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CA IPC THEORY NOTES OF COST ACCOUNTING & FINANCIAL MANAGEMENT

WEIGHTAGE 32 MARKS

“KOI PAGAL HI HOGA JO ISE IGNORE KAREGA”

By

CA AMIT TALDA

(For Private Circulation Only)

Note: These notes do not claim 100% coverage. So few blank pages have been attached to cover some topics that may not be covered in this book.

TALDA LEARNING CENTRE

Building Conceptions.....



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-----ABOUT THE FACULTY-----

Amit Talda; B.com; CA

- First attempt Chartered Accountant at the age of 21.
- Worked in **ICICI Bank, Corporate Office, Mumbai** for around 15 months as a Risk Analyst.
- Secured 100 marks in Accountancy & 92 marks in Economics in HSSC.
- Highest marks in Amravati in CPT (May 2007).
- 48th Rank in PCC (June 2009) (*Secured 93 marks in Advanced Accounts*)
- Attended 6 week residential training conducted by ICAI, Centre of Excellence, Hyderabad.
- Currently in Practice having works related to Accounting, Income tax Planning, Project Financing, Legal Advisory, etc.
- Teaching Experience of more than 2 years.

THEORY OF COST ACCOUNTING

Basic Concepts

Objectives Of Cost Accounting

The main objectives of Cost Accounting are as follows :

Ascertainment Of Cost	There are two methods of ascertaining costs, viz., Post Costing and Continuous Costing. <u>Post Costing</u> means, analysis of actual information as recorded in financial books. It is accurate and is useful in the case of “Cost plus Contracts” where price is to be determined finally on the basis of actual cost. <u>Continuous Costing</u>, aims at collecting information about cost as and when the activity takes place so that as soon as a job is completed the cost of completion would be known. This involves careful estimates being prepared of overheads. In order to be of any use, costing must be a continuous process.
Determination Of Selling Price	Though the selling price of a product is influenced by market conditions, which are beyond the control of any business, it is still possible to determine the selling price within the market constraints. For this purpose, it is necessary to rely upon cost data supplied by Cost Accountants.
Cost Control And Cost Reduction	To exercise cost control, broadly speaking the following steps should be observed: (i) Determine clearly the objective, i.e., pre-determine the desired results; (ii) Measure the actual performance; (iii) Investigate into the causes of failure to perform according to plan; and (iv) Institute corrective action.
Cost Reduction	The three-fold assumptions involved in the definition of cost reduction may be summarized as under : (a) There is a saving in unit cost. (b) Such saving is of permanent nature. (c) The utility and quality of the goods and services remain unaffected, if not improved.
Ascertaining The Profit Of Each Activity	The profit of any activity can be ascertained by matching cost with the revenue of that activity. The purpose under this step is to determine costing profit or loss of any activity on an objective basis.
Assisting Management In Decision Making	Decision making is defined as a process of selecting a course of action out of two or more alternative courses. For making a choice between different courses of action, it is necessary to make a comparison of the outcomes, which may be arrived under different alternatives. Such a comparison has only been made possible with the help of Cost Accounting information.

ADVANTAGES OF A COST ACCOUNTING SYSTEM :

Important advantages of a Cost Accounting System may be listed as below:

1. Identify Unprofitable Activities or Products: A good Cost Accounting System helps in identifying unprofitable activities, losses or inefficiencies in any form.
2. Reduces Cost: The application of cost reduction techniques, operations research techniques and value analysis technique, helps in achieving the objective of economy in concern's operations.
3. Identification of Root Causes: Cost Accounting is useful for identifying the exact causes for decrease or increase in the profit/loss of the business. It also helps in identifying unprofitable products or product lines so that these may be eliminated or alternative measures may be taken.
4. Helps in Decision Making: It provides information and data to the management to serve as guides in making decisions involving financial considerations. Guidance may also be given by the Cost Accountant on a host of problems such as, whether to purchase or manufacture a given component, whether to accept orders below cost, which machine to purchase when a number of choices are available.
5. Helps in Price Fixation: Cost Accounting is quite useful for price fixation. It serves as a guide to test the adequacy of selling prices. The price determined may be useful for preparing estimates or filling tenders.
6. Cost Control: The use of cost accounting technique viz., variance analysis, points out the deviations from the pre-determined level and thus demands suitable action to eliminate such deviations in future. Cost comparison helps in cost control. Such a comparison may be made from period to period by using the figures in respect of the same unit of firms or of several units in an industry by employing uniform costing and inter-firm comparison methods. Comparison may be made in respect of costs of jobs, processes or cost centres.
7. Helps in Compliances: A system of costing provides figures for the use of Government, Wage Tribunals and other bodies for dealing with a variety of problems. Some such problems include price fixation, price control, tariff protection, wage level fixation, etc.
8. Identification of Idle Capacity Cost: The cost of idle capacity can be easily worked out, when a concern is not working to full capacity.

