. Asoka Ltd. has submitted the following Balance Sheet as on 30th June 2000.

	Rs.		Rs.
Equity capital	1,50,000	Fixed assets	1,62,000
Revenue reserves	30,000	Current assets:	
8% Debentures	20,000	Stock	22,000
Current liabilities:		Debtors	51,000
Sundry creditors	49,000	Bill's receivable	2,000
		Bank	12,000
	2,49,000		**2,49,000**

Find the current ratio and quick ratio and comment on the financial condition of the company.

Solution

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} = \frac{87,000}{49,000} = 1.79 : 1$$

$$\text{Quick assets} = \text{Current Assets} - \text{Stock}$$

$$= \text{Rs. } 87,000 - \text{Rs. } 22,000 = \text{Rs. } 65,000$$

$$\text{Quick ratio} = \frac{\text{Quick assets}}{\text{Quick liabilities}} = \frac{65,000}{49,000^*} = 1.32 : 1$$

* As there is no overdraft, Quick liabilities = Current liabilities

Comment

Judging by current ratio and quick ratio, the liquidity position of M/s. Asoka Ltd. is satisfactory. The current ratio of the company is slightly less than the ideal ratio 2:1.

The quick ratio of the company is 1.32:1 while the ideal ratio is 1:1. As the ratio is higher, the company's liquidity position is better.

This indicates a very comfortable position for creditors. In short, the short-term solvency position can be regarded as good. The long-term solvency position is also sound as the proprietors' funds (1,50,000 + 30,000) are much more than outsiders funds (20,000 + 49,000)

Sum 8 : From the following particulars pertaining to assets and liabilities of a company calculate (1) Current ratio (2) Liquid ratio (3) Proprietary ratio (4) Debt-Equity ratio (5) Capital Gearing ratio.

Liabilities	**RS**	**Assets**	**Rs**
3,000 Equity shares of Rs. 100 each	5,00,000	Land and Building	6,00,000
2,000 8% Preference shares of Rs. 100 each	2,00,000	Plant and Machinery	5,00,000
4,000 9% Debentures of Rs. 100 each	4,00,000	Stock	2,40,000
Reserves	3,00,000	Debtors	2,00,000
Creditors	1,50,000	Cash and bank	55,000
Bank overdraft	50,000	Pre -paid expenses	5,000
	16,00,000		**l6,00,000**

Solution:

(1) Current ratio $= \frac{\text{Current assets}}{\text{Current liabilities}}$

Current assets = Stock + Debtors + Cash + Bank + Prepaid expenses

= Rs. 2,40,000 + 2,00,000 + 55,000 + 5,000

= Rs. 5,00,000

Current liabilities = Creditors + Bank overdraft

= Rs. 1,50,000 + 50,000 = Rs. 2,00,000

Current ratio $= \frac{\text{Rs. } 5,00,000}{2,00,000} = 2.5 : 1$

(2) Liquid ratio $= \frac{\text{Liquid assets}}{\text{Liquid liabilities}}$

Liquid assets = Current assets – (Stock + Prepaid expenses)

= Rs.5,00,000 – (2,40,000 + 5,000)

= Rs. 2,55,000

Liquid liabilities = Current liabilities – Overdraft

= Rs.2,00,000 – 50,000 = Rs. 1,50,000

$= \frac{2,55,000}{1,50,000} = 1.7 : 1$

(3) Proprietory ratio $= \frac{\text{Proprietors' funds}}{\text{Total tangible assets}}$

Proprietors' funds = Equity share capital + Preference share capital + Reserves and surplus

= Rs. 5,00,000 + 2,00,000 + 3,00,000

= Rs. 10,00,000

Total assets = Rs. 16,00,000

$= \frac{10,00,000}{16,00,000} = 0.625 : 1$

(4) Debt-Equity ratio $= \frac{\text{External equities}}{\text{Internal equities}} = \frac{\text{Debt}}{\text{Equity}}$

Debt = Debentures + Current liabilities

= 4,00,000 + 2,00,000 = Rs. 6,00,000

Equity = Proprietors' funds = Rs. 10,00,000

Debt-Equity ratio $= \frac{6,00,000}{10,00,000} = 0.6 : 1$

(5) Capital gearing ratio

$$\frac{\text{Preference capital + Long – term debt bearing fixed interest}}{\text{Equity share capital + Reserves and surplus}}$$

$$\frac{2,00,000 + 4,00,000}{5,00,000 + 3,00,000} = \frac{6,00,000}{8,00,000} = 0.75 : 1$$

Sum 9: The following is the trading account of Mr. Murugan. Calculate stock turnover ratio.

	Rs.		Rs.
To Opening stock	15,920	By Sales	78,000
To Purchases	39,000	By Closing stock	14,400
To Carriage	1,000		
To Gross profit	36,480		
	92,400		**92,400**

Solution:

$$\text{Stock turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average stock}}$$

Cost of goods sold = Sales – Gross profit
= Rs. 78,000 – 36,480 = Rs. 41,520

Average stock = (Opening stock + Closing stock) ÷ 2
= (15,920 + 14,400) ÷ 2
= 30,320 ÷ 2 = 15,160

$$\text{Stock turnover ratio} = \frac{41,520}{15,160} = 2.74 \text{ times}$$

Sum 10 : Pankajam Ltd. sells goods on cash as well as on credit basis. The following information is extracted from their books of accounts for 1993:

Total sales	1,00,000
Cash sales (included in the above)	20,000
Sales returns	7,000
Total debtors for sales as on 31 -12-1993	9,000
Bills receivables as on 31 -12-1993	2,000
Provision for doubtful debts	1,000
Trade creditors as on 31-12-93	10,000

You are required to calculate
(1) Debtors/Receivables turnover ratio;
(2) The average collection period

Solution:

(1) Debtors/Receivables turnover ratio

$$= \frac{\text{Credit sales}}{\text{Average Accounts Receivables}}$$

Credit sales:

	Rs.
Total sales	1,00,000
Less: Cash sales	20,000
	80,000
Less: Sales returns	7,000
Credit sales	73,000

Average accounts receivables:

$$= \frac{\text{(Opening debtors + Bills receivable) + (Closing debtors + Bills receivables)}}{2}$$

Since opening items are not given, closing debtors and bills are to be taken as average receivables

$$= 9{,}000 + 2{,}000 = \text{Rs. } 11{,}000$$

$$\therefore \text{ Debtors Turnover ratio} = \frac{73{,}000}{11{,}000} = 6.636 \text{ times}$$

$$\text{(2) Average collection period} = \frac{\text{Days / Months in the year}}{\text{Debtors turnover ratio}}$$

$$\text{Average collection period in days} = \frac{365}{6.636} = 55 \text{ days}$$

$$\text{Average collection period in months} = \frac{12}{6.636} = 1.8 \text{ months}$$

(or)

Average collection period can also be directly calculated as follows:

$$\frac{\text{Average debtors + Bills receivables}}{\text{Credit sales}} \times \text{Days / Months in the year}$$

$$\text{Collection period in days} = \frac{9{,}000 + 2{,}000}{73{,}000} \times 365 = 55 \text{ days}$$

$$\text{Collection period in months} = \frac{9{,}000 + 2{,}000}{73{,}000} \times 12 = 1.8 \text{ months}$$

. ***Note:*** Provision for doubtful debts and trade creditors given are irrelevant for computation of debtors turnover and average collection period.

Sum 11 : From the following, you are required to calculate

(a) Debtors turnover (b) Average age of debtors

	1999	**1998**
Net sales	18,00,000	15,00,000
Debtors (beginning of the year)	1,72,000	1,60,000
Debtors (end of the year)	2,34,000	1,72,000

Solution:

$$\text{Debtors turnover} = \frac{\text{Credit sales}}{\text{Debtors + Bills receivable}}$$

There are no bills receivable. As debtors at the beginning as well as the end are given, average debtors is to be used for the calculation of the ratio.

Average debtors:

1998 = (1,60,000 + 1,72,000) ÷ 2 = 3,32,000 ÷ 2 = **Rs. 1,66,000**

1999 = (1,72,000 + 2,34,000) ÷ 2 = 4,06,000 ÷ 2 = Rs. 2,03,000

	1998	1999
Debtors turnover =	$\frac{15,00,000}{1,66,000} = 9.04$	$\frac{18,00,000}{2,03,000} = 8.87$

Average age of debtors or Average collection period

$$= \frac{\text{Debtors}}{\text{Credit Sales}} \times \text{No. of working days in a year}$$

1998 $= \frac{1,66,000}{15,00,000} \times 365 = 40$ days

1999 $= \frac{2,03,000}{18,00,000} \times 365 = 41$ days

Note : Number of working days is taken as 365. All sales are assumed as credit sales.

Sum 12 :

A Trader purchases goods both on cash as well as on credit terms. The following particulars are obtained from the books:

Total purchases (gross)	2,00,000
Cash purchases	20,000
Purchase returns	34,000
Creditors at the end	70,000
Bills payable at the end	40,000

You are required to

(1) Calculate creditors turnover ratio

(2) Calculate average payment period

Solution:

(1) Creditors turnover ratio $= \frac{\text{Net credit purchases}}{\text{Average accounts payable}}$

		Rs.
	Total purchases	2,00,000
Less:	Cash purchases	20,000
		1,80,000
Less:	Purchase returns	34,000
	Net credit purchases	1,46,000

Average accounts payable :

$$= \frac{(\text{Opening creditors} + \text{Bills payable}) + (\text{Closing creditors} + \text{Bills payable})}{2}$$

Since opening creditors and bills payable are not given, the closing creditors and bills payable are taken as average accounts payable = 70,000 + 40,000 = Rs. 1,10,000

$\therefore$ Creditors turnover ratio $= \frac{1,46,000}{1,10,000} = 1.327$ times

(2) Average payment period $= \frac{\text{Days / Months in the year}}{\text{Creditors turnover ratio}}$

Average payment period in days $= \frac{365}{1.327} = 275$ days

Average payment period in months $= \frac{12}{1.327}$ 9.04 months

Average payment period can also be directly found as follows:

Average payment period :

$= \frac{\text{Average accounts payable}}{\text{Credit purchases}} \times$ Days / months in the year

Average payment period in days $= \frac{1,10,000}{1.46,000} \times 365 = 275$ days

Average payment period in months $= \frac{1,10,000}{1.46,000} \times 12 = 9.04$ months

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Sum 13 : Ganesh Bros, sells goods on cash and credit terms and also purchased goods on cash and credit terms The following particulars are obtained from their books

Total sales	5,00,000	Cash sales	40,000
Sales returns	20,000	Debtors at the end	80,000
Bills receivable at the end	20,000	Reserve for doubtful debts	1,000
Total purchases	3,00,000	Cash purchases	50,000
Purchase returns	10,000	Creditors at the end	60,000
Bills payable at the end	20,000	Reserve for discount on creditors	2,000
Closing stock	40,000	Gross profit	1,00,000
Fixed assets	10,00,000		

Calculate activity ratios (turnover ratios)

Solution:

Activity ratios (or) Turnover Ratios

(1) Stock turnover ratio $= \frac{\text{Cost of sales}}{\text{Average stock}}$

Cost of sales = Sales – Gross profit

= 4,80,000 – 1,00,000 = 3,80,000

Net Sales = Sales – Sales returns

= 5,00,000 – 20,000

= 4,80,000

Average stock $= \frac{\text{Opening stock + Closing stock}}{2}$

$= \frac{50,000 + 40,000}{2}$

= 45,000

$\therefore$ Stock turnover ratio $= \frac{3,80,000}{45,000} = 8.44$ times

(2) Fixed assets turnover ratio $= \frac{\text{Cost of sales}}{\text{Fixed assets}}$ (or) $\frac{\text{Sales}}{\text{Fixed assets}}$

On cost of sales basis $= \frac{3,80,000}{10,00,000} = 0.38$ times

On sales basis $= \frac{4,80,000}{10,00,000} = 0.48$ times

(3) Debtors turnover ratio $= \frac{\text{Credit Sales}}{\text{Average Accounts receivable}}$

Credit sales = Total sales - Cash sales – Sales returns

Net credit sales = 5,00,000 – 40,000 – 20,000 = 4,40,000

Accounts receivable = Debtors + Bills receivable

= 80,000 + 20,000 = 1,00,000

Closing receivables alone are used in the absence of opening figures.

Debtors turnover ratio $= \frac{4,40,000}{1,00,000} = 4.4$ times

(4) Debtors collection period $= \frac{\text{Months in a year}}{\text{Debtors turnover}}$

$= \frac{12 \text{ months}}{4.4} = 2.73$ months

(or)

$= \frac{\text{Days in the year}}{\text{Debtors turnover}}$

$= \frac{365}{4.4} = 83$ days

(5) Accounts payable turnover $= \frac{\text{Credit Purchases}}{\text{Average Accounts payable}}$

Credit purchases = Purchases – Purchase returns – Cash purchases

= Rs. 3,00,000 – 10,000 – 50,000

= Rs. 2,40,000

Accounts payable = Creditors + Bills payable

= 60,000 + 20,000

= 80,000

Accounts payable turnover $= \frac{2,40,000}{80,000} = 3$ times

(6) Accounts payable period (or) Debt payment period

$$= \frac{\text{Months in a year}}{\text{Accounts payable turnover}'}$$

$$= \frac{12}{3} = 4 \text{ months}$$

(or)

$$= \frac{\text{Days in the year}}{\text{Accounts payable turnover}} =$$

$$= \frac{365}{3} = 122 \text{ days}$$

Note: Reserve for doubtful debts and reserve for discount on creditors are not relevant for any ratio and should be ignored.

Sum 14: Given:
Current ratio = 2.8 Acid-test ratio = 1.5 Working capital = Rs. 1,62,000
Calculate:
(1) Current assets (2) Current liabilities (3) Liquid assets (4) Stock

Solution:

Calculation of current assets and current liabilities:

Current ratio given $= 2.8 \text{ (or) } \frac{2.8}{1}$

Current ratio $= \frac{\text{Current assets}}{\text{Current liabilities}}$

$\therefore$ If current assets are 2.8, current liabilities are 1

Working capital = Current assets – Current liabilities
= 2.8 – 1 = 1.8

Working capital given = Rs. 1,62,000
$\therefore$ 1.8 = 1,62,000

(1) Current assets $= 1{,}62{,}000 \times \frac{2.8}{1.8} = \text{Rs. } 2{,}52{,}000$

(2) Current liabilities $= 1{,}62{,}000 \times \frac{1}{1.8} = \text{Rs. } 90{,}000$

Calculation of Liquid Assets:

Acid-test ratio given $= 1.5 \text{ (or) } \frac{1.5}{1}$

Acid test ratio $= \frac{\text{Liquid assets}}{\text{Current liabilities}}$

$1.5 = \frac{\text{Liquid assets}}{90{,}000}$

(3) Liquid assets $= 90{,}000 \times 1.5 = \text{Rs. } 1{,}35{,}000$

Calculation of stock

Liquid assets = Current assets – Stock
1,35,000 = 2,52,000 – Stock
(4) Stock = 2,52,000 – 1,35,000 = Rs. 1,17,000

Sum 15 : From the following details, compute (1) Current assets; (2) Quick assets and (3) Stock

Current liabilities Rs. 9,00,000 Current ratio 2.5
Acid test ratio 2 (without prepaid expenses)

Solution:

Calculation of current assets

Current ratio given = 2.5 (or) $\frac{2.5}{1}$

Current ratio = $\frac{\text{Current assets}}{\text{Current liabilities}}$

∴ If current liabilities are 1, current assets are 2.5
Current liabilities given Rs. 9,00,000

(1) ∴ Current assets = $9,00,000 \times \frac{2.5}{1}$ = Rs. 22,50,000

Calculation of Liquid assets:

Acid Test ratio or Liquid ratio given 2 or $\frac{2}{1}$

Acid Test ratio = $\frac{\text{Liquid assets}}{\text{Current liabilities}}$

$2 = \frac{\text{Liquid assets}}{9,00,000}$

(2) ∴ Liquid assets = $9,00,000 \times 2$ = Rs. 18,00,000

Calculation of stock:

Liquid assets = Current assets – Stock
18,00,000 = 22,50,000 – Stock
(3) Stock = 22,50,000 – 18,00,000 = Rs. 4,50,000

Sum 16 : From the following compute the value of stock

Sales Rs. 10,00,000
Gross profit ratio = 25%
Stock turnover ratio = 10
Closing stock is more than opening stock by Rs. 25,000.

Solution:

Gross profit = Sales × Gross profit ratio
= 10,00,000 × 25% = 2,50,000

Cost of sales = Sales – Gross profit
= 10,00,000 – 2,50,000 = Rs. 7,50,000

Stock turnover ratio = $\frac{\text{Cost of Sales}}{\text{Average stock}}$

$10 = \frac{7,50,000}{\text{Average stock}}$

Average stock = $\frac{7,50,000}{10}$ = Rs. 75,000

Closing stock is Rs. 25,000 more than opening stock.

$$\therefore \text{ Closing stock} = \text{Average stock} + \frac{1}{2} \text{ of excess of closing stock over opening stock}$$

$$= 75{,}000 + \frac{1}{2} \times 25{,}000$$

$$= 75{,}000 + 12{,}500 = 87{,}500$$

(or)

Alternatively:

$$\text{Average stock} = \frac{\text{Opening stock} + \text{Closing stock}}{2}$$

If opening stock is x,

$$75{,}000 = \frac{x + x + 25{,}000}{2}$$

$$2 \times 75{,}000 - 25{,}000 = 2x$$

$$x = \frac{1{,}25{,}000}{2} = \text{Rs. } 62{,}500$$

$$\therefore \text{ Closing stock} = 62{,}500 + 25{,}000 = 87{,}500$$

Sum 17: From the following information calculate
1. Return on capital employed 2. Return on shareholders' funds 3. Return on total assets

Balance Sheet

	Rs.		Rs.
Share Capital	1,00,000	Fixed assets	8,00,000
Reserves	2,00,000	Current assets	2,00,000
10% Debentures	6,00,000		
Creditors	1,00,000		
	10,00,000		**10,00,000**

Profit before tax is Rs. 1,20,000. Tax rate is 40%.

Solution:

1. Return on capital employed

$$= \frac{\text{Profit after tax + Interest + Tax}}{\text{Capital employed}} \times 100$$

	Rs.
Profit before tax (i.e. Profit after tax + Tax)	1,20,000
Add interest (10% on Debentures of 6,00,000)	60,000
	1,80,000

$$\text{Capital employed} = \text{Share capital + Reserves + Long-term debt}$$

$$= 1{,}00{,}000 + 2{,}00{,}000 + 6{,}00{,}000 = \text{Rs. } 9{,}00{,}000$$

$$\text{Return on capital employed} = \frac{1{,}80{,}000}{9{,}00{,}000} \times 100 = 20\%$$

2. Return on shareholders' funds $= \frac{\text{Net profit after tax}}{\text{Shareholders' funds}} \times 100$

Profit before tax	Rs. 1,20,000
Less: Tax @ 40%	Rs. 48,000
Profit after tax	Rs. 72,000

Shareholders' Funds:	Rs.
Share capital	1,00,000
Reserves	2,00,000
	3,00,000

Return on shareholders' funds $= \frac{72,000}{3,00,000} \times 100 = 24\%$

3. Return on total assets $= \frac{\text{Profit after tax}}{\text{Total assets}} \times 100$

$= \frac{72,000}{10,00,000} \times 100 = 7.2\%$

Sum 18 :

Prepare a Balance Sheet with as many details as possible from the following information

Gross profit ratio	20%
Debtors turnover	6 times
Fixed assets to net worth	0.80
Reserves to capital	0.50
Current ratio	2.50
Liquid ratio	1.50
Net working capital	Rs. 3,00,000
Stock turnover ratio	6 times

Solution:

Balance Sheet as on .....

Liabilities	*Rs.*	*Rs.*	*Assets*	*Rs.*	*Rs.*
Capital	10,00,000		Fixed assets		12,00,000
Reserves and surplus	5,00,000		*Current assets:*		
Net worth		15,00,000	Closing stock	2,00,000	
Current liabilities		2,00,000	Debtors	2,50,000	
			Other liquid assets	50,000	5,00,000
		17,00,000			17,00,000

Working notes:

(1) Calculation of Current assets and current liabilities:

Current ratio given = 2.50 (or) $\frac{2.50}{1}$

Current ratio = $\frac{\text{Current assets}}{\text{Current liabilities}}$

∴ When current liabilities are 1, current assets are 2.5

Working capital = Current assets – Current liabilities

= 2.5 – 1 = 1.5

(2) Calculation of Liquid assets and stock

Liquid ratio given = 1.50 (or) $\frac{1.50}{1}$

Liquid ratio = $\frac{\text{Liquid assets}}{\text{Current liabilities}}$

$\therefore 1.5 = \frac{\text{Liquid assets}}{2,00,000}$

Liquid assets = 2,00,000 × 1.5 = Rs. 3,00,000

Liquid assets = Current assets – Stock

3,00,000 = 5,00,000 – Stock

∴ Stock = 5,00,000 – 3,00,000

= Rs. 2,00,000

(3) Calculation of Debtors

Stock turnover ratio given = 6 times

Stock turnover ratio = $\frac{\text{Cost of goods sold}}{\text{Average stock}}$

$6 = \frac{\text{Cost of goods sold}}{2,00,000}$

∴ Cost of goods sold = 2,00,000 × 6

= Rs. 12,00,000

Gross profit ratio given 20%

When sales = 100, Gross profit= 20; Cost of goods sold = 80

$\therefore$ Sales = Cost of goods sold $\times \frac{100}{80}$

$= 12,00,000 \times \frac{100}{80}$ = Rs. 15,00,000

$$\text{Debtors turnover} = \frac{\text{Credit sales}}{\text{Average receivables}}$$

$$6 = \frac{15,00,000}{\text{Average receivables}}$$

$$\therefore \text{Average receivables} = \frac{15,00,000}{6}$$

$$= \text{Rs. } 2,50,000$$

Note: All sales are taken as credit sales. In the absence of opening items and bills receivables at the end, average receivables are taken as closing debtors.

(4) Other liquid assets

Liquid assets	3,00,000
Less: Debtors	2.50.000
Other liquid assets	50,000

(5) Calculation of fixed assets and 'Net worth'

Fixed assets to net worth given 0.80

Assuming there are no long-term debt and fictitious assets,

Balance Sheet equation = Net worth + Current liabilities = Fixed assets + Current assets

Assuming net worth as x,

$$x + 2,00,000 = .8x + 5,00,000$$

$$x - .8x = 5,00,000 - 2,00,000 \quad \therefore .2x = 3,00,000$$

$$x = \frac{3,00,000}{.2} = \text{Rs. } 15,00,000$$

$$\therefore \text{Net worth} = 15,00,000$$

$$\text{Fixed assets} = 15,00,000 \times .8 = 12,00,000$$

(6) Calculation of capital and reserves

$$\text{Reserves to capital given} = 0.50 \text{ (or) } \frac{0.50}{1}$$

If capital is 1, reserves are 0.50

$$\therefore \text{Networth} = 0.50 + 1 = 1.5$$

$$\text{Networth} = 1.5 = 15,00,000$$

$$\therefore \text{Capital} = 15,00,000 \times \frac{1}{1.5} = \text{Rs. } 10,00,000$$

$$\text{Reserves} = 15,00,000 \times \frac{0.5}{1.5} = \text{Rs. } 5,00,000$$

Sum 19:

Following are the ratios relating to the trading activities of Neela Traders Ltd.. Madras
Receivables turnover 90 days (360 days year)
Inventor} turnover 3 times
Payables turnover 3 months
Gross profit ratio 25%
Gross profit for the year amounted to Rs 18,000. Closing inventory of the year is Rs 2,000 above the opening inventory. Bills receivable amount to Rs 2,500 and bills payable Rs 1,000
Ascertain the following
(a) Sales (b) Debtors (c) Closing inventory and (d) Sundry creditors

Solution:

(a) Sales:

Gross profit ratio given 25%

$$\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Sales}} \times 100$$

$$25\% = \frac{18{,}000}{\text{Sales}}$$

$$\text{Sales} = \frac{18{,}000}{25\%} = \text{Rs. } 72{,}000$$

(b) Debtors:

Receivables' turnover given 90 days.

$$\text{Receivables turnover in days} = \frac{\text{Days in the year}}{\text{Receivables turnover ratio}}$$

$$90 = \frac{360}{\text{Receivables' turnover ratio}}$$

$$\therefore \text{ Receivables turnover ratio} = \frac{360}{90} = 4 \text{ times}$$

$$\text{Receivables turnover ratio} = \frac{\text{Credit sales}}{\text{Average receivables}}$$

$$4 = \frac{72{,}000}{\text{Average receivables}}$$

$$\text{Average receivables} = \frac{72{,}000}{4} = 18{,}000$$

Less: Bills receivable	2,500
Debtors	15,500

(c) Closing inventory:

$$\text{Cost of sales} = \text{Sales} - \text{Gross profit}$$
$$= 72{,}000 - 18{,}000 = 54{,}000$$

$$\text{Inventory turnover} = \frac{\text{Cost of sales}}{\text{Average inventory}}$$

$$3 = \frac{54{,}000}{\text{Average inventory}}$$

$$\text{Average inventory} = \frac{54{,}000}{3} = 18{,}000$$

Closing inventory is Rs. 2,000 above opening inventory.

$$\therefore \text{Closing inventory} = \text{Average inventory} + \frac{1}{2} \text{ of excess of closing inventory over opening inventory}$$

$$= 18{,}000 + \frac{1}{2} \times 2{,}000$$

$$= 18{,}000 + 1{,}000 = \text{Rs. } 19{,}000$$

(or)

Alternatively,

$$\text{Average inventory} = \frac{\text{Opening inventory} + \text{Closing inventory}}{2}$$

If opening inventory is x

$$18{,}000 = \frac{x + x + 2{,}000}{2}$$

$$2 \times 18{,}000 - 2{,}000 = 2x$$

$$x = \frac{34{,}000}{2} = \text{Rs. } 17{,}000$$

$$\therefore \text{Closing stock} = 17{,}000 + 2{,}000 = 19{,}000$$

(d) Payables turnover

$$\text{Purchases} = \text{Sales} + \text{Closing stock} - \text{Opening stock} - \text{Gross profit}$$

$$= 72{,}000 + 19{,}000 - 17{,}000 - 18{,}000 = \text{Rs. } 56{,}000$$

$$\text{Payables turnover in months} = \frac{\text{Months in the year}}{\text{Payables turnover ratio}}$$

$$3 = \frac{12}{\text{Payables turnover ratio}}$$

$$\text{Payables turnover ratio} = \frac{12}{3} = 4 \text{ times}$$

$$\text{Payable turnover ratio} = \frac{\text{Credit purchases}}{\text{Average payables}}$$

$$4 = \frac{56{,}000}{\text{Average payables}}$$

$$\text{Average payables} = \frac{56{,}000}{4} = \text{Rs. } 14{,}000$$

Less: Bills payable given	1,000
Sundry creditors	13,000

Sum 20 : From the following information, you are required to prepare a Balance Sheet:

1. Current ratio - 1.75
2 Liquid ratio - 1.25
3. Stock turnover ratio (cost of sales/closing stock) - 9
4. Gross profit ratio - 25%

5. Debt collection period – 1½ months
6. Reserves and Surplus to Share capital - 0.2
7. Turnover to fixed assets - (based on cost of sales) - 1.2
8. Capital gearing ratio - 0-5
9. Fixed assets to net worth - 1.25
10. Sales for the year - Rs. 12,00,000

Solution:

(1) Cost of sales:

	Rs.
Sales	12,00,000
Less: Gross profit 25% on sales	3,00,000
Cost of sales	9,00,000

(2) Stock:

$$\text{Stock turnover ratio} = \frac{\text{Cost of sales}}{\text{Closing stock}} = 9$$

$$= \frac{9,00,000}{\text{Closing stock}} = 9$$

$$\text{Closing stock} = \frac{9,00,000}{9} = \text{Rs. } 1,00,000$$

(3) Current assets:

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} = 1.75 : 1$$

Current assets – Quick assets = Stock
1.75 – 1.25 = 0.50
If the stock is 0.50, current assets are 1.75
If the stock is Rs. 1,00,000, current assets are

$$= \frac{1,00,000 \times 1.75}{0.50} = \text{Rs. } 3,50,000$$

(4) Current liabilities:

If the current assets are 1.75, current liabilities are 1
If the current assets are Rs. 3,50,000, current liabilities

$$= \frac{3,50,000 \times 1}{1.75} = \text{Rs. } 2,00,000$$

(5) Quick assets (Debtors and Cash):

Quick assets = Current assets – Stock
= Rs. 3,50,000 – Rs. 1,00,000 = Rs. 2,50,000

(6) Debtors:

Debt collection period =

$$\frac{\text{Debtors + Bills receivable}}{\text{Credit sales}} \times \text{No. of working days}$$

There are no bills receivable. Hence,

$$\text{Debtors turnover ratio} = \frac{\text{Debtors}}{12,00,000} \times 12 = 1\frac{1}{2} \text{ months}$$

By cross multiplication,

$$\text{Debtors} = 12,00,000 \times \frac{3}{2} \times \frac{1}{12} = \text{Rs. } 1,50,000$$

(7) Cash.

Debtors and Cash	Rs. 2,50,000
Less: Debtors	Rs. 1,50,000
Cash	Rs. 1,00,000

(8) Fixed assets:

$$\text{Turnover to Fixed assets} = \frac{\text{Cost of sales}}{\text{Fixed assets}} = 1.2$$

$$= \frac{9,00,000}{\text{Fixed assets}} = 1.2$$

$$\text{Fixed assets} = \frac{9,00,000}{1.2} = \text{Rs. } 7,50,000$$

(9) Net Worth or Proprietory fund:

$$\text{Fixed assets to Net worth} = \frac{\text{Fixed assets}}{\text{Net worth}} = 1.25$$

$$= \frac{7,50,000}{\text{Net worth}} = 1.25$$

$$\text{Net worth} = \frac{7,50,000}{1.25} = \text{Rs. } 6,00,000$$

(10) Share capital:

Reserves and Surplus to Share capital

$$= \frac{\text{Reserves and Surplus}}{\text{Share capital}} = 0.2:1 \text{ (or) } 2:10$$

Proprietory fund = Share capital + Reserves and Surplus

12 = 10 + 2

If the Proprietory fund is 12, share capital is 10

If the Proprietory fund is Rs. 6,00,000, share capital is

$$= \frac{6,00,000}{12} \times 10 = \text{Rs. } 5,00,000$$

(11) Reserves and Surplus:

Proprietory fund	=	Rs. 6,00,000
Less: Share capital	=	Rs. 5,00,000
Reserves & Surplus		Rs. 1,00,000

(12) Long term liabilities:

$$\text{Capital gearing ratio} = \frac{\text{Fixed interest bearing security}}{\text{Equity Shareholders' funds}} = 0.5$$

$$= \frac{\text{Fixed interest bearing security}}{6,00,000} = 0.5$$

Fixed interest bearing security

$$= 6,00,000 \times \frac{5}{10} = \text{Rs. } 3,00,000$$

Balance Sheet

	Rs.		Rs.
Share capital	5,00,000	Fixed assets	7,50,000
Reserves and Surplus	1,00,000	Stock	1,00,000
Long-term loan	3,00,000	Debtors	1,50,000
Current liabilities	2,00,000	Cash	1,00,000
	11,00,000		11,00,000

UNIT - III

WORKING CAPITAL

Working capital, also known as net working capital (NWC), is the amount of money a company has available to operate after deducting its current liabilities from its current assets. Current assets are items like cash, accounts receivable/customers' unpaid bills, and inventories of raw materials and finished goods. Current liabilities are items such as accounts payable and debts.

Working capital is a commonly used measurement to gauge the short-term financial health and efficiency of an organization.

Working Capital (Current Assets - Current Liabilities) is crucial in Management Accounting for **short-term liquidity**, ensuring funds for daily ops (inventory, receivables, payables). Its requirement involves funding the **operating cycle gap** (paying suppliers before customers pay). A Statement of Working Capital Requirement (or Funds Flow Statement) projects funds needed for **permanent** (base level) and **fluctuating** (seasonal/growth) needs, detailing required investment in current assets like inventory and receivables, minus current financing (payables, short-term loans).

Working Capital: Management Accounting Perspective

- **Definition:** The excess of a company's current assets (cash, receivables, inventory) over its current liabilities (payables, short-term debt).
- **Purpose:** Provides liquidity for daily operations, covering the time lag between paying for inputs (raw materials) and receiving cash from sales (the operating cycle).
- **Key Components Managed:** Cash, Accounts Receivable (debtors), Inventory, Accounts Payable (creditors), and short-term financing.
- **Importance:** Prevents insolvency, funds growth, improves efficiency, and balances profitability with liquidity.

Types of Working Capital

- **Gross Working Capital:** Total investment in current assets (inventory + receivables + cash).
- **Net Working Capital:** Current Assets - Current Liabilities (the common measure).
- **Permanent Working Capital:** Minimum current assets needed at all times for basic operations.
- **Fluctuating/Temporary Working Capital:** Additional capital for seasonal peaks or business expansion.

FUNDS FLOW ANALYSIS

Meaning and purpose –

The purpose of this statement is to summaries for a given period the resources made available to finance the activities of the enterprise and the uses to which such resources have been put. It was defined by AS-3 (Prior to revision) as "a statement that summarizes for the period covered by it, the changes in financial position including the sources from which such funds were applied."

This statement is also known as:

i) Statement of sources and application of funds

ii) Where got where gone statement

Meaning of funds – The meaning of funds in flow statement is working capital, is the difference between current assets and current assets and current liabilities. The business transactions increasing working capital are known as sources of funds and the transactions decreasing the working capital are known as applicable or uses of funds.

Importance, significance and uses of funds flow statement –

I) For Management –

1) Act as a future guide
2) Help I the proper allocation of resources
3) Effective use of working capital
4) Formation of dividend policy
5) Demand of funds flow statement by bank
6) Helpful in financial analysis
7) Helpful in comparative study

II) Importance for shareholders

III) Importance for creditors

IV) Importance for researchers

Limitations of funds flow statement

Obviously funds flow statement is having number of advantages but along with these it has some limitations also, which are as follows –

1) Funds flow statement cannot become a substitute of balance sheet, because it provides only additional information about the firm.
2) This statement can't show continuous changes in business.
3) Changes in cash is more important than change in working capital and this statement does not provide any information about cash.
4) Funds flow statement does not include fixed assets and liabilities in it. Whereas balance sheet provides more important information about fixed assets and liabilities.

Schedule of working capital changes

Particulars	At the end of		Working capital changes	
	Previous year	Current year	Increase	Decrease
(A) Current Assets:				
Cash in hand	……..	……..		
Cash at Bank	……..	……..		
Bills receivable	……..	……..		
Debtors	……..	……..		
Total of (A)	……..	……..		
(B) Current Liabilities:				
Creditors	……..	……..		