Discuss the essential of a good costing accounting system?

The essential features, which a good Cost Accounting System should possess, are as follows:

- (i) Cost Accounting System should be **TAILOR-MADE**, practical, simple and capable of meeting the requirements of a business concern.
- (ii) The data to be used by the Cost Accounting System should be **ACCURATE**; otherwise it may distort the output of the system.
- (iii) Necessary **COOPERATION** and participation of executives from various departments of the concern is essential for developing a good system of Cost Accounting.
- (iv) The Cost of installing and operating the system should **JUSTIFY THE RESULTS**.

(v) The system of costing should not sacrifice the utility by introducing meticulous and unnecessary details.

(vi) A **CAREFULLY PHASED PROGRAMME** should be prepared by using network analysis for the introduction of the system.

(vii) Management should have a faith in the Costing System and should also provide a helping hand for its development and success.

You have been asked to install a costing system in a manufacturing company. What practical difficulties will you expect and how will you propose to overcome the same?

The practical difficulties with which a Cost Accountant is usually confronted with while installing a costing system in a manufacturing company are as follows:

(i) Lack of top management support: Installation of a costing system does not receive the support of top management. They consider it as interference in their work. They believe that such a system will involve additional paperwork. They also have a misconception in their minds that the system is meant for keeping a check on their activities.

(ii) Resistance from cost accounting departmental staff: The staff resists because of fear of losing their jobs and importance after the implementation of the new system.

(iii) Non-cooperation from user departments: The foremen, supervisor and other staff members may not cooperate in providing requisite data, as this would not only add to their responsibilities but will also increase paper work of the entire team as well.

(iv) Shortage of trained staff: Since cost accounting system's installation involves specialized work, there may be a shortage of trained staff.

To overcome these practical difficulties, necessary steps required are:

- To sell the idea to top management – To convince them of the utility of the system.
- Resistance and non-cooperation can be overcome by behavioral approach. To deal with the staff concerned effectively. Proper training should be given to the staff at each level.
- Regular meetings should be held with the cost accounting staff, user departments, staff and top management to clarify their doubts / misgivings.

CLASSIFICATION OF COST AS PER NATURE:

Cost Object – Anything for which a separate measurement of cost is desired. Examples of cost objects include a product, a service, a project, a customer, a brand category, an activity, a department, a programme.

Cost Unit - It is a unit of product, service or time (or combination of these) in relation to which costs may be ascertained or expressed. We may for instance determine the cost per tonne of steel, per tonne kilometre of a transport service or cost per machine hour. Sometime, a single order or a contract constitutes a cost unit. A batch which consists of a group of identical items and maintains its identity through one or more stages of production may also be considered as a cost unit.

Cost units are usually the units of physical measurement like number, weight, area, volume, length, time and value. A few typical examples of cost units are given below :

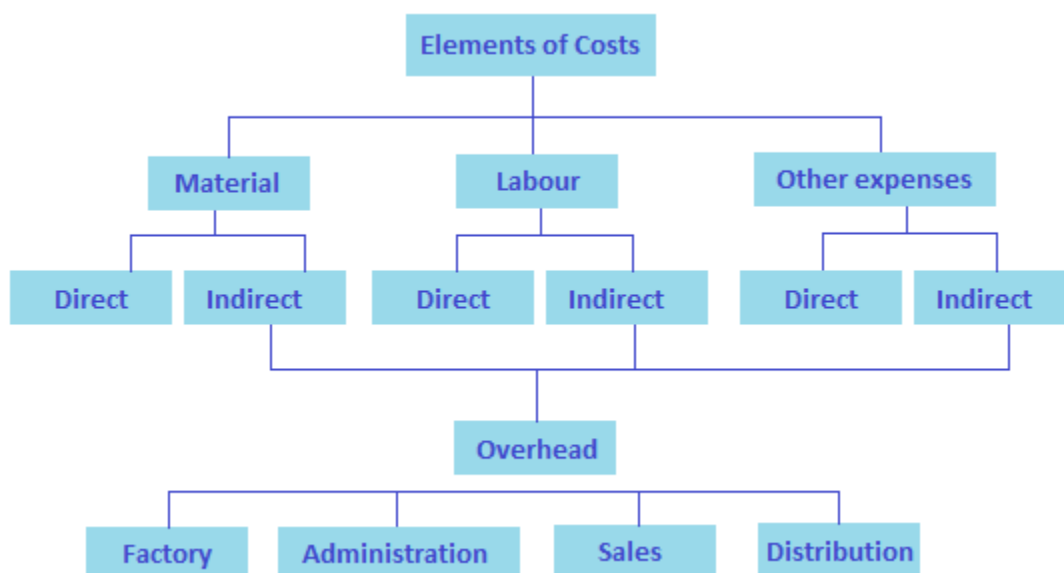
Industry or Product	Cost Unit Basis
Automobile	Number
Cement	Tonne/per bag
Chemicals	Litre, gallon, kilogram
Power	Kilo Watt Per Hour
Steel	Tonne
Transport	Passenger Km

Traceability of a object:

Direct Costs – Costs that are related to the cost object and can be traced in an economically feasible way.

Indirect Costs – Costs that are related to the cost object but cannot be traced to it in an economically feasible way.

Elements of cost:



- (i) **Direct Materials** : Materials which are present in the finished product(cost object) or can be economically identified in the product are called direct materials. For example, cloth in dress making; materials purchased for a specific job etc.
- (ii) **Direct Labour** : Labour which can be economically identified or attributed wholly to a cost object is called direct labour. For example, labour engaged on the actual production of the product or in carrying out the necessary operations for converting the raw materials into finished product.
- (iii) **Direct Expenses** : It includes all expenses other than direct material or direct labour which are specially incurred for a particular cost object and can be identified in an economically feasible way.
- (iv) **Indirect Materials** : Materials which do not normally form part of the finished product (cost object) are known as indirect materials. These are —

Stores used for maintaining machines and buildings (lubricants, cotton waste, bricks etc.)

Stores used by service departments like power house, boiler house, canteen etc.

- (v) **Indirect Labour** : Labour costs which cannot be allocated but can be apportioned to or absorbed by cost units or cost centres is known as indirect labour. Examples of indirect labour includes - charge hands and supervisors; maintenance workers; etc.
- (vi) **Indirect expenses** : Expenses other than direct expenses are known as indirect expenses. Factory rent and rates, insurance of plant and machinery, power, light, heating, repairing, telephone etc., are some examples of indirect expenses.
- (vii) **Overheads** : It is the aggregate of indirect material costs, indirect labour costs and indirect expenses. The main groups into which overheads may be subdivided are the following :
- Production or Works overheads
 - Administration overheads
 - Selling overheads
 - Distribution overheads

Cash Outflow:

Explicit Costs –

- Other name: These costs are also known as “Out of pocket costs” and
- Meaning: Refer to costs involving immediate payment of cash.
- Examples: Salaries, wages, postage and telegram, printing and stationery, interest on loan etc. are some examples of explicit costs involving immediate cash payment.

Implicit Costs –

- These costs do not involve any immediate cash payment.
- They are not recorded in the books of account.
- They are also known as “Economic Costs”.

Control:

Controllable:

- These are the costs which can be influenced by the action of a specified person in an organisation.
- In every organisation, there are a number of departments which are called responsibility centres, each under the charge of a specified level of management.
- Cost incurred by these responsibility centres are influenced by the action of the incharge of the responsibility centre.
- Thus, any cost that an organizational unit has the authority to incur may be identified as controllable cost.

Non-Controllable Cost:

- These are the cost which cannot be influenced by the action of a specified member of an undertaking.
- For example, expenditure incurred by “Tool Room” is controllable by the Tool Room Manager but the share of Tool Room Expenditure, which is apportioned to the Machine Shop cannot be controlled by the manager of the Machine Shop.

- However, the distinction between the controllable and non-controllable cost is not very sharp and is sometimes left to individual judgment to specify a cost as controllable or non-controllable in relation to a particular individual manager.

Cost Allocation - It is defined as the assignment of the indirect costs to the chosen cost object.

Cost Absorption –

- Definition: It is defined as the process of absorbing all indirect costs allocated to or apportioned over a particular cost centre or production department by the units produced.
- Hence, while allocating, the relevant cost objects would be the concerned cost centre or the concerned department, while, the process of absorption would consider the units produced as the relevant cost object.
- For example, the overhead costs of a lathe centre may be absorbed by using a rate per lathe hour.
- Cost absorption can take place only after cost allocation.
- In other words, the overhead costs are either allocated or apportioned over different cost centres and afterwards they are absorbed on equitable basis by the output of the same cost centres.