Bill Payable	…….	…….		
Outstanding expenses	…….	…….		
Total of (B)	…….	…….		
(C) Working Capital: [*Total of A – Total of B]*	…….	…….		
Increase or decrease in working capital.			…….	…….

Funds Flow Statement

Sources	Amount	Application	Amount
Sources of funds -		***Application of uses of funds -***	
1) Issues of shares/debenture	…….	1) Redemption of preference shares/debentures	…….
2) Long term loans raised	…….	2) Repayment of long term loan	…….
3) Sale of fixed assets	…….	3) Purchase of fixed assets	…….
4) Income on investment i.e. interest divided, rent received etc.	…….	4) Payment of proposed dividend for previous year	…….
5) Profit or fund from operations	…….	5) Loss from operations	…….
6) Decrease in working capital	…….	6) Increase in working capital	…….
Total	**…….**	**Total**	**…….**

Fixed Assets Account *(at cost price)*

To balance b/d *(cost price)*	…….	To Bank a/c *(Sale of fixed assets)*	
To Share Capital/Debentures A/c *(Issue for purchase of fixed assets)*	…….	To Provision for depreciation A/c *(Accumulated dep. On assets sold)*	
To P&L A/c *(Profit on sale of fixed assets)*	…….	By P&L A/c *(Loss on sale of assets)*	
To Bank A/c *(Purchase of fixed assets)*	…….	By Balance c/d *(Cost price)*	
Total	**…….**	**Total**	**…….**

Provision for Depreciation A/c

Particular	Amount	Particular	Amount
To Fixed Assets A/c *(Accumulated dep. Of assets sold or written off)*	…….	By Balance b/d	…….
To Balance c/d	…….	By P&L A/c *(Current year deprecations)*	…….
Total	**…….**	**Total**	**…….**

Calculations of profit (Fund) or loss from operation

Particular		Amount
Net Profit after tax		……..
Add:	**Non-cash item**	
	Depreciation	……..
	Goodwill written off	……..
	Preliminary expenses written off	……..
	Advertisement expenses written off	……..
	Underwriting commission written off	……..
	Development expenses written off	……..
Add:	**Non-operating losses & expenses**	
	Discount on issue of shares & debentures	……..
	Loss on sale of fixed assets	……..
	Loss on sale of long term investments	……..
	Premium on redemption of preference shares & debentures	……..
Less:	**Non-operation income**	
	Profit on sale of fixed assets	……..
	Profit on long-term investment	……..
	Discount on redemption of preference shares and debentures	……..
	Interest and divided received	……..
	Profit or Loss from operation	**……..**

CASH FLOW ANALYSIS
(As Per Accounting Standard-3)

Difference between funds flow statement and cash flow statement –

S.No.	Basis of Difference	Funds Flow Statement	Cash Flow Statement
1	Concept and scope	It is based on the broad concept of fund, i.e. on working capital.	It is based on the narrow concept of fund i.e. cash.
2	Basis of usefulness	This statement is useful in planning of medium term and long term sources of finance.	This statement is useful in planning of short-term funds i.e. cash and its equivalents.
3	Basis of accounting	In this statement accounting is done on accrual basis, thus no adjustment is required.	In this statement accounting is done on cash basis, thus adjustment about outstanding and prepaid expenses is required.
4	Separate schedule	Schedule of changes in working capital is prepared along with this statement.	No schedule is prepared along with this statement.
5	Method of preparing	This statements shows sources and applications of funds. Net difference between sources and application of funds represents increase or decrease in working capital.	This statement is prepared by classify cash inflows and outflows in operating, investing and financing activities. The net difference represents increase or decrease in cash and cash equivalents.
6	Amendment	This statement does not show strong fund (working capital) and strength of cash can't be assessed.	Cash is a part of working capital. Thus improvement in cash position shown by the cash flow statement in considered s an improvement in working capital.

Use and significance of cash flow statement –

1) Helpful in the evaluation of present cash position of the firm
2) Helpful to the management
3) Knowledge about liability redemption capacity
4) Knowledge about important facts
5) Helpful in formulation of policies
6) Helpful in the evaluation of financial policies and present cash position
7) Useful to outsiders
8) Find variation and performance
9) As per AS-3
10) Full information

Limitations of cash flow statement

1) Difficult to define cash
2) Liquidity cannot be assessed
3) No clear picture
4) Scope becomes narrow
5) Not equivalent to income statement

FORMAT OF CASH FLOW STATEMENT
(AS-3 Direct Method)

		Rs.	Rs.
A.	***Cash flows operating activities***		
	Cash receipts from customers		
	Cash paid to suppliers and employees		
	Taxes paid		
	Other receipts		
	Net cash from operating activities (1)		
B.	***Cash flows from investing activities***		
	Purchase of fixed assets/investments		
	Sale of fixed assets/investments		
	Interest received		
	Dividend received		
	Net cash from investing activities (2)		
C.	***Cash flows from financing activities***		
	Issue of shares/debentures		
	Long-term borrowings taken		
	Redemption of Pref. shares/debentures		
	Repayment of long term loans		
	Interest paid		
	Dividend paid		
	Repayment of bank overdraft		
	Drawings by proprietors / partners		
	Net cash from financing activities (3)		
	Net Increase in cash and cash equivalents (A+B+C)		
	Cash and cash equivalents at the beginning		
	Cash and cash equivalents at the end		
Cash flows shown in bracket are treated as minus figures while making total.			

CASH FLOW STATEMENT

(Indirect Method)

A.	***Cash flows operating activities***	**Rs.**	**Rs.**
	Closing Balance of profit & loss account		
Less:	**Opening balance of profit & loss account**		
	Profit after appropriation		
Add:	**Items of appropriation:**		
	1) Interim dividend		
	2) Final dividend/proposed dividend (current year)		
	3) Transfer to general reserve		
	4) Transfer to other reserve		
	5) Provision for taxation		
	6) Issue of bonus share		
Add:	**Non-cash items :**		
	1) Depreciation		
	2) Goodwill written off		
	3) Preliminary expenses written off		
	4) Discount on issue of shares/debenture written of		
	5) Other fictitious assets written off		
	6) Provision for contingencies		
Add:	**Non-operating expenses/losses**		
	1) Loss on sale of fixed assets		
	2) Premium on redemption of Pref. share and debenture		
	3) Interest paid		
	4) Foreign exchange loss		
	5) Loss on sale of investment		
Less:	**Non-operating income :**		
	1) Profit on sale of fixed assets		
	2) Discount on redemption of preference shares/debentures		
	3) Interest received		
	4) Dividend received		
	5) Profit on sale of investment		
Add:	Decrease in current assets (except cash and bank)		
	Increase in current liabilities (except bank overdraft)		
Less:	Increase in current assets (except cash and bank)		
	Decrease in current liabilities (except bank overdraft)		
Less:	Payment of income-tax		
	Cash from operating activities	→	
B.	**Cash flows from investing activities**		
	Sale of fixed assets / investment		
Less:	Purchases of fixed assets/investment		
Add:	Interest received		
	Dividend received		
	Non-operating surplus		
	Cash flows from investment activities	→	
C.	**Cash flows from financing activities:**		
	Issue of shares/debentures		
Add:	Long term borrowing		
Less:	Redemption of preference shares/debentures		
	Repayment of long term loan		
	Interest paid		
	Divided paid		

	Repayment of bank overdraft		
	Drawings by proprietors / partners		
	Cash flows from financing activities	→	
	Net increase in cash and cash equivalents (A+B+C)		
Add:	Opening balance of cash & cash equivalents	→	
	Closing balance of cash & cash equivalents	→	

Note: Cash & cash equivalents = Cash + Bank + Short term investments

Sum 1: From the following estimates, calculate the average amount of working capital required.

		Per annum Rs.
1.	Average amount locked up in stock:	
	Stock of finished goods' and work-in-progress	10,000
	Stock of stores, material etc.	8,000
2.	Average credit given:	
	Local Sales 2 weeks' **credit**	1,04,000
	Outside the State 6 weeks' credit	3,12,000
3.	Time available for payments:	
	For purchases 4 weeks	78,000
	For wages 2 weeks	2,60,000
	Add 10% to allow for contingencies.	

Solution:

Statement of Working Capital Requirements

	Rs.	Rs.
Current Assets:		
Stock of finished goods and W.I.P.	10,000	
Stock of stores, material etc.	8,000	
Debtors - Local Sales (2 weeks) $1,04,000 \times \frac{2}{52}$	4,000	
- Outside the State (6 weeks) $3,12,000 \times \frac{6}{52}$	36,000	
		58,000
Less: Current Liabilities		
Creditors (4 weeks) $78,000 \times \frac{4}{52}$	6,000	
Outstanding wages (2 weeks) $2.60,000 \times \frac{2}{52}$	10,000	
		16,000
		42,000
Add: 10% for contigencies		4,200
Average working capital required		46,200

Sum 2: Peerless Ltd. is engaged in customer retailing. You are required to forecast their working capital requirements from the following information.

Projected annual sales	Rs. 6,50,000
% of N.P. to cost of sales	25%
Average credit allowed to debtors	10 weeks
Average credit allowed by creditors	4 weeks
Average stock carrying (in terms of sales requirement)	8 weeks

Add 20% to allow for contingencies.

	Per annum Rs.
Projected Sales	6,50,000
Less: Net profit 25% on cost, i.e., 20% on sales	1,30,000
Cost of sales	5,20,000

Statement of Working Capital Requirements

	Rs.
Current Assets:	
Stock (8 weeks) 5,20,000 × 8/52	80,000
Debtors (10 weeks) 5,20,000 × 10/52	1,00,000
	1,80,000
Less: Current Liability:	
Creditors (4 weeks) 5,20,000 × 4/52	40,000
Net working capital	1,40,000
Add: 20% for contingencies	28,000
Average working capital required	1,68,000

Note : Stock, debtors and creditors are estimated on the basis of cost of sales.

Sum 3: Anand wishes to Commence a now trading business and gives the following information:

1. Total estimated sales p.a. Rs. 6,00,000
2. His fixed expenses are estimated at Rs 1,100 per month and variable expenses equal to 5% of his turnover.
3. He expects to fix a sale price for each product which will be 25% in excess of his cost of purchase.
4. He expects to turnover his stock 4 times in a year.
5. The sales and purchases will be evently spread throughout the year. All sales will be for cash but he expects one month's credit for purchases.

Calculate (a) his estimated profit for the year. (b) his average working capital requirements.

Solution:

(a) Estimated Profit of Anand for the year

		Rs.
Sales		6,00,000
Less: Gross profit (25% on cost, i.e., 20% on sales)		1,20,000
Purchases/Cost of sales		4,80,000
Gross Profit		1,20,000
Less: Fixed expenses Rs. 1000 p.m.	12,000	
Variable expenses 5% of turnover	30,000	
		42,000
Net Profit		78,000

$$\text{Stock Turnover} = \frac{\text{Cost of Sales}}{\text{Average stock}} = 4$$

$$= \frac{4,80,000}{\text{Average stock}} = 4$$

Average stock = 4,80,000 ÷ 4 = Rs. 1,20,000

(b) Statement of Working Capital Requirements

	Rs.
Current Assets:	
Average stock	1,20,000
Cash for fixed expenses p.m.	1,000
Cash for variable expenses p.m. (5% of monthly sales of Rs. 50,000)	2,500
	1,23,500
Less: Current Liability:	
Creditors (1 month) $4,80,000 \times \frac{1}{12}$	40,000
Average working capital required	83,500

Sum 4*:* Godrej Company sells goods in the home market and earns a gross profit of 20%. on sales Its annual figures are as follows

Sales	3,00,000	Materials used	1,08,000
Wages	96,000	Manufacturing expenses	1,20,000
Administrative expenses	30,000	Depreciation	12,000
Selling expenses	18,000		

Income tax payable in two instalments of which first instalment falls in the next year 30,000

Additional information:

(a) Credit given by suppliers - 2 months

(b) Credit allowed to customers - 1 month

(c) Lag in payment of wages - 1/2 month

(d) Lag in payment of administrative expenses - 1 month

(e) Selling expenses are paid quarterly in advance

(f) Raw materials and finished goods are in stock for 1 month

(g) Cash balance estimated to be maintained at Rs. 30,000

You are required to prepare a statement of working capital requirements.

Solution:

Statement of Working Capital Requirements

	Rs.
Current Assets:	
Stock of raw materials (1 month) $1,08,000 \times \frac{1}{12}$	9,000
Stock of finished goods (1 month) $2,04,000 \times \frac{1}{12}$	20,000
Prepaid selling expenses (3 months) $18,000 \times \frac{3}{12}$	4,500
Debtors (1 month) $2,40,000 \times \frac{1}{12}$	20,000
Cash balance to be maintained	30,000
Total Current Assets (A)	83,500

Solution:

Output per annum = 30,000 units
Output per month = 30,000 ÷ 12
= 2500 units

	Rs.
Raw materials p.m. Rs. 20 × 2,500	= 50,000
Labour p.m. Rs. 5 × 2500	= 12,500
Overheads p.m. Rs. 15 × 2500	= 37,500
	1,00,000

Working capital required (A) – (B) 51,500

Working:

(a) Sales Rs. 3,00,000
Less: Gross profit (20% on sales) 60,000
Cost of sales 2,40,000

(b) Depreciation is a non-cash item. Hence, it will not affect the working capital statement.

(c) Income tax payable is related to the next financial year. So, it will not appear in the working capital statement of the current year.

Sum 5: The Board of directors of Arvind mills Ltd request you to prepare a statement showing the working capital requirements for a level of activity of 30,000 units of output for the year. The cost structure for the Company's product for the above mentioned activity level is given below:

	Cost per unit Rs.
Raw materials	20
Direct labour	5
Overheads	15
Total	40
Profit	10
Selling price	50

(a) Past experience indicates that raw materials are held in stock, on an average for 2 months.
(b) Work-in-progress (100% complete in regard to materials and 50% for labour and overheads) will be half a month's production,
(c) Finished goods are in stock on an average for 1 month.
(d) Credit allowed by suppliers : 1 month
(e) Credit allowed to debtors : 2 months
(f) A minimum cash balance of Rs. 25,000 is expected to be maintained
Prepare a statement of working capital requirements.

Solution:

Output per annum = 30,000 units
Output per month = 30,000 ÷ 12
= 2500 units

	Rs.
Raw materials p.m. Rs. 20 × 2,500	= 50,000
Labour p.m. Rs. 5 × 2500	= 12,500
Overheads p.m. Rs. 15 × 2500	= 37,500
	1,00,000

Statement of Working Capital Requirements

		Rs.
Current Assets:		
Stock of raw materials (2 months) 50,000 × 2		1,00,000
Work-in-progress (½ month)		
Raw materials = $50,000 \times \frac{1}{2}$	25,000	
Labour = $12,500 \times \frac{1}{2} \times \frac{50}{100}$	3,125	
Overheads = $37,500 \times \frac{1}{2} \times \frac{50}{100}$	9,375	
		37,500
Stock of finished goods (1 month) 1,00,000 × 1		1,00,000
Debtors (2 months) 1,00,000 × 2		2,00,000
Cash balance required		25,000
		4,62,500
Less: Current Liability:		
Creditors (1 month) 50,000 × 1		50,000
Working capital required		4,12,500

Sum 6: From the following prepare a statement showing changes in working capital during 1999.
Balance sheets of Sree Ganesh ltd., as on 31st December

Liabilities	1998	1999	Assets	1998	1999
Share capital	6, 00,000	6, 00,000	Fixed assets	10, 00,000	11, 20,000
Reserves	50,000	1, 80,000	Less:Dep	3,70,000	4,60,000
Profit &Loss Account	40,000	65,000		6, 30,000	6, 60,000
Debentures	3, 00,000	2, 50,000			
Creditors for Goods	1, 70,000	1, 60,000	Stock	2, 40,000	3, 70,000
			Bad debts	2,50,000	2,30,000
Provision for Income tax	60,000	80,000	Cash in hand and at Bank	80,000	60,000
			Preliminary Expenses	20,000	15,000
	12, 20,000	13, 35,000		12, 20,000	13, 35,000

Solution **Schedule of Changes in Working Capital**

Particulars	1998 Rs.	1999 Rs.	Increase Rs.	Decrease Rs.
Current assets:				
Stock	2,40,000	3,70,000	1,30,000	
Book debts	2,50,000	2,30,000	–	20,000
Cash in hand & Bank	80,000	60,000	–	20,000
	5,70,000	6,60,000		
Less: Current liabilities:				
Creditors for goods	1,70,000	1,60,000	10,000	–
Provision for tax	60,000	80,000		20,000
	2,30,000	2,40,000	1,40,000	60,000
Working capital	3,40,000	4,20,000		
Increase in working capital	80,000			80,000
	4,20,000	4,20,000	1,40,000	1,40,000

Sum 7: From the following summarized balance sheets of Sri Krishna Ltds., prepare a schedule of changes in working capital and a statement of source and application of funds.

Liabilities	1998	1999	Assets	1998	1999
Share capital	4,00,000	5,75,000	Plant	75,000	1,00,000
Creditors	1,06,000	70,000	Stock	1,21,000	1,36,000
Profit &Loss Account	14,000	31,000	Debtors	1,81,000	1,70,000
			Cash	1,43,000	2,70,000
	5,20,000	6,76,000		5,20,000	6,76,000

Solution:

Schedule of Changes in Working Capital

	1998 Rs.	1999 Rs.	Increase Rs.	Decrease Rs.
Current assets:				
Stock	1,21,000	1,36,000	15,000	
Debtors	1,81,000	1,70,000		11,000
Cash	1,43,000	2,70,000	1,27,000	
	4 45,000	5,76,000		
Less:				
Current liability :				
Creditors	1,06,000	70,000	36,000	
Working capital	3,39,000	5,06,000	1,78,000	11,000
Increase in working capital	1,67,000			1,67,000
	5,06,000	5,06,000	1,78,000	1,78,000

Sum 8: Calculate funds from operations from the following profit and loss account.