Responsibility Centre –

- It is defined as an activity centre of a business organisation entrusted with a special task.
- Under modern budgeting and control, financial executives tend to develop responsibility centres for the purpose of control. Responsibility centres can broadly be classified into three categories.
- They are :
 - (a) Cost Centres ;
 - (b) Profit Centres ; and
 - (c) Investment Centres ;

Cost Centre –

- Definition: It is defined as a location, person or an item of equipment (or group of these) for which cost may be ascertained and used for the purpose of Cost Control.
- Cost Centres are of two types, viz., Personal and Impersonal.
- A Personal cost centre consists of a person or group of persons and an Impersonal cost centre consists of a location or an item of equipment (or group of these).
- In a manufacturing concern there are two main types of Cost Centres as indicated below :
 - (i) Production Cost Centre: It is a cost centre where raw material is handled for conversion into finished product. Here, both direct and indirect expenses are incurred. Machine shops, welding shops and assembly shops are examples of production Cost Centres.
 - (ii) Service Cost Centre: It is a cost centre which serves as an ancillary unit to a production cost centre. Power house, gas production shop, material service centres, plant maintenance centres are examples of service cost centres.

Profit Centres - Centres which have the responsibility of generating and maximizing profits are called Profit Centres.

Investment Centres - Those centres which are concerned with earning an adequate return on investment are called Investment Centres.

Association with the product: Product Cost vs Period Cost

Product Costs –

- These are the costs which are associated with the purchase and sale of goods (in the case of merchandise inventory).
- In the production scenario, such costs are associated with the acquisition and conversion of materials and all other manufacturing inputs into finished product for sale.
- Hence, under marginal costing, variable manufacturing costs and under absorption costing, total manufacturing costs (variable and fixed) constitute inventoriable or product costs.
- Under the Indian GAAP, product costs will be those costs which are allowed to be a part of the value of inventory as per Accounting Standard 2, issued by the Council of the Institute of Chartered Accountants of India.

Period Costs - These are the costs, which are not assigned to the products but are charged as expenses against the revenue of the period in which they are incurred. All non-manufacturing costs such as general and administrative expenses, selling and distribution expenses are recognised as period costs.

Analytical and Decision Making Purpose:

Opportunity Cost - This cost refers to the value of sacrifice made or benefit of opportunity foregone in accepting an alternative course of action. For example, a firm financing its expansion plan by withdrawing money from its bank deposits. In such a case the loss of interest on the bank deposit is the opportunity cost for carrying out the expansion plan.

Out-Of-Pocket Cost - It is that portion of total cost, which involves cash outflow. This cost concept is a short-run concept and is used in decisions relating to fixation of selling price in recession, make or buy, etc. Out-of-pocket costs can be avoided or saved if a particular proposal under consideration is not accepted.

Shut Down Costs - Those costs, which continue to be, incurred even when a plant is temporarily shutdown, e.g. rent, rates, depreciation, etc. These costs cannot be eliminated with the closure of the plant. In other words, all fixed costs, which cannot be avoided during the temporary closure of a plant, will be known as shut down costs.

Sunk Costs - Historical costs incurred in the past are known as sunk costs. They play no role in decision making in the current period. For example, in the case of a decision relating to the replacement of a machine, the written down value of the existing machine is a sunk cost and therefore, not considered.

Discretionary Costs - Such costs are not tied to a clear cause and effect relationship between inputs and outputs. They usually arise from periodic decisions regarding the maximum outlay to be incurred. Examples include advertising, public relations, executive training etc.

Standard Cost - A pre-determined cost, which is calculated from managements 'expected standard of efficient operation' and the relevant necessary expenditure. It may be used as a basis for price fixing and for cost control through variance analysis.

Marginal Cost - The amount at any given volume of output by which aggregate costs are

changed if the volume of output is increased or decreased by one unit.

Note : In this context a unit may be a single article, an order, a stage of production, a process of a department. It relates to change in output in the particular circumstances under consideration within the capacity of the concerned organisation.

Pre-production Costs: These costs form the part of development cost, incurred in making a trial production run, preliminary to formal production. These costs are incurred when a new factory is in the process of establishment or a new project is undertaken or a new product line or product is taken up, but there is no established or formal production to which such costs may be charged. These costs are normally treated as deferred revenue expenditure (except the portion which has been capitalised) and charged to the costs of future production.

Research and Development Costs: Research costs are the costs incurred for the discovery of new ideas or processes by experiment or otherwise and for using the results of such experimentation on a commercial basis. Research costs are defined as the costs of searching for new or improved products, new applications of materials, or improved methods, processes, systems or services.

Development costs are the costs of the process which begins with the implementation of the decision to produce a new or improved product or to employ a new or improved method and ends with the commencement of formal production of that product by that method.

Training Costs:

- Examples: These costs comprise of – wages and salaries of the trainees or learners, pay and allowances of the training and teaching staff, payment of fees etc, for training or for attending courses of studies sponsored by outside agencies and cost of materials, tools and equipments used for training.
- Costs incurred for running the training department, the losses arising due to the initial lower production, extra spoilage etc. occurring while providing training facilities to the new recruits.
- All these costs are booked under separate standing order numbers for the various functions.
- Usually there is a service cost centre, known as the Training Section, to which all the training costs are allocated. The total cost of training section is thereafter apportioned to production centers.

Cost classification based on variability

Fixed cost – These are costs, which do not change in total despite changes of a cost driver. A fixed cost is fixed only in relation to a given relevant range of the cost driver and a given time span. Rent, insurance, depreciation of factory building and equipment are examples of fixed costs where the final product produced is the cost object.

Variable costs – These are costs which change in total in proportion to changes of cost driver. Direct material, direct labour are examples of variable costs, in cases where the final product produced is the cost object.

Semi-variable costs – These are partly fixed and partly variable in relation to output e.g. telephone and electricity bill.

TYPES OF COSTING :

For ascertaining cost, following types of costing are usually used.

- (i) **Marginal Costing:** It is defined as the ascertainment of marginal cost by differentiating between fixed and variable costs. It is used to ascertain effect of changes in volume or type of output on profit.
- (ii) **Standard Costing And Variance Analysis:** It is the name given to the technique whereby standard costs are pre-determined and subsequently compared with the recorded actual costs. It is thus a technique of cost ascertainment and cost control. This technique may be used in conjunction with any method of costing. However, it is especially suitable where the manufacturing method involves production of standardised goods of repetitive nature.
- (iii) **Absorption Costing:** It is the practice of charging all costs, both variable and fixed to operations, processes or products. This differs from marginal costing where fixed costs are excluded.

METHODS OF COSTING:

Different industries follow different methods of costing because of the differences in the nature of their work. The various methods of costing are as follows:

Job Costing	In this case the cost of each job is ascertained separately. It is suitable in all cases where work is undertaken on receiving a customer's order like a printing press, motor workshop, etc. In case a factory produces a certain quantity of a part at a time, say 5,000 rims of bicycle, the cost can be ascertained like that of a job.
Batch Costing	It is the extension of job costing. A batch may represent a number of small orders passed through the factory in batch. Each batch here is treated as a unit of cost and thus separately costed. Here cost per unit is determined by dividing the cost of the batch by the number of units produced in the batch
Contract Costing	Here the cost of each contract is ascertained separately. It is suitable for firms engaged in the construction of bridges, roads, buildings etc.
Process Costing	Here the cost of completing each stage of work is ascertained, like cost of making pulp and cost of making paper from pulp. In mechanical operations, the cost of each operation may be ascertained separately ; the name given is operation costing.
Operating Costing	It is used in the case of concerns rendering services like transport, supply of water, retail trade etc.
Multiple Costing	It is a combination of two or more methods of costing outlined above. Suppose a firm manufactures bicycles including its components; the parts will be costed by the system of job or batch costing but the cost of assembling the bicycle will be computed by the Single or

	output costing method. The whole system of costing is known as multiple costing.
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DIRECT EXPENSES :

Meaning of Direct Expenses : Direct Expenses are also termed as 'Chargeable expenses'. These are the expenses which can be allocated directly to a cost object. Direct expenses are defined as 'costs other than material and wages which are incurred for a specific product or saleable services'.

Examples of direct expenses are :

- (i) Hire charges of special machinery or plant for a particular production order or job.
- (ii) Payment of royalties.
- (iii) Cost of special moulds, designs and patterns.
- (iv) Travelling and conveyance expenses incurred in connection with a particular job.
- (v) Sub-contracting expenses or outside work costs if jobs are sent out for special processing.

Characteristics of Direct Expenses :

- (i) Direct expenses are those expenses, which are other than the direct materials and direct labour.
- (ii) These expenses are either allocated or charged completely to cost centres or work orders.
- (iii) These expenses are included in prime cost of a product.