Particulars	Rs.	Particulars	Rs.
To Expenses paid and outstanding	3,00,000	By Gross Profit	4,50,000
To Depreciation	70,000	By Gain on sale of land	60,000
To loss on sale of Machine	4,000		
To Discount	200		
To Goodwill	20,000		
To profit	1,15,800		
	5,10,000		5,10,000

Solution: Calculation of Funds From Operations

Adjusted Profit and Loss Account

	Rs.		Rs.
To Depreciation	70,000	By balance b/d.	—
To Loss on sale of machine	4,000	By Gain on sale of land	60,000
To Discount	200	By Funds from operations (?)	1,50,000
To Goodwill	20,000		
To balance c/d.	1,15,800		
	2,10,000		2,10,000

Alternatively, Funds from operations can be calculated as shown below:

Calculation of Funds from Operations:

	Rs.
Closing balance of Profit and Loss a/c or Net profit	1,15,800
Add: Non-fund charges and non-operating expenses:	
Depreciation	70,000
Loss on sale of machine	4,000
Discount	200
Goodwill	20,000
	2,10,000
Less: Non-fund and non-operating income:	
Gain on sale of land	60,000
Opening balance of Profit and Loss a/c.	—
Funds from Operations	1,50,000

Sum 9: From the following particulars, calculate funds from operations: Salaries Rs. 40,000; Depreciation Rs. 20,000;interest on Investments Rs.10,000; Profit on sale of fixed assets Rs.5,000; Provision for tax Rs.30,000; Loss on sales of machinery Rs.5,000. Interim dividend paid Rs.20,000; Proposed dividend Rs.30,000;Administrative expenses Rs.25,000;Goodwill written off Rs.10,000;Preliminary expenses written off Rs.5,000,Opening balance of profit and loss account Rs.70,000;Closing balance of profit and loss a/c Rs. 1,20,000.

Solution: Calculation of Funds From Operations

Adjusted Profit and Loss Account

	Rs.		Rs.
		By balance b/d.	70,000
Non-fund and non-operating expenses:		**Non-fund and non-operating income:**	
To Depreciation	20,000	By Interest on investments	10,000
To Provision for tax	30,000	By Profit on sale of fixed assets	5,000
To Loss on sale of machinery	5,000	By Funds from operations (?)	1,55,000
To Interim dividend	20,000		
To Proposed dividend	30,000		
To Goodwill written off	10,000		
To Preliminary expenses	5,000		
To balance c/d	1,20,000		
	2,40,000		2,40,000

Sum 10: From the following details, calculate funds from operation.

Particulars	Rs.		Rs.
Salaries	5,000	Discount on issue of debentures	2,000
Rent	3,000	Provision for bad debts	1,000
Refund of tax	3,000	Transfer to general reserve	1,000
Profit on sale of building	5,000	Preliminary expenses written off	3,000
Depreciation on plant	5,000	Goodwill written off	2,000
Provision for tax	4,000	Proposed divided	6,000
Loss on sale of plant	2,000	Dividend received	5,000
Closing balance of P & L a/c.	60,000		
Opening balance of P & L a/c.	25,000		

Solution:

Calculation of Funds From Operations:

		Rs.
Closing balance of profit and loss a/c.		60,000
Less: Opening balance of profit and loss a/c.		25,000
		35,000
Add: Non-fund charges & non-operating expenses:		
Depreciation on plant		5,000
Provision for tax		4,000
Loss on sale of plant		2,000
Discount on issue of debentures		2,000
Provision for bad debts		1,000
Transfer to general reserve		1,000
Preliminary expenses written off		3,000
Goodwill written off		2,000
Proposed dividend		6,000
	(A)	61,000
Less: Non-fund & Non-operating incomes:		
Profit on sale of building		5,000
Refund of tax		3,000
Dividend received		5,000
	(B)	13,000
Funds from operations (A) – (B)		48,000

Sum 11: From the following two balance sheets as at march 31,1999 and 2000, you are required to prepare a funds flow statement.

Particulars	31st March 1999	31st March 2000		31st March 1999	31st March 2000
Liabilities:			Assets:		
Share capital	40,000	45,000	Cash	30,000	47,000
Creditors	10,000	23,000	Debtors	1,20,000	1,15,000
Profit &Loss a/c	2,30,000	2,50,000	Stock-in-trade	80,000	90,000
			Land	50,000	66,000
	2,80,000	3,18,000		2,80,000	3,18,000

Solution:

Schedule of Changes in Working Capital

Particulars	31.3.1999 Rs.	31.3.2000 Rs.	Increase Rs.	Decrease Rs.
Current assets:				
Cash	30,000	47,000	17,000	—
Debtors	1,20,000	1,15,000		5,000
Stock-in-trade	80,000	90,000	10,000	—
	2,30,000	2,52,000		
Less: Current liability:				
Trade creditors	10,000	23,000	—	13,000
Working capital	2,20,000	2,29,000	27,000	18,000
Increase in working capital	9,000			9,000
	2,29,000	2,29,000	27,000	27,000

Funds Flow Statement for the year ended 31st March, 2000.

Sources	Rs.	Application	Rs.
Issue of shares	5,000	Purchase of land	16,000
Funds from operation (1)	20,000	Increase in working capital	9,000
	25,000		25,000

Working:

(1) Adjusted Profit and Loss Account

	Rs.		Rs.
		By balance b/d	2,30,000
		By Funds from	
To balance c/d	2,50,000	operations (?)	20,000
	2,50,000		2,50,000

Sum 12 : From the following balance sheets of Mr.Sridhar prepare a funds flow statement.

Particulars	**30th June 1999**	**30th June 2000**
Cash	5,000	2,300
Debtors	17,500	19,200
Stock	12,500	11,000
Land	10,000	15,000
Building	25,000	27,500
Machinery	40,000	43,000
	1,10,000	1,18,000
Creditors	18,000	20,500
Bank loan	15,000	19,500
Capital	77,000	78,000
	1,10,000	1,18,000

Drawings of Mr.Sridar during the year was Rs.20,000. Depreciation charges on machinery was Rs.4000.

Solution:

Schedule of Changes in Working Capital

Particulars	**30th June 1999**	**30th June 2000**	**Increase**	**Decrease**
	Rs.	Rs.	Rs.	Rs.
Current assets :				
Cash	5,000	2,300		2,700
Debtors	17,500	19,200	1,700	
Stock	12,500	11,000		1,500
	35,000	32,500		
Less: Current liabilities:				
Creditors	18,000	20,500		2,500
Working capital	17,000	12,000	1,700	6,700
Decrease in working capital		5,000	5,000	
	17,000	17,000	6,700	6,700

Funds Flow Statement

Sources	Rs.	Application	Rs.
Bank loan	4,500	Purchase of land	5,000
Funds from operations (3)	25,000	Purchase of building	2,500
Decrease in working capital	5,000	Purchase of machinery (1)	7,000
		Drawings	20,000
	34,500		34,500

Working:

(1) Machinery Account

	Rs.		Rs.
To balance b/d	40,000	By Adjusted P & L a/c (depreciation)	4,000
To Cash (Purchase) (?)	7,000	By balance c/d	43,000
	47,000		47,000

(2) Capital Account

	Rs.		Rs.
To Drawings	20,000	By balance b/d	77,000
To balance c/d	78,000	By Adjusted P & L a/c (?) (net profit)	21,000
	98,000		98,000

(3) Adjusted Profit and Loss Account

	Rs.		Rs.
To Machinery	4,000	By Funds from operations (?)	25,000
To Net profit (2)	21,000		
	25,000		25,000

Sum 13: From the following balance sheet of Ganesh Company Ltd prepare a funds flow statement for the year ended 30th June 2000.

	Balance Sheet		**as on 30th June**		
Liabilities	1999 Rs.	2000 Rs.	Assets	1999 Rs.	2000 Rs.
Share capital	2,00,000	2,50,000	Goodwill	70,000	50,000
Debentures	50,000	1,50,000	Machinery	3,10,000	4,40,000
General reserve	70,000	1,20,000	Investments	30,000	80,000
Profit and Loss a/c.	50,000	60,000	Discount on issue of debentures	5,000	—
Depreciation	90,000	1,30,000			
Creditors	75,000	1,10,000	Bank	20,000	30,000
Bank overdraft	10,000	15,000	Debtors	70,000	1,80,000
			Stock	40,000	55,000
	5,45,000	8,35,000		5,45,000	8,35,000

During the year investments costing Rs. 30,000 were sold for Rs. 27,000. A new machine was bought for Rs. 40,000 and the payment was made in fully paid shares.

Solution:

Schedule of Changes in Working Capital

Particulars	30th June 1999	30th June 2000	Increase	Decrease
	Rs.	Rs.	Rs.	Rs.
Current assets:				
Bank	20,000	30,000	10,000	—
Debtors	70,000	1,80,000	1,10,000	—
Stock	40,000	55,000	15,000	—
	1,30,000	2,65,000		
Less:				
Current liabilities:				
Creditors	75,000	1,10,000	—	35,000
Bank overdraft	10,000	15,000	—	5,000
	85,000	1,25,000		
Working capital	45,000	1,40,000	1,35,000	40,000
Increase in working capital	95,000			95,000
	1,40,000	1,40,000	1,35,000	1,35,000

Funds Flow Statement
for the year ended 30th June 2000

Sources	Rs.	Application	Rs.
Issue of shares for cash	10,000	Purchase of investment	80,000
Issue of debentures	1,00,000	Purchase of machinery	90,000
Sale of investment	27,000	Increase in working capital	95,000
Funds from operations	1,28,000		
	2,65,000		2,65,000

Working:

Machinery Account (at cost)

	Rs.		Rs.
To balance b/d.	3,10,000		
To Share capital* (Purchase by issue of shares)	40,000		
To Bank	90,000	By balance c/d.	4,40,000
	4,40,000		4,40,000

Provision for Depreciation on Machinery

	Rs.		Rs.
		By balance b/d.	90,000
		By Adjusted Profit & Loss a/c. (?)	40,000
To balance c/d.	1,30,000		
	1,30,000		1,30,000

Investment Account

	Rs.		Rs.
To balance b/d.	30,000	By Bank (sale)	27,000
To Bank (?) (purchase)	80,000	By Adjusted Profit & Loss a/c. (loss on sale)	3,000
		By balance c/d.	80,000
	1,10,000		1,10,000

Discount on issue of Debentures

	Rs.		Rs.
To balance b/d.	5,000	By Adjusted Profit & Loss a/c. (written off)	5,000
	5,000		5,000

Goodwill Account

	Rs.		Rs.
To balance b/d.	70,000	By Adjusted Profit & Loss a/c. (?)	20,000
		By balance c/d.	50,000
	70,000		70,000

Share Capital Account

	Rs.		Rs.
		By balance b/d.	2,00,000
		By Machinery* (Issue of shares for machinery)	40,000
To balance c/d.	2,50,000	By Bank	10,000
	2,50,000		2,50,000

General Reserve

	Rs.		Rs.
		By balance b/d.	70,000
To balance c/d.	1,20,000	By Adjusted Profit & Loss a/c. (?)	50,000
	1,20,000		1,20,000

Adjusted Profit and Loss Account

	Rs.		Rs.
To Provision for depreciation on machinery	40,000	By balance b/d.	50,000
To Investment (loss)	3,000	By Funds from operations (?)	1,28,000
To Discount on issue of debentures	5,000		
To Goodwill (written off)	20,000		
To General reserve	50,000		
To balance c/d.	60,000		
	1,78,000		1,78,000

Note : * Issue of shares for purchase of machinery is a transaction concerned with non-current items only. The transaction does not affect working capital. Hence, there is no source or application of funds.

Sum 14 : Balance Sheets of M/s. Black and White as on 1.1.99 and 31.12.1999 were as follows:

Liabilities	1.1.99	31.12.99	Assets	1.1.99	31.12.99
Creditors	40,000	44,000	Cash	10,000	7,000
Mrs. White's loan	25,000	—	Debtors	30,000	50,000
Loan from P.N. Bank	40,000	50,000	Stock	35,000	25,000
Capital	1,25,000	1,53,000	Machinery	80,000	55,000
			Land	40,000	50,000
			Building	35,000	60,000
2,30,000		2,47,000		2,30,000	2,47,000

During the year a machine costing Rs. 10,000 (accumulated depreciation Rs. 3,000) was sold for Rs. 5,000. The provision for depreciation against machinery as on 1.1.1999 was Rs. 25,000 and on 31.12.1999 *Rs.* 40,000. Net Profit for the year 1999 amounted to Rs 45,000. You are required to prepare funds flow statement.

Solution:

Schedule of Changes in Working Capital

Particulars	1.1.1999	31.12.1999	Increase	Decrease
	Rs.	Rs.	Rs.	Rs.
Current assets:				
Cash	10,000	7,000		3,000
Debtors	30,000	50,000	20,000	—
Stock	35,000	25,000		10,000
	75,000	82,000		
Less: Current liability:				
Creditors	40,000	44,000	—	4,000
Working capital	35,000	38,000	20,000	17,000
Increase in working capital	3,000			3,000
	38,000	38,000	20,000	20,000

Funds Flow Statement

Sources	Rs.	Application	Rs.
Sale of machinery	5,000	Purchase of land	10,000
Loan from P.N. Bank	10,000	Purchase of building	25,000
Funds from operations	65,000	Drawings	17,000
		Repayment of Mrs. White's Loan	25,000
		Increase in working capital	3,000
	80,000		80,000

Working:

	1-1-99 Rs.	31-12-99 Rs.
Written Down Value of Machinery	80,000	55,000
Add: Provision for Depreciation	25,000	40,000
Cost of Machinery	1,05,000	95,000

Machinery Account (at cost)

	Rs.		Rs.
To balance b/d.	1,05,000	By Cash (sale)	5,000
		By Provision for depreciation	3,000
		By Adjusted Profit & Loss account (loss on sale)	2,000
		By balance c/d.	95,000
	1,05,000		1,05,000

Provision for Depreciation on Machinery

	Rs.		Rs.
To Machinery (depreciation on machinery sold)	3,000	By balance b/d.	25,000
		By Adjusted Profit & Loss a/c (?)	18,000
To balance c/d.	40,000		
	43,000		43,000

Capital Account

	Rs.		Rs.
To Drawings (?)	17,000	By balance b/d.	1,25,000
To balance c/d.	1,53,000	By Net Profit	45,000
	1,70,000		1,70,000

Adjusted Profit & Loss Account

	Rs.		Rs.
To Machinery (loss on sale)	2,000	By balance b/d.	—
To Provision for depreciation	18,000	By Funds from operations (?)	65,000
To balance c/d. (net Profit)	45,000		
	65,000		65,000

Sum 15: From the following particular, calculate (a) Net profit and (b) Cash from operations :

Gross Profit Rs.30,000; Expenses paid Rs.10,000; Interest received Rs.2000;The expenses paid include Rs. 1000 paid for the next year. Interest Rs.500 has become due but has not yet been received.

Solution:

(a) Calculation of Net profit

Profit and Loss Account

	Rs.			Rs.
To Expenses	10,000	By Gross profit		30,000
Less pre-paid	1,000 9,000	By Interest received	2,000	
		Add Accrued interest	500	2,500
To Net profit	23,500			
	32,500			32,500

(b) Cash From Operations

	Rs.
Net profit	23,500
Add: Prepaid expenses	1,000
	24,500
Less: Interest received and outstanding (non-operating)	2,500
Cash from operations	22,000

Sum 16: After taking into account the under mentioned items, Jain ltd made a Net profit of Rs. 1,00,000 for the year ended 31st dec.1999

Loss on sale of machinery	10,000
Depreciation on building	4,000
Depreciation on machinery	5,000
Preliminary expenses written off	5,000
Provision for taxation	10,000
Goodwill written off	4,000
Gain on sale of building	8,000

Find out Cash From Operations.

Solution:

Calculation of Cash From Operations:

Net profit earned during the year	1,00,000
Add Non-cash and non-operating expenses:	
Loss on sale of machinery	10,000
Depreciation on building	4,000
Depreciation on machinery	5,000
Preliminary expenses written off	5,000
Provision for tax	10,000
Goodwill written off	5,000
	1,39,000
Less Non-cash and non-operating income:	
Gain on sale of buildings	8,000
Cash trading profit	1,31,000
Add: Decrease in Current assets & Increase in Current liabilities	–
Less: Increase in Current assets & Decrease in Current liabilities	–
Cash from operations	1,31,000

Sum 17: From the following profit & loss Account, you are required to compute cash from operations.

Particulars	Rs.	Particulars	Rs.
To Salaries	5,000		
To rent	1,000	By Gross Profit	25,000
To Depreciation	2,000	By profit on sale of land	5,000
To loss on sale of plant	1,000	By income tax refund	3,000
To proposed dividend	5,000		
To Goodwill written off	4,000		
To provision for taxation	5,000		
To Net profit	10,000		
	33,000		33,000

Solution:

Calculation of Cash From Operations

	Rs	Rs.
Net Profit earned during the year		10,000
Add: Non-cash and non-operating expenses:		
Depreciation	2,000	
Loss on sale of plant	1,000	
Goodwill written off	4,000	
Proposed dividend	5,000	
Provision for taxation	5,000	
	------	17,000
		27,000
Less: Non-cash and non-operating income:		
Profit on sale of land	5,000	
Income tax refund	3,000	
	------	8,000
Cash from operations		19,000

Sum 18: Calculate cash from operations: Net profit for 1998 Rs.25,000;Depreciation Rs,. 1,000; prepaid expenses 1-1-98 Rs. 2,000 Prepaid expenses 31.12.98 Rs. 1,000; Outstanding salary 31-12-98 Rs.500.

Solution:

Calculation of Cash From Operations

	Rs.	Rs.
Net profit	25,000	
Add: Depreciation (non-cash item)	1,000	

Cash trading profit		26,000
Add: Decrease in Current assets & Increase in Current liabilities:		
Decrease in prepaid expenses	1,000	
Increase in outstanding salary	500	
	------	1500
		27,500
Less: Increase in Current assets & Decrease in Current liabilities:		–
Cash from operations		27,500

Sum 19: From the following balance sheets of A ltd., prepare a cash flow statement.

Liabilities	30th June 1999	30th June 2000	Assets	30th June 1999	30th June 2000
Share capital	8,000	8,500	Land	5,000	5,000
Retained earnings	1,450	2,450	Plant	2,400	3,400
Creditors	900	500	Debtors	1,650	1,950
Mortage loan	-	500	Stock	900	700
			Cash	400	900
	10,350	11,950		10,350	11,950

Solution:

Cash flow statement

Inflow	Rs.	Outflow	Rs.
Opening balance of cash	400		
Issue of shares	500	Purchase of plant	1,000
Mortgage loan	500	Increase in debtors	300
Cash trading profit	1000	Decrease in creditors	400
Decrease in stock	200	Closing balance of cash	900
	2,600		2,600

Note : Increase in retained earnings represents cash trading profit.

Sum 20: Prepare a cash flow statement for the year ending 31st March 2000 from the Balance Sheets given below:

Liabilities	31st March 1999	31st March 2000	Assets	31st March 1999	31st March 2000
Share capital	5,00,000	6,50,000	Fixed assets	4,00,000	5,00,000
General Reserve	1,00,000	1,50,000	Less:Dep	-	50,000
				4,00,000	4,50,000
Profit &Loss A/C	50,000	1,50,000			
Creditors	2,00,000	2,00,000			
7% Debentures	2,00,000	2,00,000			
Proposed Dividend	50,000	65,000	Invesment	1,00,000	1,00,000
			Debtors	2,00,000	3,00,000
			Stock	2,00,000	2,50,000
			Cash	1,50,000	3,15,000
			Mis.exp	50,000	-
	11,00,000	14,15,000		11,00,000	14,15,000

Solution:

Cash Flow Statement

Inflow	Rs.	Outflow	Rs.
Opening cash balance	1,50,000	Proposed dividend paid	50,000
Issue of shares	1,50,000	Fixed assets purchased	1,00,000
Cash trading profit	3,15,000	Increase in debtors	1,00,000
		Increase in stock	50,000
		Closing cash balance	3,15,000
	6,15,000		6,15,000

Working Notes:

Fixed Assets Account

	Rs.		Rs.
To Balance b/d.	4,00,000	By Adjusted Profit & Loss a/c. (depreciation)	50,000
To Cash (purchase) (?)	1,00,000	By Balance c/d.	4,50,000
	5,00,000		5,00,000

Adjusted Profit and Loss Account

	Rs.		Rs.
To General reserve (transfer)	50,000	By Balance b/d.	50,000
To Proposed dividend	65,000		
To Fixed assets (depreciation)	50,000	By Cash trading profit earned during the year (?)	3,15,000
To Miscellaneous expenses written off	50,000		
To Balance c/d.	1,50,000		
	3,65,000		3,65,000

Sum 21: The following are the summarised balance sheets of Anand & Balu as on 1.1.99 and 31.12.99.

Liabilities	1-1-99	31-12-99	Assets	1-1-99	31-12-99
Creditors	40,000	44,000	Cash	10,000	7,000
Loan from Mr.Anand	20,000	-	Debtors	30,000	50,000
Loan from bank	40,000	50,000	Stock	35,000	30,000
Capital	1,25,000	1,53,000	Machinery at cost	1,00,000	90,000
Provision for Depreciation			Land	40,000	50,000
on Machine	25,000	40,000	Building	35,000	60,000
	2,50,000	2,87,000		2,50,000	2,87,000

Machinery costing Rs.10,000 was sold without any loss during the year. Net profit for the year 1999 amounted to Rs. 50,000. Prepare Cash Flow Statement.

Cash Flow Statement

Inflow	Rs.	Outflow	Rs.
Opening cash balance	10,000	Purchase of land	10,000
Sale of machinery	10,000	Purchase of building	25,000
Loan from bank	10,000	Repayment of Mrs. Anand's Loan	20,000
Cash trading profit	65,000	Drawings	22,000
Decrease in stock	5,000	Increase in debtors	20,000
Increase in creditors	4,000	Closing cash balance	7,000
	1,04,000		1,04,000

Working Notes:

Machinery at cost

	Rs.		Rs.
To Balance b/d.	1,00,000	By Bank (sale) (?)	10,000
		By Balance c/d.	90,000
	1,00,000		1,00,000

Provision for Depreciation

	Rs.		Rs.
		By Balance b/d	25,000
		By Adjusted P & L a/c. (?)(Provision made during the year)	15,000
To Balance c/d.	40,000		
	40,000		40,000

Capital Account

	Rs.		Rs.
To Drawings (?)	22,000	By Balance b/d	1,25,000
To Balance c/d.	1,53,000	By Net profit	50,000
	1,75,000		1,75,000

Adjusted Profit & Loss Account

	Rs.		Rs.
To Provision for depreciation	15,000	By Balance b/d	–
To Net profit	50,000	By Cash trading profit	65,000
	65,000		65,000

Unit – IV

Break even Analysis

Basically there are following two techniques for the ascertainment and analysis of cost of production –

1. Absorption costing system
2. Marginal costing system

Absorption costing

Under this system every unit of production absorbs or is charged with a proportionate share of every item of total cost. For this purpose total cost is divided by total units of production to get the proportionate share of one unit.

Marginal costing

Fixed and variable costs behave differently with changes in the volume of outturn; variable costs tend to change in total with increase or decrease in the level of activity but fixed costs tend to vary with time rather than the level of output.

Marginal Cost

Definition

"The amount is increased or decreased by one unit". Here a unit may be single article, a batch of articles, an order, a stage of production capacity, a process or a department. **– C.I.M.A. London**

Marginal Costing

Definition

"The ascertainment by differentiating between fixed costs, and variable costs, of marginal costs and of the effect on profit of changes in volume or type of output." **– C.I.M.A., London**

Difference between absorption costing and marginal costing

S.No	Basis	Absorption costing	Marginal costing
1	**Inclusion**	Both fixed and variable cost are included in the cost of product	Only variable cost i.e. marginal cost is included in the cost of product
2	**Decision making**	Decision making is based on profit	Decision making is based on contribution
3	**Stock valuation**	Stock is valued at total cost i.e. fixed as well as variable cost.	Stock is valued at variable cost only
4	**Treatment of fixed cost**	Fixed cost is the part of the cost of product. It is included in total cost by means of overhead recovery rates.	Being a period cost fixed cost is not included in cost is charged to profit for the period
5	**Emphasis**	Emphasis is on net profit	Emphasis is on the profitability i.e. profit earning rate by means of P/V ratio.
6	**Carry over of fixed cost**	Since fixed cost is included in the cost, a portion of fixed cost is carried over to next period in the form of stock	All the fixed cost pertaining to a period is charged fully to the profit of that period, so on question of carry over to next period.
7	**Period**	This is a long term techniques of price determination	This is a short-term techniques of price determination.

Advantages of Marginal costing

1. Helps in production planning
2. Helpful in budgetary control
3. Constant in nature
4. Preparing tenders
5. Effective cost control
6. "Make or Buy" decision
7. Treatment of overheads simplified
8. Helpful to management

9. Better presentation
10. Uniform and realistic valuation
11. Better results
12. Fixation of selling price.

Disadvantages & limitation of marginal costing

1. Significance lost
2. Automation
3. Difficulty to analyse overhead
4. Claim for loss of stock
5. Time element ignored
6. Unrealiable stock valuation
7. Unrealistic assumption
8. Complete information not given
9. Sales oriented
10. Difficulty in the fixation of price
11. Problem of variable overheads

Objectives of cost-volume profit analysis

1. Forecast profit fairly
2. Flexible budget
3. Performance evaluation
4. Formulating price policies
5. Amount of overhead

Limitation of cost-volume profit analysis

1. Difficult to forecast
2. Expansion of capacity
3. Efficiency of the plant
4. Price variation
5. Cost reduction programmes
6. Fixed and variable cost
7. Inventories.

Breakeven point

Definition

According to Charles T. Horngren – "The breakeven point is that point of sales volume where total revenues and total expenses are equal, it is also said as the point of zero profit or zero loss."

Profit-volume ratio (P/V Ratio)

Another method of determining the relationship between cost, volume and profit is by means of the profit volume ratio (P/V ratio). This ratio is also known as marginal income ratio contribution to sales ratio, or variable profit ratio.

Margin of safety

Sales beyond the break even volume being in profits. Such sales represent a margin of safety expressed as a ratio or percentage M/S.

Improvement in the margin of safety

1. Increase in sales volume
2. Increase in selling price
3. Change in product mix thereby increasing contribution
4. Lowering fixed cost
5. Lowering fixed variable overhead.

Important formulae for cost volume profit relationship

Cost sheet (under marginal costing)

Particulars	**Amount**
Sales (s) Less: Variable cost (Marginal cost) (V) Contribution (C)	…….. …….. ……..

Less: Fixed Cost (F)	……
Profit or loss	……

1. Profit volume ratio
   a. P/V ration = $\frac{C \times 100}{S}$ (C = S – V) Or P/V ratio = 100 – percentage of variable cost
   b. When sales and profit of two period are given:
      P/V ration = $\frac{change\ in\ profit \times 100}{change\ in\ sales}$
   c. Combined or composite P/V ration = $\frac{Total\ contribution \times 100}{Total\ sales}$
2. Breakeven point

   a. B.E.P. (in units) = $\frac{Total\ fixed\ cost}{Contribution\ per\ unit}$
   b. Contribution per unit = $\frac{Total\ fixed\ cost}{B.E.P.in\ units}$
   c. Total fixed cost = B.E.P. in units Contribution per unit
      or
   d. B.E.P. (in units) = $\frac{B.E.P.in\ rupees}{SSelling\ price\ per\ unit}$

   a. B.E.P. (in Rupees) = $\frac{Total\ fixed\ cost}{\frac{P}{V}ratio}$
   b. P/V ratio = $\frac{Total\ fixed\ cost \times 100}{B.E.P.in\ Rs.}$
   c. Total fixed cost = B.E.P. in Rs. X P/V ratio
      or
   d. B.E.P. (in Rs.) = B.E.P. in units x Selling price per unit

3. Margin of safety
   Margin of safety (M.O.S) – Actual sales – B.E.P. sales
   M.O.S = $\frac{Profit \times 100}{\frac{P}{V}ratio}$
4. Profit
   Profit = S x P/V ratio – Fixed cost

OR

a. Profit = M.O.S. (in Rs.) x P/V ratio
b. P/V ratio = $\frac{Profit \times 100}{M.O.S.in\ Rs.}$
c. M.O.S. (in Rs.) = $\frac{Profit \times 100}{P/V\ ratio}$

OR

a. Profit = M.O.S. (in units.) x C per unit
b. Contribution per unit = $\frac{Profit}{M.O.S.in\ units.}$
c. M.O.S. (in units) = $\frac{Profit}{contribution\ per\ unit}$

5. **Sales for desired profits**
   When amount of desired profit is given
   Sales (in Rs.) = $\frac{Total\ fixed\ cost + Desired\ profit}{P/V\ ratio}$ x 100
   Sale (in units) = $\frac{Total\ fixed\ cost + Desired\ profit}{C\ per\ unit}$

When the percentage of desired profits is given

Sales (in Rs.) = $\frac{Total\ fixed\ cost}{P/v\ ratio - percentage\ \ of\ desired\ profit\ \ on\ sales}$

Sales (in units) = $\frac{Total\ \ fixed\ \ cost}{P/v\ ratio - percentage\ \ of\ desired\ \ profit\ \ on\ sales}$

6. **Shut – down point –**

Shut down point (in Rs.) = $\frac{Total\ fixed\ cost + s\square ut\ down\ cost - Unavoidable\ \ fixed\ cost}{P/v\ ratio}$

Shut down point (in units) = $\frac{Total\ fixed\ cost + s\square ut\ down\ cost - Unavoidable\ \ fixed\ cost}{contribution\ \ per\ unit}$

7. **Fixed cost –**

F = S x P/V ratio - profit

8. **Variable cost = S – C (C = S x P/V ratio)**

Management Decision Making

Cost accounting and management accounting play an important role for managerial decision making. There are so many problems before the management some of which are as under –

1. Decision as to make or buy – Such type of problem generally arises in the industry where assembly work is prominent. These industries produce various parts and then assemble them. Before them some time the problem arises whether to make or buy a particular component.
2. Optimum sales mix – When a manufacturer makes many types of products or varieties of one product, a problem arises as to the quantities of the different products or different varieties to be sold so as to maximize the overall profit. This is called problem of sales mix.
3. Decision as to close down a department – When there are many production departments and any one of them does not give favourable financial result, the management has to make the decision to close down the same department. The decision to close down any department should be taken only when contribution of the same department is negative.
4. To discontinue or replace of product – Here also the decision as to discontinue a product should be taken when the contribution of the product goes negative i.e. variable cost of the product is higher than the sale price of that product. The fixed cost of the product will not be considered because fixed cost will not be reduced even when the product is discontinue.
5. Shut down decision – Normally an undertaking should not operate below breakeven point. But sometimes the need arises to continue the business even by incurring losses. But this too has a limit and if the sales continue to fall down a stage will come when it will be profitable to close down the undertaking temporarily instead of continuing it.
6. To explore new market – When the production at full capacity of the factory could not be sold out, the new markets for the spare capacity should be explored.

Sum 1: Prepare Marginal cost statement from the following particulars:

Variable Cost :	
Direct Material	4,500
Direct Wages	2,500
Factory Overheads	1,500
	8,500
Fixed Cost:	
Administrative expenses	1,250
Total Cost	9,750
Profit	5,250 .
Sales	15,000

Solution:

Marginal Cost Statement

	Rs.	Rs.
Sales		15,000
Less : Variable Costs :		
Direct Materials	4,500	
Direct Wages	2,500	
Factory Overheads	1,500	
		8,500
Contribution		6,500
Less : Fixed Cost :		
Administrative expenses		1,250
Profit		5,250

Sum 2: Determine the amount of fixed expenses from the following particulars:

	Rs.
Sales	2,50,000
Direct Material	80,000
Direct Labour	50,000
Variable Overheads	20,000
Profit	60:000

Solution:

Calculation of fixed expenses:

Marginal Cost Statement

	Rs.	Rs
Sales		2,50,000
Less: Variable Costs:		
Direct Material	80,000	
Direct Labour	50,000	
Variable Overheads	20,000	
		1,50,000
Contribution		1,00,000
Less: Fixed expenses (Balancing figure)		40,000
Profit		60,000

Sum 3: Calculate Break-Even Point from the following particulars.

Fixed expenses	1,50,000
Variable cost per unit	10
Selling price per unit	15

Solution:

Calculation of Break-even point :

$$\text{B.E.P. (in units)} = \frac{\text{Fixed expenses}}{\text{Contribution per unit}}$$

Contribution per unit = Selling price p.u. – Variable cost p.u.

Rs. 15 – Rs. 10 = Rs. 5

$$\text{B.E.P. (in units)} = \frac{\text{Rs. } 1,50,000}{5} = 30,000 \text{ units}$$

B.E.P. (in rupees) = B.E.P. in units × Selling price per unit

= 30,000 × Rs. 15

= Rs. 4,50,000

Sum 4 : The fixed expenses of an industrial concern amount to Rs. 1,80,000. Its variable cost per unit *is* Rs. 29 and selling price is Rs. 44 per unit. Calculate the break even point.

Solution:

Contribution per unit = Selling price per unit – Variable cost per unit

= Rs. 44 – Rs. 29 = Rs. 15

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$= \frac{\text{Rs. } 15}{\text{Rs. } 44} \times 100 = 34\% \text{ (approx.)}$$

$$\text{Break even point (in units) (or) Break even sales volume} = \frac{\text{Fixed expenses}}{\text{Contribution per unit}}$$

$$= \frac{\text{Rs. } 1,80,000}{15}$$

= 12,000 units

Break even point (in rupees) (or) Break even sales value

$$= \frac{\text{Fixed expenses}}{\text{P / V Ratio}}$$

$$= \frac{\text{Rs. } 1,80,000}{\frac{15}{44}}$$

$$= 1,80,000 \times \frac{44}{15} = \text{Rs. } 5,28,000$$

Sum 5 :

(a) Calculate break even point from the following: Sales 1,000 units at Rs. 10 each Rs. 10,000 Variable cost - Rs. 6 per unit
Fixed cost-Rs. 8,000

(b) If the selling price is reduced to Rs. 9. what is the new break even point?