RELATIONSHIP BETWEEN COST ACCOUNTING, FINANCIAL ACCOUNTING, MANAGEMENT ACCOUNTING AND FINANCIAL MANAGEMENT :

- Cost Accounting is a branch of accounting, which has been developed because of the limitations of Financial Accounting from the point of view of management control and internal reporting.
- Financial accounting performs admirably, the function of portraying a true and fair overall picture of the results or activities carried on by an enterprise during a period and its financial position at the end of the year.
- Also, on the basis of financial accounting, effective control can be exercised on the property and assets of the enterprise to ensure that they are not misused or misappropriated.
- To that extent financial accounting helps to assess the overall progress of a concern, its strength and weaknesses by providing the figures relating to several previous years.
- Data provided by Cost and Financial Accounting is further used for the management of all processes associated with the efficient acquisition and deployment of short, medium and long term financial resources. Such a process of management is known as Financial Management.
- The objective of Financial Management is to maximise the wealth of shareholders by taking effective Investment, Financing and Dividend decisions. Investment decisions relate to the effective deployment of scarce resources in terms of funds while the Financing decisions are concerned with acquiring optimum finance for attaining financial objectives.
- The last and very important 'Dividend decision' relates to the determination of the amount and frequency of cash which can be paid out of profits to shareholders.

- On the other hand, Management Accounting refers to managerial processes and technologies that are focused on adding value to organisations by attaining the effective use of resources, in dynamic and competitive contexts.
- Hence, Management Accounting is a distinctive form of resource management which facilitates management's 'decision making' by producing information for managers within an organisation.

Cost Control Vs. Cost Reduction:

Basis	Cost Control	Cost Reduction
Meaning	Cost control is the guidance and regulation by executive action of the cost of operating an undertaking.	Cost reduction is the achievement of real and permanent reduction in the unit cost of goods and services without impairing their suitability.
Emphasis	It emphasizes on past performances and variance analysis	It emphasizes on present and future performance without considering the past performance.
Approach	It is a conservative approach which stresses on the conformity to the set norms.	It is a dynamic approach where in every function is analysed in a view of its contribution
Focus	It is a short term review with focus on reducing cost in a particular period.	It seeks to reduce the unit cost on a permanent basis on a systematic approach.
Nature of function	It is a corrective function	It is a preventive function

State the types of cost in the following cases:

- Interest paid on own capital not involving any cash outflow.
- Withdrawing money from bank deposit for the purpose of purchasing new machine for expansion purpose.
- Rent paid for the factory building which is temporarily closed
- Cost associated with the acquisition and conversion of material into finished product.

Answer

Type of costs

- Imputed Cost
- Opportunity Cost
- Shut Down Cost
- Product Cost

Method of Costing and Cost Unit for various Industries/Activities

Industry (I) Service (S) Activity (A)		Method of Costing	Unit of Cost
1. Advertising	S	Job	Per Job
2. Automobile	I	Multiple	Per Number
3. Bicycles	I	Multiple	Per Unit or Per Batch
4. Breweries	I	Process	Per Barrel
5. Brick Works	I	Single/Unit	Per 1,000 Bricks
6. Bridge Construction	I	Contract	Per Contract
7. Cement	I	Unit	Per Tonne or Per Bag
8. Chemicals	I	Process	Per Litre, Gallon, Kilogram, Tonne, etc.
9. Coal Mining	I	Single/Unit	Per Tonne
10. Credit Control (in Bank, Sales Dept, etc.)	A	NA	Per Account maintained
11. Education Services	S	Operating	Per Course, Per Student, etc.
12. Electronic Items	I	Multiple	Per Unit or Per Batch
13. Engineering Works	I	Contract	Per Job, Per Contract, etc.
14. Furniture	I	Multiple	Per Unit
15. Hospital/Nursing Home	S	Operating	Per Patient-Day or Room-Day
16. Hotel/Catering	S	Operating	Per Guest-Day or Room-Day, Per Meal
17. Interior Decoration	S	Job	Per Job
18. Oil Refining	I	Process	Per Barrel, Per Tonne, Per Litre, etc.
19. Personnel Administration	A	NA	Per Personnel Record, Per Employee
20. Pharmaceuticals	I	Batch/Unit	Per Unit/Box
21. Professional Services	S	Operating	Per Chargeable Hour, Per Job, etc.
22. Power/Electricity	I	Operating	Per Kilo-Watt Hour
23. Road Transport	S	Operating	Per Tonne-Km/Passenger-Km
24. Selling	A	NA	Per Customer Call, Per Order booked
25. Ship Building	I	Contract	Per Ship
26. Soap	I	Process	Per Unit
27. Steel	I	Process	Per Tonne
28. Storage and Handling of Materials	A	NA	Per Stores Requisition, Per Issue, etc.
29. Sugar Company having own sugarcane fields	I	Process	Per Tonne or Per Quintal
30. Toy Making	I	Batch	Per Batch
31. Transport	S	Operating	Per Passenger Kilometer, Tonne-Km