Solution:

(a) Contribution per unit = Selling price per unit – Variable cost per unit
= Rs. 10 – Rs. 6 = Rs. 4

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$= \frac{4}{10} \times 100 = 40\%$$

$$\text{Break even point (in units)} = \frac{\text{Fixed expenses}}{\text{Contribution per unit}}$$

$$= \frac{\text{Rs. } 8{,}000}{\text{Rs. } 4} = 2{,}000 \text{ units}$$

$$\text{Break even point (in rupees)} = \frac{\text{Fixed expenses}}{\text{P / V Ratio}}$$

$$= \frac{\text{Rs. } 8{,}000}{40\%} = \text{Rs. } 20{,}000$$

(b) New selling price = Rs. 9
New contribution = Rs. 9 – 6 = Rs. 3

$$\text{New P/V ratio} = \frac{\text{Rs. } 3}{\text{Rs. } 9} \times 100 = 33\tfrac{1}{3}\%$$

$$\text{New break even point (in units)} = \frac{\text{Fixed expenses}}{\text{Contribution per unit}}$$

$$= \frac{\text{Rs. } 8{,}000}{\text{Rs. } 3} = 2{,}666.666 \text{ (or) } 2{,}667 \text{ units}$$

$$\text{New break even point (in Rs.)} = \frac{\text{Fixed expenses}}{\text{P / V Ratio}}$$

$$= \frac{8{,}000}{\frac{3}{9}} = 8{,}000 \times \frac{9}{3}$$

= Rs. 24,000

Sum 6

Vasanth Ltd. presents the following results for one year. Calculate the P/V Ratio, BEP and Margin of Safety.

	RS
Sales	2,00,000
Variable costs	1,20,000
Fixed cost	50,000
Net profit	30,000

Solution:

Marginal cost and contribution statement

Particulars		*Amount Rs.*
	Sales	2,00,000
Less:	Marginal/Variable cost	1,20,000
	Contribution	80,000
Less:	Fixed cost	50,000
	Profit	30,000

$$\text{(1) P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$= \frac{80,000}{2,00,000} \times 100 = 40\%$$

$$\text{(2) Break even point (in rupees)} = \frac{\text{Fixed expenses}}{\text{P / V Ratio}}$$

$$= \frac{50,000}{40} \times 100 = \text{Rs. } 1,25,000$$

$$\text{(3) Margin of safety} = \text{Sales} - \text{Break even sales}$$

$$= 2,00,000 - 1,25,000$$

$$= \text{Rs. } 75,000$$

$$\text{(or)} = \frac{\text{Profit}}{\text{P / V Ratio}}$$

$$= \frac{30,000}{40\%}$$

$$= \text{Rs. } 75,000$$

Sum 7

From the following information, calculate

(a) Break even point

(b) Number of units that must be sold to earn a profit of Rs. 60,000, per year.

(c) Number of units that must be sold to earn a net income of 10% on sales

Sales price	Rs 20 per unit
Variable cost	Rs 14 per unit
Fixed cost	Rs 79,200

Solution:

Contribution per unit = Sales price per unit – Variable cost per unit

= 20 – 14 = 6

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{6}{20} \times 100 = 30\%$$

(a) Break even point in units $= \dfrac{\text{Fixed expenses}}{\text{Contribution per unit}}$

$$= \frac{79{,}200}{6} = 13{,}200 \text{ units}$$

Break even point (in rupees) $= \dfrac{\text{Fixed expenses}}{\text{P / V Ratio}}$

$$= \frac{79{,}200}{30\%}$$

= Rs. 2,64,000

(b) Number of units to be sold to make a profit of Rs. 60,000 per year:

Required sales $= \dfrac{\text{Fixed expenses + Required profit}}{\text{P / V Ratio}}$

$$= \frac{79{,}200 + 60{,}000}{30\%}$$

= Rs. 4,64,000

Units $= \dfrac{4{,}64{,}000}{\text{Selling price}}$

$$= \frac{4{,}64{,}000}{20}$$

= 23,200 units

(c) Number of units to be sold to make a net income of 10% on sales

If 'x' is number of units:

$20x$ = Fixed cost + Variable cost + Profit

$20x = 79{,}200 + 14x + 2x$

$20x - 16x = 79{,}200$

$$x = \frac{79{,}200}{4}$$

= 19,800 units

Proof : Sales = 19,800 × 20	=	3,96,000
Less: Variable cost 19,800 × 14	=	2,77,200
Contribution	=	1,18,800
Less: Fixed cost	=	79,200
Profit	=	39,600

$$\text{Profit as a \% of sales} = \frac{39{,}600}{3{,}96{,}000} \times 100 = 10\%$$

Sum 8

From the following information relating to Palani Bros. Ltd., you are required to find out

(a) P/V Ratio (b) Break even point (c) Profit (d) Margin of safety (e) Volume of sales to earn profit of Rs. 6,000.

	Rs.
Total fixed costs	4500
Total variable cost	7,500
Total sales	15,000

Solution:

Marginal cost and Contribution statement

Particulars		*Amount Rs*
	Sales	15,000
Less	Variable cost	7,500
	Contribution	7,500
Less	Fixed cost	4,500
	Profit	3,000

(a) P/V Ratio $= \frac{\text{Contribution}}{\text{Sales}} \times 100$

$= \frac{7,500}{15,000} \times 100 = 50\%$

(b) Break even sales $= \frac{\text{Fixed expenses}}{\text{P / V Ratio}}$

$= \frac{4,500}{50\%} = \text{Rs. } 9,000$

(c) Profit = Rs. 3,000

(d) Margin of safety = Sales – Break even sales

= 15,000 – 9,000 = Rs. 6,000

(e) Sales to earn profit of Rs. 6,000

Required sales $= \frac{\text{Fixed cost + Required profit}}{\text{P / V Ratio}}$

$= \frac{4,500 + 6,000}{50\%} = \text{Rs. } 21,000$

Sum 9: Calculate Break-even point:

	Rs.
Sales	6,00,000
Fixed expenses	1,50,000
Variable costs :	
Direct Material	2,00,000
Direct Labour	1,20,000
Other Variable expenses	80,000

$$\text{B.E.P. (in Rs.)} = \frac{\text{Fixed expenses}}{\text{Contribution}} \times \text{Sales}$$

$$\text{Contribution} = \text{Sales} - \text{Variable cost}$$

$$= \text{Rs. } 6,00,000 - \text{Rs. } 4,00,000 = \text{Rs. } 2,00,000$$

$$= \frac{1,50,000}{2,00,000} \times 6,00,000 = \text{Rs. } 4,50,000$$

Note : When per unit cost and selling price are not given, B.E.P. can be calculated only in terms of Rupees.

Sum 10: Given:

Fixed cost	Rs. 8,000
Break Even Sales (in units)	4000
Sales	7000 units
Selling price per unit	Rs. 10

Calculate (a) Variable cost (b) Profit

Break Even Sales = 4000 units
Selling price p.u. = Rs. 10
Break Even Sales (in Rs.) = 4,000 × 10 = Rs. 40,000

(a) Calculation of Variable cost:

At break even sales profit is NIL

	Break Even Sales	= Rs. 40,000
Less:	Variable Cost (bal. fig)	= Rs. 32,000
	Contribution	= Rs. 8,000
Less:	Fixed Cost	= Rs. 8,000
	Profit	= 0

$$\text{Variable Cost p.u.} = \frac{32,000}{4,000 \text{ units}} = \text{Rs. } 8$$

(b) Profit when sales are 7,000 units:

	Sales (7,000 units × Rs. 10)	= Rs. 70,000
Less:	Variable cost (7000 × 8)	= Rs. 56,000
	Contribution	= Rs. 14,000
Less:	Fixed cost	= Rs. 8,000
	Profit	= Rs. 6,000

Sum 11: The following information are given for two companies.

	X Ltd.	Y Ltd.
Units produced & sold	17,000	17,000
Revenues	Rs. 1,70,000	Rs. 1,70,000
Fixed costs	85,000	34,000
Operating income	51,000	51,000
Variable cost	34,000	85,000

Find out the Break-Even Point of each company both in units as well as in volume.

Solution :

	X Ltd. Rs.	Y Ltd. Rs.
Sales	1,70,000	1,70,000
Less : Variable cost	34,000	85,000
Contribution	1,36,000	85,000
Less : Fixed cost	85,000	34,000
Profit (Operating income)	51,000	51,000

$$\text{B.E.P. (in Rs.)} = \frac{\text{Fixed cost}}{\text{Contribution}} \times \text{Sales}$$

$$\text{X Ltd} = \frac{85,000}{1,36,000} \times 1,70,000 = \text{Rs. } 1,06,250$$

$$\text{Y Ltd} = \frac{34,000}{85,000} \times 1,70,000 = \text{Rs. } 68,000$$

Selling price p.u. = 1,70,000 ÷ 17,000 = Rs. 10

B.E.P. (in units)

X Ltd = 1,06,250 ÷ 10 = 10,625 units

Y Ltd = 68,000 ÷ 10 = 6,800 units

Sum 12: From the following particulars find out the B.E.P. What will be the selling price per unit if B.E.P. is to be brought down to 9,000 units?

	Rs
Variable cost per unit	***75***
Fixed expenses	2,70,000
Selling price per unit	100 .

$$\text{B.E.P. (in units)} = \frac{\text{Fixed expenses}}{\text{Contribution per unit}}$$

Contribution = Selling price p.u. – Variable cost p.u.
= Rs. 100 – Rs. 75 = Rs. 25

$$\text{B.E.P. (in units)} = \frac{2,70,000}{25} = 10,800 \text{ units}$$

If break-even point is brought down to 9,000 units, fixed expenses are to be recovered from 9,000 units to have no profit and no loss.

$$\text{Fixed expenses per unit} = \frac{\text{Fixed expenses}}{\text{No. of units}}$$

$$= \text{Rs. } \frac{2,70,000}{9,000} = \text{Rs. } 30$$

When B.E.P. is 9,000 units, Selling price p.u. is calculated as follows:

Selling price = Fixed expenses + Variable expenses per unit.

= Rs. 30 + Rs. 75 = Rs. 105

Sum 13: From the following data, Calculate Break-even point expressed in terms of units and also the new B.E.P. if selling prices reduced by 10%.

Fixed expenses:	-
Depreciation	Rs. 1,00,000
Salaries	Rs. 1,00,000
Variable expenses:	
Materials	Rs. 3 per unit
Labour	Rs. 2 per unit
Selling price	Rs. 10 per unit

Solution:

(i) Calculation of B.E.P. (in units):

$$\text{B.E.P. (in units)} = \frac{\text{Fixed expenses}}{\text{Contribution per unit}}$$

$$\text{Contribution (S – V)} = \text{Rs. } 10 - \text{Rs. } 5 = \text{Rs. } 5$$

$$= \frac{2,00,000}{5} = 40,000 \text{ units}$$

(ii) When selling price is reduced by 10% :

New selling price per unit = Rs. 9 (Rs. 10 – Re. 1)

Less : Variable cost per unit = Rs. 5

New contribution = Rs. 4

$$\text{New B.E.P. (in units)} = \frac{2,00,000}{4} = 50,000 \text{ units.}$$

Sum 14: From the following data calculate

(1) Numbers of units to be sold to earn a profit of Rs. 1,20,000.

(ii) Sales to earn a profit of Rs. 1,20,000.

Selling price per unit Rs. 40

Variable selling cost per unit Rs. 3

Variable manufacturing cost per unit Rs. 22

Fixed factory overhead Rs. 1,60,000

Fixed selling cost Rs. 20,000

Solution:

(i) Number of units to be sold to earn a profit of Rs. 1,20,000

$$= \frac{\text{Fixed expenses + Desired profit}}{\text{Contribution per unit}}$$

Contribution p.u. = Rs. 40 – Rs. 25 = Rs. 15

$$= \frac{1,80,000 + 1,20,000}{15}$$

$$= \frac{3,00,000}{15} = 20,000 \text{ units}$$

(ii) Sales to earn a profit of Rs. 1,20,000

$$= \frac{\text{Fixed expenses + Desired profit}}{\text{Contribution per unit}} \times \text{Selling price p.u.}$$

$$= \frac{1,80,000 + 1,20,000}{15} \times 40 = \text{Rs. } 8,00,000$$

Sum 15: The statement of cost of a cycle is as follows:

Material	Rs.	200	Fixed expenses	Rs. 75
Labour	Rs.	100	Profit	Rs. 125
Variable expenses	Rs.	25	Selling price	Rs. 525

The number of cycles made and sold are 10,000 units. Find out:
(i) Break even point (ii) How many cycles must be produced and sold if the selling price is reduced by Rs. 25 and the same profit is maintained.

(i) **B.E.P. (in units)** $= \frac{\text{Fixed expenses}}{\text{Contribution per unit}}$

Contribution (S – V) = Rs. 525 – Rs. 325 = Rs. 200
Fixed expenses per unit = Rs. 75
for 10,000 units = 75 × 10,000 = Rs. 7,50,000

B.E.P. (in units) $= \frac{7,50,000}{200} = 3,750$ units

(ii) Present profit for 10,000 units at Rs. 125 p.u. = Rs. 12,50,000

	Rs.
Present selling price per unit	525
Less : Reduction in selling price to be made	25
Revised selling price per unit	500

No. of units to be produced to earn the present profit of Rs. 12,50,000 is:

$$= \frac{\text{Fixed expenses + Desired profit}}{\text{Contribution per unit}}$$

Contribution per unit = Rs. 500 – Rs. 325 = Rs. 175

$$= \frac{7,50,000 + 12,50,000}{175}$$

$$= 11,428 \text{ units}$$

Sum 16: You are required to calculate Break Even Volume from the following data:
Profit Rs. 5,000 (20% of sales)
P.V. ratio is 50%

Solution:

Sales :

Profit is 20% of Sales

(ie) If profit is Rs. 20, Sales = Rs. 100

If profit is Rs. 5000, Sales $= 5{,}000 \times \frac{100}{20} = 25{,}000$

Sales = Rs. 25,000

Fixed Cost :

P.V. ratio is 50%

It means rate of contribution to sales is 50%

Contribution = Sales × P.V. ratio
= 25,000 × 50% = 12,500

Contribution	=	Rs. 12,500
Less Fixed cost (?)	=	Rs. 7,500
Profit	=	Rs. 5,000

Break Even Sales :

$$\text{Break Even Sales} = \frac{\text{Fixed cost}}{\text{P.V. Ratio}}$$

$$= \frac{7{,}500}{50} \times 100 = \text{Rs. } 15{,}000$$

Sum 17: You are given:
Margin of safety Rs. 10,000 which represents 40% of sales. P.V. ratio 50%. Calculate (a) Sales (b) Break even sales (c) Fixed cost (d) Profit.

Solution:

(a) Sales :

Margin of safety 40% of sales

If margin of safety is Rs. 40, sales = Rs. 100

If margin of safety is Rs. 10,000, Sales $= 10{,}000 \times \frac{100}{40}$

= Rs. 25,000

(b) Break Even Sales :

Break Even Sales = Sales − Margin of Safety
= Rs. 25,000 − Rs. 10,000 = Rs. 15,000

(c) Fixed Cost :

P.V. ratio = 50%

It means contribution is Rs. 50 when Sales are Rs. 100

∴ Contribution at break even sales
= Break even sales × P.V. ratio
= Rs. 15,000 × 50%

Contribution	=	Rs. 7,500
Less Fixed cost (?)	=	Rs. 7,500
Profit at B.E.P.	=	Rs. 0

(d) **Profit**

Contribution	= Sales × P.V. ratio
	= 25,000 × 50%
Contribution	= Rs. 12,500
Less Fixed cost (?)	= Rs. 7,500
Profit	= Rs. 5,000

Sum 18: Find the profit from the following data:

Sales	80,000
Marginal cost	60,000
Break-even sales	60,000

Solution:

(i) **P.V. ratio** $= \frac{\text{Contribution}}{\text{Sales}} \times 100$

$= \frac{20,000}{80,000} \times 100 = 25\%$

(ii) **Fixed expenses:**

B.E.P. (in Rupees) $= \frac{\text{Fixed expenses}}{\text{P.V. ratio}}$

$60,000 = \frac{\text{Fixed expenses}}{25\%}$

Fixed expenses $= 60,000 \times \frac{25}{100} = \text{Rs. } 15,000$

(iii) **Profit :**

Contribution	= Rs. 20,000
Less : Fixed expenses	= Rs. 15,000
Profit	= Rs. 5,000

Sum 19: Assuming that the cost structure and selling prices remain the same in periods I and II find out :

i) P/V ratio
ii) BE. Sales
iii) Profit when sales are Rs. 1,00,000
iv) Sales required to earn a profit of Rs. 20,000
v) Margin of safety in II nd period

Period	Sales Rs.	Profit Rs.
I	1,20,000	9,000
II	1,40,000	13,000

Solution:

(i) P.V. ratio $= \dfrac{\text{Contribution}}{\text{Sales}} \times 100$

(or)

$$= \frac{\text{Changes in profit}}{\text{Changes in sales}} \times 100$$

$$= \frac{13,000 - 9,000}{1,40,000 - 1,20,000} \times 100$$

$$= \frac{4,000}{20,000} \times 100 = 20\%$$

(ii) To calculate break-even point it is necessary to calculate Fixed expenses:

Contribution = Sales × P.V ratio

$$= 1,20,000 \times \frac{20}{100} = \text{Rs. } 24,000$$

Contribution	= Rs. 24,000
Less: Fixed expenses (?)	= Rs. 15,000
Profit (given)	= Rs. 9,000

∴ Fixed expenses Rs. 15,000 p.a.