FORMAT OF COST SHEET

Particulars	Rs.
Add: Opening Stock of Raw Materials Purchases (including Carriage Inwards, Transit Insurance etc.) ----- ----- Less: Closing Stock of Raw Materials -----	
Add: Direct Materials Consumed/Raw Materials Consumed Add: Direct Labour Add: Direct Expenses	
PRIME COST Add: Factory Overheads (also called Works OH/Manufacturing OH/Production OH) Add: Opening Stock of Work-in-Progress Less: Closing Stock of Work-in-Progress	
FACTORY COST/WORKS COST Add: Administration Overheads (also called Office OH) General OH/Management OH Research and Development OH (apportioned) (if any)	
COST OF PRODUCTION Add: Opening Stock of Finished Goods	
COST OF GOODS AVAILABLE FOR SALE Less: Closing Stock of Finished Goods	
COST OF GOODS SOLD Add: Selling and Distribution Overheads (also called Marketing OH)	
COST OF SALES Add: Profit/Loss (Balancing Figure)	
SALES	

Material Cost

Techniques of Inventory Control:

1. Min-Max Plan:

- It is one of the oldest methods of inventory control.
- Under this plan the analyst lays down a maximum and minimum for each stock item keeping in view its usage, requirements and margin of safety required to minimum the risks of stock outs.
- The minimum level establishes the reorder point and order is placed for that quantity of material which will bring it to the maximum level.
- The method is very simple and based upon the premise that minimum and maximum quantity limits for different items can fairly be well defined and established.
- Considerations like economic order quantity and identification of high value and critical items of stock for special management attention are not cared for under this plan.

2. Two Bin Systems:

- The basic procedure used under this system is that for each item of stock, two piles, bundles or bins are maintained.
- The first bin stocks that quantity of inventory which is sufficient to meet its usage during the period that elapses between the receipt of an order and the placing of next order.
- The second bin contains the safety stock and also the normal amount used from order to delivery date.
- The moment stock contained in the first bin is exhausted and the second bin is tapped, a requisition for new supply is prepared and submitted to the purchasing department.

3. Order Cycling System:

- In order cycling system, quantities in hand of each item or class of stock is reviewed periodically say 30, 60, 90 days, etc.
- if in the course of a scheduled periodic review it is observed that the stock level of a given item will not be sufficient till the next scheduled review keeping in view its probable rate of depletion, an order is placed to replenish its supply.
- Review period will vary from firm to firm and also among different materials in the same firm.
- Critical items of stock usually require a short review cycle.
- Order for replenishing a given stock item, is placed to bring it to some desired level which is often expressed in relation to number of days or week's supply,

4. ABC Analysis:

- With the numerous parts and materials that enter into each and every industrial product, inventory control lends itself, first and foremost, to a problem of analysis. Such analytical approach is popularly known as ABC Analysis (Always better Control), which is believed to have originated in the General Electric Company of America.
- The ABC plan is based upon segregation of material for selection of control.
- It measures the money value i.e cost significance of each material item in relation to total cost and inventory value.

- The logic behind this kind of analysis is that the management should study each item of stock in terms of its usage, lead time, technical or other problems and its relative money value in the total investment in inventories.
- Critical i.e high value items deserve very close attention, and low value items need to be devoted minimum expense and effort in the task of controlling inventories.

Under ABC analysis, the different items of stock may be ranked in order of their average inventory investment or on the basis of their annual rupee usage. The important steps involved in segregating materials or inventory control are:

- Find out future use of each item of stock in terms of physical quantities for the review forecast period.
- Determine the price per unit of each item.
- Determine the total project cost of each item by multiplying its expected units to be used by the price per unit of such item.
- Beginning with the item with the highest total cost, arrange different items in order of their total cost as computed under step (iii) above
- Express the units of each item as a percentage of total cost of all items
- Compute the total cost of each item as a percentage of total cost of all items.

If it is convenient different items may be classified into only three categories and labeled as A, B and C respectively depending upon whether they are high value items, middle value items and low value items. If need be, percentage of different items may be plotted on a chart.