Note : Even if you proceed with 2nd period sales, you will get same fixed cost.

$$\text{B.E. Sales} = \frac{\text{Fixed expenses}}{\text{P.V. ratio}}$$

$$= \frac{15,000}{20} \times 100 = \text{Rs. } 75,000$$

(iii) Profit when sales are Rs. 1,00,000 :

Contribution = Sales × P.V. ratio

$$= 1,00,000 \times \frac{20}{100} = \text{Rs. } 20,000$$

Contribution	= Rs. 20,000
Less : Fixed expenses	= Rs. 15,000
Profit (given)	= Rs. 5,000

(iv) Sales required to earn a profit of Rs. 20,000

$$= \frac{\text{Fixed expenses + Desired profit}}{\text{P.V. ratio}}$$

$$= \frac{15,000 + 20,000}{20\%} = \frac{35,000}{20} \times 100 = \text{Rs. } 1,75,000$$

(v) Margin of safety in II period.

$$= \frac{\text{Profit}}{\text{P.V. ratio}} = \frac{13,000}{20} \times 100 = \text{Rs. } 65,000$$

Sum 20

The sales turnover and profit during two years were as follows:

Year	*Sales Rs.*	*Profit Rs.*
1991	1,40,000	15,000
1992	1,60,000	20,000

Calculate:

(a) P/V Ratio (b) Break-even point (c) Sales required to earn a profit of Rs. 40.000
(d) Fixed expenses (e) Profit when sales are Rs. 1,20,000

Solution:

When sales and profit or sales and cost of two periods are given, the P/V Ratio is obtained by using the 'Change formula'.

Fixed cost can be found by ascertaining the contribution of one of the periods given by multiplying sales with P/V Ratio. Then, contribution – Profit can reveal the fixed cost.

Ascertaining P/V ratio using the change formula and finding fixed cost are the essential requirements in these types of problems.

(a) P/V Ratio $= \dfrac{\text{Change in profit}}{\text{Change in sales}} \times 100$

Change in profit = 20,000 – 15,000 = Rs. 5,000

Change in sales = 1,60,000 – 1,40,000 = Rs. 20,000

$\therefore$ P/V Ratio $= \dfrac{5,000}{20,000} \times 100 = 25\%$

(b) Break even point $= \dfrac{\text{Fixed expenses}}{\text{P / V Ratio}}$

Fixed expenses = Contribution – Profit

Contribution = Sales × P / V Ratio

Using 1991 sales, contribution $= 1,40,000 \times \dfrac{25}{100} = \text{Rs. } 35,000$

Fixed expenses = 35,000 – 15,000 = Rs. 20,000

Note: The same fixed cost can be obtained using 1992 sales also.

Break even point $= \dfrac{20,000}{25\%} = \text{Rs. } 80,000$

(c) Sales required to earn profit of Rs. 40,000

Required sales $= \dfrac{\text{Required profit + Fixed cost}}{\text{P / V Ratio}}$

$= \dfrac{40,000 + 20,000}{25\%} = \text{Rs. } 2,40,000$

(d) Fixed expenses = Rs. 20,000 (as already calculated)

(e) Profit when sales are Rs. 1,20,000

Contribution = Sales × P / V Ratio

$= 1,20,000 \times \dfrac{25}{100} = \text{Rs. } 30,000$

Profit = Contribution – Fixed cost

= 30,000 – 20,000

= Rs. 10,000

Sum 21

A.G. Ltd. furnished you the following related to the year 1996.

	First half of the year Rs.	*Second half of the year Rs.*
Sales	45,000	50,000
Total cost	40,000	43,000

Assuming that there is no change in prices and variable cost and that the fixed expenses are incurred equally in the 2 half year periods, calculate for the year 1996:

(a) The profit volume ratio

(b) Fixed expenses

(c) Break even sales and

(d) % of margin of safety.

Solution:

	First half Rs	*Second half* Rs	*Change in sales and profit* Rs
Sales	45,000	50,000	5,000
Less cost	40,000	43,000	3,000
Profit	5,000	7,000	2,000

(a) P/V Ratio $= \dfrac{\text{Change in profit}}{\text{Change in sales}} \times 100$

$= \dfrac{2,000}{5,000} \times 100 = 40\%$

Contribution During the first half $=$ Sales $\times$ P / V Ratio

$=$ Rs. 45,000 $\times$ 40%

$=$ Rs. 18,000

(b) Fixed cost $=$ Contribution – Profit

For 1st half year $=$ 18,000 – 5,000 = Rs. 13,000

Fixed cost for the full year $=$ 13,000 $\times$ 2 $=$ Rs. 26,000

(c) Break even sales for the year 1996 $= \dfrac{\text{Fixed cost}}{\text{P / V Ratio}}$

$= \dfrac{26,000}{40\%} =$ Rs. 65,000

(d) Margin of safety for the year 1996

MOS $=$ Sales – Break even sales

$=$ 95,000 – 65,000 = Rs. 30,000

Percent of margin of safety $= \dfrac{\text{Margin of safety}}{\text{Sales for the year}} \times 100$

$= \dfrac{30,000}{95,000} \times 100$

$= 31.58\%$

Sum 22

From the particulars given below calculate:

(a) Break even point

(b) Profit or loss when sales are Rs. 12,000 and

(c) Sales required to earn a profit of Rs. 5,000

	Sales Rs.	*Prof it/Loss (-) Rs.*
Period 1	10,000	-500
2	14,000	1,500

Solution:

W. N. 1

$$\text{P/V Ratio} = \frac{\text{Change in profit}}{\text{Change in sales}} \times 100$$

Change in profit = 1,500 + 500 = Rs. 2,000

Change in sales = 14,000 – 10,000 = Rs. 4,000

$$\therefore \text{P/V Ratio} = \frac{2,000}{4,000} \times 100 = 50\%$$

Note: Loss in period 1 and profit in period 2 should be added to get change in profit.

W. N. 2

Fixed expenses = Contribution – Profit

Contribution = Sales × P / V Ratio

Using sales of period 2, $= 14,000 \times \frac{50}{100} = \text{Rs. } 7,000$

Fixed expenses = 7,000 – 1,500 = Rs. 5,500

(a) Break even point (in rupees) $= \frac{\text{Fixed expenses}}{\text{P / V Ratio}}$

$$= \frac{5,500}{50\%} = \text{Rs. } 11,000$$

(b) Profit or Loss when sales are Rs. 12,000

Contribution = Sales × P / V Ratio

$$= 12,000 \times \frac{50}{100} = \text{Rs. } 6,000$$

Profit = Contribution – Fixed cost

= 6,000 – 5,500 = Rs. 500

(c) Sales required to earn profit of Rs. 5,000

$$\text{Required sales} = \frac{\text{Required profit + Fixed expenses}}{\text{P / V Ratio}}$$

$$= \frac{5,000 + 5,500}{50\%} = \text{Rs. } 21,000$$

UNIT – V
BUDGETING AND BUDGETARY CONTROL

Budget

"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." An analysis of this definition will reveal the essential features of a budget, namely that (i) a budget may be expressed in terms of money or quantity, or both, (ii) it should be developed prior to the period during which it is to operate, (iii) it is set for a definite period.

Definition of Budget

"Budget is a standard with which to measure the actual achievement of people or department etc.

Objectives of budgetary control

1. A blue print
2. Means of co-ordination
3. Means of communication
4. Centralized control

Essentials of effective budgeting

1. Support to top management
2. Sound forecasting
3. Good business policies
4. Adequate accounting system
5. Good reporting system
6. Accurate and adequate statistical information
7. Participation by responsible executives
8. Clearly defined organization
9. Reasonable of budget committee
10. Motivational approach
11. Integration with standard costing system
12. Cost of the system

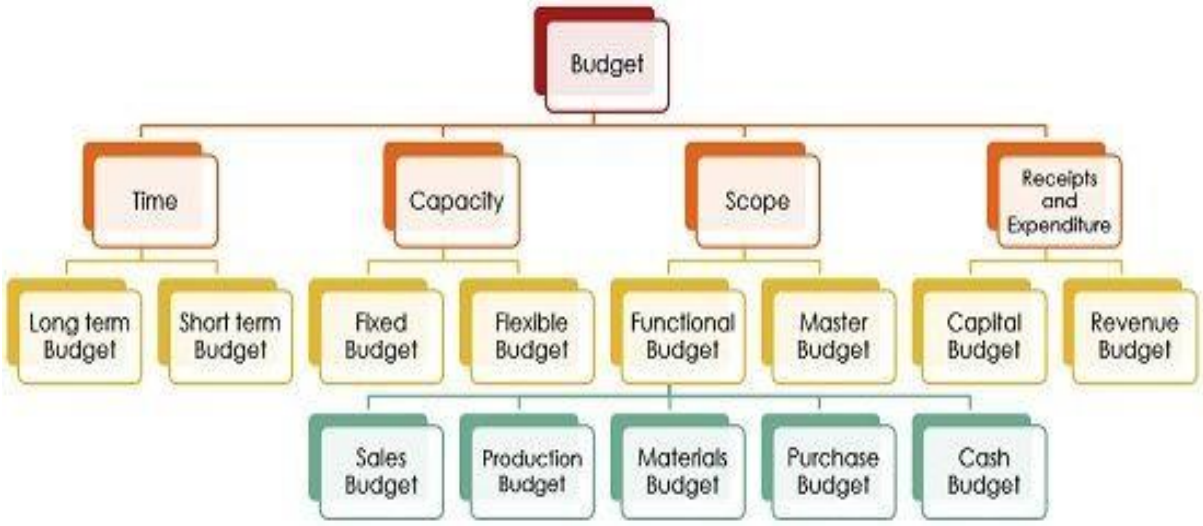
Advantages of budgetary control

1. Maximization of profits
2. Clear definition of the objectives
3. Planned approach
4. Co-operation
5. Effective utilization
6. Remedial measures
7. Motivating force
8. Sufficiency of working capital
9. Habit of thinking ahead
10. Delegation of authority
11. Seasonal or cyclic fluctuations
12. Force-runners of standard costs
13. Basis for internal audit
14. Incentive systems of remuneration by results

Disadvantages or limitations of budgetary control

1. Creates confusion
2. Only estimates
3. Constant revision
4. Difficult to operate
5. Mechanical
6. Show off

Classification of Budgets



1. *Based on time*

- **Long-term Budget**: The budget designed by the management for a long-term, i.e. three to ten years is called as long-term budget.
- **Short-term Budget**: As the name suggests, the budget which is prepared for a period ranging from 1 to 2 years, is called short-term budget.

2. *Based on Capacity*

- **Fixed Budget**: The budget created for a fixed activity level, i.e. the budget remains constant regardless of the level of activity, is called as fixed budget.
- **Flexible Budget**: The budget which changes with the change in the level of activity is a flexible budget. It identifies the fixed cost, semi-variable cost and variable cost, to show the expected results at different volumes.

3. *Based on Scope*

- **Functional Budget**: The budget which is concerned with the business functions is called as functional budget. It can be further classified as:

- **Sales Budget**: Sales budget is used to determine the quantity of anticipated sales and the expected selling price per unit.
- **Production Budget**: It is prepared to indicate the production for the specified period and is expressed in the units of outputs produced.
- **Materials Budget**: The budget prepared to show the quantities of direct material and raw material required to manufacture the finished product.
- **Purchase Budget**: Purchase budget is designed to estimate the quantity and value of different items to be bought at different points of time, considering the production schedule and inventory required.
- **Cash Budget**: The budget highlights the cash needed by the business in a specified period, taking into account all the receipts and payments of the business.

  Apart from those discussed above, there are other functional budgets also, i.e. plant utilization budget, direct material usage budget, factory overhead budget, production cost budget, cost of goods sold budget, selling and distribution cost budget, administration expenses budget, etc.
- **Master Budget**: Once all the functional budgets are created, then the financial officer will prepare a master budget. It is an integrated budget that reflects the estimated profit and loss and financial position using Budgeted Profit & Loss Account and Budgeted Balance Sheet of the concern.

4. ***Based on Receipts and Expenditure***

- **Capital Budget**: The budget takes into account the estimated capital receipts and expenditure of the business for a specified period.
- **Revenue Budget:** The budget that covers all the revenue receipts and expenses of a particular financial year is a revenue budget.

  A budget acts as a map for the future economic activities of the business, which are prepared as per the policies of the different organizational functions. It aims at making optimum utilisation of the capital and other resources of the organization.

Production Budget:

Sum 1: Prepare a production budge for three months ending March 31, 2008 for a factory producing four products, on the basis *of* the *following* information:

Type of . Product	Estimated Stock on January 1, 2008 Units	Estimated Sales during January-March, 2008 Units	Desired closing Stock March 31, 2008 Units
A	2,000	10,000	5,000
B	3,000	15,000	4,000
C	4,000	13,000	3,000
D	5,000	*12,000*	2,000

Production Budget for 3 months ending 31-3-2008

Particulars	A (Units)	B (Units)	C (Units)	D (Units)
Estimated Sales	10,000	15,000	13,000	12,000
Add: Desired closing stock	5,000	4,000	3,000	2,000
	15,000	19,000	16,000	14,000
Less: Opening stock	2,000	3,000	4,000	5,000
Estimated production	13,000	16,000	12,000	9,000

Sum 2:

You are required to prepare a production budget for the half year ending June 2000 from the following information:

Product	*Budgeted sales quantity units*	*Actual stock On 31-12-99 . units*	*Desired stock on 30-6-2000 units*
S	20,000	4,000	5.000
T	50,000	6,000	10,000

Production Budget for the half year ending 30-6-2000

Particulars		*Products*		*Total*
		S units	*T units*	*units*
	Sales (Budgeted)	20,000	50,000	70,000
Add:	Closing stock (desired) as on 30-6-2000	5,000	10,000	15,000
		25,000	60,000	85,000
Less:	Opening stock as on 1-1-2000	4,000	6,000	10,000
	Quantity to be produced	21,000	54,000	75,000

Cash Budget

Sum 3: From the following data forecast the cash position at the end of April, May, and June

Month	*Sales*	*Purchases*	*Wages*	*Sales expenses*
1998	*Rs*	*Rs*	***Rs***	*Rs*
February	1,20,000	80,000	10,000	7,000
March	130,000	98,000	12,000	9,000
April	70,000	1,00,000	8,000	5,000
May	1,16,000	1,03,000	10,000	10,000
June	85,000	80,000	8.000	6,000

Further Information

Sales at 10% realized in the month of sales. Balance equally realized in 2 subsequent months.
Purchases : Creditors are paid in the month following the month of supply.
Wages : 20% paid in arrears in the following month.
Sundry Expenses paid in the month itself
Income tax Rs.20,000 payable in June
Dividend Rs.12,000 payable in June
Income from Investments Rs.2,000 received Half yearly in march and September.
Cash balance on hand as on 1.4.1988 Rs.40,000

Cash Budget for Three months ending June 1998

Particulars	*April* *Rs.*	*May* *Rs.*	*June* *Rs.*
Opening balance of cash	40,000	47,700	29,700
Add: Receipts of cash:			
Cash sales	7,000	11,600	8,500
Cash from debtors:			
1st month (W. N.)	58,500	31,500	52,200
2nd month (W. N.)	54,000	58,500	31.500
Total receipts I	1,59,500	1,49,300	1,21,900
Payments: Creditors for purchases	98,000	1,00,000	1,03,000
Wages: Current	6,400	8,000	6,400
Arrears	2,400	1,600	2,000
Sundry expenses	5,000	10,000	6,000
Income tax	–		20,000
Dividend	–		12,000
Total payments II	1,11,800	1,19,600	1,49,400
Closing balance of cash I – II	47,700	29,700	– 27,500 (O D)

Sum 4: A newly stalled Pushpak Co.. wishes to prepare cash budget from January Prepare a cash budget for the 6 months from the following estimated revenue and expenses.

Months	*Total sales*	Materials	*Wages*	*Production overhead*	*Selling & Distribution overhead*
January	20,000	20,000	4,000	3,200	800
February	22,000	14,000	4,400	3,300	900
March	24,000	14,000	4,600	3,300	800
April	26,000	12,000	4,600	3,400	900
May	28,000	12,000	4,800	3,500	900
June	30,000	16,000	4,800	3,600	1,000

Cash balance on 1 st January was Rs 10 000. A new machine is to be installed at Rs 30,000 on credit, to be repaid by two equal instalments in March and April. Sales commission at 5% on total sales is to be paid within the month following actual sales.
Rs. 10,000 being the amount of 2nd call may be received in March. Share premium amounting to Rs 2 000 is also obtained with 2nd call
Period of credit allowed by suppliers 2 months
Period of credit allowed to customers 1 month
Delay in payment of overheads 1 month
Delay in payment of wages 1/2 month
Assume cash sales to be 50% of the total sales.

Cash Budget for six months ending June

Particulars	*Jan.* Rs.	*Feb.* Rs.	*March* Rs.	*April* Rs.	*May* Rs.	*June* Rs.
Opening cash balance	10,000	18,000	29,800	20,000	6,100	8,800
Add: Receipts:						
Cash sales	10,000	11,000	12,000	13,000	14,000	15,000
Cash from debtors	–	10,000	11,000	12,000	13,000	14,000
Share 2nd call	–	–	10,000	–	–	–
Share premium	–	–	2,000	–	–	–
Total receipts I	20,000	39,000	64,800	45,000	33,100	37,800
Payments:						
Materials	–	–	20,000	14,000	14,000	12,000
Wages	2,000	4.200	4,500	4,600	4,700	4,800
Production overheads	–	3,200	3,300	3,300	3,400	3,500
Selling and distribution overhead	–	800	900	800	900	900
Sales commission at 5% on total sales	–	1,000	1,100	1,200	1,300	1,400
Machinery instalment	–		15,000	15,000	–	–
Total payments II	2,000	9,200	44,800	38,900	24,300	22,600
Closing balance of cash I – II	18,000	29,800	20,000	6,100	8,800	15,200

Note: Since delay in payment of wages is 1/2 month, every month cash payment for wages is 50% of wages of the same month plus 50% of wages of the previous month.

Sum 5: From the particulars given below prepare a Cash Budget for the month June 2008:
a. Expected sales:
April 2008 - Rs. 2,00,000; May - Rs. 2,20,000;
June - Rs. 1,90,000.
Credit allowed to customers is two months and 50% of the sales of every month is on cash basis.
b. Estimated purchases :
May 2008 - Rs. 1,20,000; June - 1,10,000
40% of the purchase of every month is on cash basis and the balance is payable next month.
c. Rs. 2,000 is payable as rent every month.
d. Time lag in payment of overhead is ½ month. Overhead : For May Rs. 12,000; For June Rs. 11,000
e. Depreciation for the year is Rs. 12,000.
f. Interest receivable on investment during June and December Rs. 3,000 each.
g. Estimated Cash Balance as on 1-6-2008 is Rs. 42,500.

Cash Budget for the month of June 2008

		Rs.	Rs.
Opening balance			42,500
Receipts:			
Cash sales		95,000	
Debtors		1,00,000	
Interest on Investments		3,000	
			1,98,000
			2,40,500
Less : Payments:			
Cash Purchases		44,000	
Creditors		72,000	
Rent		2,000	
Overheads:	May 6,000		
	June 5,500		
		11,500	
			1,29,500
Closing balance			1,11,000

Note : Depreciation is a non-cash item. Hence, it is not considered.

Sum 6: BPL Ltd. wishes to arrange overdraft facilities with its bankers during the period April to June 2008 when it will be manufacturing mostly for stock Prepare a C ash Budget for the above period from the following data, indicating the extent of the bank facilities the company will require at the end of each month:

(a)	**Credit Sales**	**Purchases**	**Wages**
	Rs.	**Rs.**	**Rs.**
February 2008	1,80,000	1,24,800	12,000
March	1,92,000	1,44,000	14,000
April	1,08,000	2,43,000	11,000
May	1,74,000	2,46,000	10,000
June	1,26,000	2,68,000	15,000

(b) 50 *per*cent of c rcdit sales are realised in the month following the sales and the remaining 50 percent in the second month following.

Creditors arc paid in the month following the month of purchase. Lag in payment of wages 1 month.

(c) Cash at bank on 1-4-2008 (estimated) Rs. 25,000.

BPL Ltd.

Cash Budget for 3 months ending June 2008

	April Rs.	May Rs.	June Rs.
Opening balance	25,000	53,000	—
Receipts :			
Realisation from Debtors	90,000	96,000	54,000
	96,000	54,000	87,000
Total	2,11,000	2,03,000	1,41,000
Payments:			
Wages	14,000	11,000	10,000
Purchases	1,44,000	2,43,000	2,46,000
Total	1,58,000	2,54,000	2,56,000
Surplus or (Deficit)	53,000	(51,000)	(1,15,000)
Estimated overdraft (assumed)	—	51,000	1,15,000
Closing balance	53,000	—	—

Sales Budget

Sum 7: Gopi & Co. Ltd. produce two products, Alpha and Beta There are two sales divisions, North and South Budgeted sales for the year ended 31st December 2006 were as follows;

Division	**Products**	**Units**	**Price per unit Rs.**
North	Alpha	25,000	**10**
	Beta	15,000	**5**
South	Alpha	24,000	**10**
	Beta	30,000	**5**

Actual sales for the said period were:

Product	**South**	**North**
Alpha	28,000 units @ Rs 10 each	25,000 units @ Rs.10 each
Beta	18,000 units @ Rs. 5 each	33,000 units @ Rs. 5 each

On the basis of assessments of the salesmen the following are the observations of sales division for the year ending 31 st December 2007.

North Zone Alpha Budgeted increase of 40% on 2006 budget Beta Budgeted increase of 10% on 2006 budget

South Zone Alpha Budgeted increase of 12% on 2006 budget Beta Budgeted increase of 15% on 2006 budget

It was further decided that because of the increased sales campaign in North an additional sales of 5,000 units of product will result.

Prepare a sales budget incoroporating the above information

Working:

BUDGET FOR 2007

North: Alpha 25,000 + (40% Increase) 10,000 + 3,125 = 38,125 units
Beta 15,000 + (10% Increase) 1,500 + 1,875 = 18,375 units

South: Alpha 24,000 + (12% Increase) 2,880 = 26,880 units
Beta 30,000 + (15% Increase) 4,500 = 34,500 units

Note : Additional sales of 5,000 units in north division is distributed for Alpha and Beta in the proportion of 25,000 : 15,000 (budgeted quantity for 2006).

Solution:

Gopi & Co. Ltd.

Sales Budget for the year 2007

Division	Product	Budget for 2007			Budget for 2006			Actual Sales for 2006		
		Quantity	Price	Value	Quantity	Price	Value	Quantity	Price	Value
			Rs.	Rs.		Rs.	Rs.		Rs.	Rs.
North	Alpha	38,125	10	3,81,250	25,000	10	2,50,000	28,000	10	2,80,000
	Beta	18,375	5	91,875	15,000	5	75,000	18,000	5	90,000
Total (A)		56,500		4,73,125	40,000		3,25,000	46,000		3,70,000
South	Alpha	26,880	10	2,68,800	24,000	10	2,40,000	25,000	10	2,50,000
	Beta	34,500	5	1,72,500	30,000	5	1,50,000	33,000	5	1,65,000
Total (B)		61,380		4,41,300	54,000		3,90,000	58,000		4,15,000
Total	Alpha	65,005		6,50,050	49,000		4,90,000	53,000		5,30,000
Total	Beta	52,875		2,64,375	45,000		2,25,000	51,000		2,55,000
Total (A + B)		1,17,880		9,14,425	94,000		7,15,000	1,04,000		7,85,000

Sum 8

Quick Products Ltd sells two products X and Y in two divisions North and South The following were the budgeted and actual sales for the year 1999

		Budget			*Actual*			
	North		*South*		*North*		*South*	
	Units	*Rs per unit*	*Units*	*Rs per unit*	*Units*	*Rs per unit*	***Units***	*Rs per unit*
Product X	500	180	300	180 430	*600*	180	400	180
Product Y	300	430	200		200	430	150	430

For the year 2000. the board of directors has approved the proposal of sales department to increase the price of 'X' to Rs. 200 and decrease the price of 'Y' to 400. The sales estimates from the divisional managers were as follows:

North: 'X' 800units [l]Y' 500units South. 'X' 600 units 'Y' 300 units

An intensive advertising campaign proposed by advertising consultants is expected to result in additional sales of 20% of each product in each division over the estimated sales. Prepare the sales budget for the year 2000 and present it together with the budgeted and actual sales for 1999.

Quick Products Ltd.

Sales Budget for the year 2000

Division	*Product*	*Budget for 2000*			*Budget for 1999*			*Actual sales for 1999*		
		Qty. units	*Price Rs.*	*Amount Rs.*	*Qty. Units*	*Price Rs.*	*Amount Rs.*	*Qty. Units*	*Price Rs.*	*Amount Rs*
North	X	960	200	1,92,000	500	180	90,000	600	180	1,08,000
	Y	600	400	2,40,000	300	430	1,29,000	200	430	86,000
	Total	1,560	–	4,32,000	800	–	2,19,000	800	–	1,94,000
South	X	720	200	1,44,000	300	180	54,000	400	180	72,000
	Y	360	400	1,44,000	200	430	86,000	150	430	64,500
	Total	1,080	–	2,88,000	500	–	1,40,000	550		1,36,500
Total (summary)	X	1,680	200	3,36,000	800	180	1,44,000	1,000	180	1,80,000
	Y	960	400	3,84,000	500	430	2,15,000	350	430	1,50,500
	Total	2,640	–	7,20,000	1,300	–	3,59,000	1,350	–	3,30,500

Materials Purchase Budget

Sum 9

Martin Ltd plans to sell for the next year 50,000 units of a particular product. Two kinds raw materials A and B are required for manufacturing the product. Each unit of the product requires *2* units of 'A' and 3 units of B . The estimated opening balances at the commencement of the next year are

Finished product 8,000 units

Raw materials "A- 12,000 units.-B" 15,000 units

The desired closing balances at the end of the next year are

Finished product 6.000 units

Raw materials- A 3,000 units. B' 16,000 units

Draw up a raw materials purchase budget for the next year.

Material Purchase Budget (Quantitative)

Particulars		*Material A units*	*Material B units*
	Material required for production:		
	Material 'A' @ 2 units for 48,000 finished units	96,000	
	Material 'B' @ 3 units for 48,000 finished units		1,44,000
Add:	Desired closing balance of material at the end of the budget period	13,000	16,000
		1,09,000	1,60,000
Less:	Estimated opening balance of materials at the beginning of the budget period	12,000	15,000
	Materials to be purchased during the budget period	97,000	1,45,000

Working note: Estimated production:

= Expected sales + Desired closing stock – Estimated opening stock

= (50,000 + 6,000) – 8,000

= 48,000 units

Sum 10

Kalaiselvan & co., uses two materials X and Y to produce a product. For the year 2,000, they have planned to sell *2,000 units of* the product. Production department informs that after providing tor normal loss etc., 5 kgs per unit of material X and 2 kgs per unit of material Y are needed for the product

The stores incharge, after a study of his records and orders placed to the vendors provides the following details:

	***Finished* Product**	***Materials* X**	***Materials* Y**
	units	***kgs***	**kgs**
Estimated stock on 1-1-2000	400	1,800	*700*
Materials on order 1- 1-2000	--	2,000	500
Desired stock on '1-12-2000	600	*2,200*	800
Estimated materials on order on 31-12-2000		*1,800*	600

Estimated average purchase Price during 2000 Rs. 8 per kg. Rs.15 per Kg

You are required to *prepare a* purchase budget for the materials, clearly showing the total cost of estimated purchases.

Kalaiselvan & Co.

Materials Purchase Budget for the year 2000

Particulars	*Material X Kgs*		*Material Y Kgs*		*Total Kgs*
Estimated consumption of material in the year 2000 (W. N. 1)		11,000		4,400	15,400
Add: Desired closing stock at the end of the year 2000		2,200		800	3,000
Add: Materials on order on 31-12-2000 (estimated)		1,800		600	2,400
		15,000		5,800	20,800
Less: Estimated opening stock on 1-1-2000	1,800		700		2,500
Less: Materials on order on 1-1-2000 (estimated)	2,000	3,800	500	1,200	2,500 5,000
Estimated purchase (kgs) (A)		11,200		4,600	15,800
Estimated average purchase price per kg (Rs.) (B)		8		15	–
Estimated purchases (Rs.) (A × B)		89,600		69,000	1,58,600

Note: Materials on order are to be treated just like stocks.

Working notes (1) : Estimated consumption of material:

Estimated sales of finished product	2,000 units
Add: Desired closing stock	600 units
	2,600 units
Less: Estimated opening stock	400 units
Estimated production during the year 2000	2,200 units

Consumption of material 'X' at 5 kgs per unit of Finished product = 2,200 × 5

= 11,000 kgs

Consumption of material 'Y' at 2 kgs per unit of Finished product = 2,200 × 2

= 4,400 kgs.

Sum 11

A Company produces two products R and S. The following are the materials consumed for the production of 100 tons of output.

Product R		Product S	
Material	Quantity Tons	Price Rs.	Quantity Tons
A	20	10 per ton	40
B	30	5 per ton	--
C	40	8 per ton	20
D	20	20 per ton	30
E	5	50 per ton	20

During the quarter ended 31st March 1999, 500 tons of R and 400 tons of S were planned to be produced. Prepare a material consumption budget showing the total cost of material budgeted to be consumed for the quarter.

Materials Budget (Consumption)

For the quarter ending 31st March 1999

Material	*Price per ton Rs.*	*Product R*		*Product S*		*Total*	
		Qty. Tons	*Value Rs.*	*Qty. Tons*	*Value Rs.*	*Qty. Tons*	*Value Rs.*
A	10	100	1,000	160	1,600	260	2,600
B	5	150	750	–	–	150	750
C	8	200	1,600	80	640	280	2,240
D	20	100	2,000	120	2,400	220	4,400
E	50	25	1,250	80	4,000	105	5,250
		575	6,600	440	8,640	1,015	15,240

Flexible Budget:

Sum 12: Draw up a flexible budget for overhead expences on the basis of the following data and determine the overhead rates at 70%, 80",, and 90",, plant capacity

	At 70% Capacity	**At 80% Capacity**	**At** 90% **Capacity**
Variable Overheads: Indirect labour Stores including spares	—	 12,000 4,000	--
Semi-Variable Overheads: Power (30% fixed, 70% variable)	—	20,000	--
Repairs and maintenance (60% fixed, 40% variable)	—	2,000	—
Fixed Overheads: Depreciation Insurance Salaries	—	 11,000 3,000 10,000	—
Total Overheads	—	62,000	—

Estimated direct labour hours 1,24,000 hrs.

Flexible Budget for the period ----------

	At 70% Capacity Rs.	At 80% Capacity Rs.	At 90% Capacity Rs.
Variable Overheads:			
Indirect labour	10,500	12,000	13,500
Stores including spares	3,500	4,000	4,500
Semi-Variable Overheads:			
Power – Fixed	6,000	6,000	6,000
Variable	12,250	14,000	15,750
Repairs and Maintenance			
Fixed	1,200	1,200	1,200
Variable	700	800	900
Fixed Overheads:			
Depreciation	11,000	11,000	11,000
Insurance	3,000	3,000	3,000
Salaries	10,000	10,000	10,000
Total Overheads	58,150	62,000	65,850
Estimated direct labour hours	1,08,500	1,24,000	1,39,500
Direct labour hour rate	Re. 0.536	Rs. 0.500	Rs. 0.472

Working:

Direct labour rates have been computed as follows:

At 70% capacity = $\frac{\text{Rs. } 58,150}{1,08,500 \text{ hrs.}}$ = Re. 0.536

At 80% capacity = $\frac{\text{Rs. } 62,000}{1,24,000 \text{ hrs.}}$ = Re. 0.500

At 90% capacity = $\frac{\text{Rs. } 65,850}{1,39,500 \text{ hrs.}}$ = Re. 0.472

Sum 13 : Draw up of flexible budget for production at 75% and 100%capacity on the basis of the following data for a 50% activity.

	Per unit Rs.
Materials	100
I about	50
Variable expenses (direct)	10
Administrative expenses (50% fixed)	40,000
Selling and distribution expenses (60% fixed)	50,000 Present production (50% activity) 1,000units

Flexible Budget

Particulars	Capacity Levels					
	50% 1,000 units		75% 1,500 units		100% 2,000 units	
	Per unit Rs. P.	Total Rs.	Per unit Rs. P	Total Rs.	Per unit Rs. P	Total Rs.
Materials	100	1,00,000	100.00	1,50,000	100	2,00,000
Labour	50	50,000	50.00	75,000	50	1,00,000
Variable expenses	10	10,000	10.00	15,000	10	20,000
Prime cost	160	1,60,000	160.00	2,40,000	160	3,20,000
Administration expenses:						
Variable (50%)	20	20,000	20.00	30,000	20	40,000
Fixed (50%)	20	20,000	13.33	20,000	10	20,000
Cost of production	200	2,00,000	193.33	2,90,000	190	3,80,000
Selling and Distribution expenses:						
Variable (40%)	20	20,000	20.00	30,000	20	40,000
Fixed (60%)	30	30,000	20.00	30,000	15	30,000
Total cost	250	2,50,000	233.33	3,50,000	225	4,50,000

Note: (1) Variable costs per unit remain constant at all the capacity levels. Fixed costs remain constant in total at all the capacity levels.

(2) The effect of constant fixed cost is that the cost per unit goes on decreasing with every increase in capacity level. However, beyond 100% capacity level, fixed costs also may change.

Sum 14: The expenses for budgeted production of 10,000 units in a factory are furnished below:

	Per Unit Rs
Material	70
Labour	25
Variable Overheads	20
Fixed Overheads (Rs. 1,00,000)	10
Variable Expenses (Direct)	5
Selling Expenses (10% Fixed)	13
Distribution Expenses (20% Fixed)	7
Administration Expenses	5
Total Cost per unit	**155**

Prepare a budget for production of: (a) 8,000 units (b) 6,000 units (c) indicate cost per unit at both the levels. Assume that administration expenses are fixed for all levels of production.

Solution:

Flexible Budget

	10,000 Units		8,000 Units		6,000 Units	
	Per Unit	Total Amount	Per Unit	Total Amount	Per Unit	Total Amount
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Production Expenses:						
Materials	70.00	7,00,000	70.00	5,60,000	70.00	4,20,000
Labour	25.00	2,50,000	25.00	2,00,000	25.00	1,50,000
Overheads	20.00	2,00,000	20.00	1,60,000	20.00	1,20,000
Direct variable expenses	5.00	50,000	5.00	40,000	5.00	30,000
Fixed Overheads: (Rs. 1,00,000)	10.00	1,00,000	12.50	1,00,000	16.667	1,00,000
Selling Expenses:						
Fixed	1.30	13,000	1.625	13,000	2.167	13,000
Variable	11.70	1,17,000	11.700	93,600	11.700	70,200
Distribution Expenses:						
Fixed	1.40	14,000	1.750	14,000	2.334	14,000
Variable	5.60	56,000	5.600	44,800	5.600	33,600
Administration Expenses	5.00	50,000	6.250	50,000	8.333	50,000
	155.00	15,50,000	159.425	12,75,400	166.801	10,00,800

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Reference:

- Dr.S.N.Maheswari, "Management Accounting",
  Sultan Chand & Sons, New Delhi.
- T.S. Reddy, Y. Hari Prasad Reddy, "Management Accounting",
  Margham Publications, Chennai.
- Dr.R.Ramachandran, Dr.R.Srinivasan, "Management Accounting",
  Sriram Publications, Tiruchirappalli.
- Net Sources.