- Fixation of various levels:** Certain stock levels are fixed up for every items or stores so that the stock and purchases can be efficiently controlled. These are:
 - Maximum Level: this represents the maximum quantity above which stock should not be held at any time.
 - Minimum Level: This represents the minimum quantity of stock that should be held at all times.
 - Danger Level: Normal issue of stock are usually stopped at this level and made only under specific instructions.
 - Ordering level: it is the level at which indents should be placed for replenishing stock.
 - Ordering Quantity: it is the quantity that is ordered.

ECONOMIC ORDER QUANTITY

- The basic problems of inventory control are two viz what quantity of an item should be ordered at a time and when should an order be placed.
- While deciding economic order quantity, the efforts are directed to ascertain the ideal order size.
- While deciding the ideal order size, factors such as Inventory carrying cost and the ordering cost associated with the placement of purchase order are to be considered; the total of both has to be minimized.
- The inventory carrying charges include the interest on the capital invested in the stores of materials, rent for the storage space, salaries and wages of the storekeeper department, any loss due to pilferage and deterioration, stores insurance charges, stationery, etc used by the stores, taxes on inventories, etc.
- Ordering cost may include rent for the space used by the purchasing department, the salaries and wages of officers and staff in the purchasing department, the depreciation on the equipment and

	furniture used by the department, postage, telegraph charges and telephone bills, the stationery and other consumables required by the purchase department, any travelling expenditure incurred and the cost of inspection, etc on receipt of materials. - The optimum order quantity i.e the quantity for which the cost of holding plus the cost of purchasing is the minimum is called as Economic Order Quantity and is calculated as under: EOQ (Economic Order Quantity - Wilson's Formula) = $\sqrt{2AO/C}$ Where: A = Annual usage units O = Ordering cost per unit C = Annual carrying cost of one unit i.e. Carrying cost % * Carrying cost of unit - While deciding the question as to what should be the economic ordering quantity one has to ensure that the cost incurred should be minimum. An ideal order size, therefore, is at the quantity where the cost is minimum i.e. Cost of holding the stock and ordering cost intersect each other.
USE OF PERPETUAL INVENTORY SYSTEM AND CONTINUOUS VERIFICATION:	- The perpetual inventory system records changes in materials, WIP on a daily basis. Hence, managerial control and preparation of interim financial statement is easier. - Perpetual inventory derived its name because it indicates the amount of stock in hand at all times. - It facilitates verification of stock at any time and helps to authenticate the correctness of stock records. - The two main functions of perpetual inventory are: (i) It records the quantity and value of stock in hand (ii) There is continuous verification of physical stock - Chartered Institute of Management Accountants, London has defined it as "The recording as they occur of receipts, issues and the resulting balances of individual items of stock in either quantity or quantity and value." - A perpetual inventory system is usually checked by a programme of continuous stock taking and the two terms are sometimes loosely considered synonymous. - Perpetual inventory means the system of records, whereas continuous stock taking means the physical checking of those records with actual stocks. - The perpetual inventory method has the following advantages: (a) The inventory of various items can be easily ascertained. Hence, profit and loss account and balance sheet can be easily prepared. (b) Information regarding material on hand eliminates delays and stoppage in production. (c) The investment in stock can be reduced to the minimum keeping in view the operational requirements. (d) Because of internal check, the activities of various department are checked. Hence, the stores records are reliable. (e) Production need not be stopped when stock taking is carried out.

	(f) These records give the cost of materials. Hence, management can exercise control over costs. (g) Discrepancies and errors are promptly discovered and remedial action can be taken to prevent their re-occurrence in the future. (h) This method has a moral effect on the staff, makes them disciplined and careful and acts as a check against dishonest actions. (i) Loss of interest on capital invested in stock, loss through deterioration, obsolescence can be avoided. (j) Stock figures are available for insurance purposes. (k) It reveals the existence of surplus, dormant, obsolete and slow moving material and hence, remedial action can be taken against them.												
CONTINUOUS PHYSICAL STOCK VERIFICATION:	(i) The stores accounts reveal what the balances should be and a physical verification reveals the actual stock position. Under this system of verification, the total number of man-days available for verification is calculated. The items to be verified per man-day is selected by classifying the various items into groups depending upon the time required. The stock verification staff plan the programme and divide the work among themselves. The plan is such that all the items are verified in the year. (ii) There is an element of surprise and sometimes the stock verifier knows of the items to be verified only on the actual date of verification. Stock not recorded should not be mixed up with the stock. After counting or weighting the results are recorded.												
BIN CARD VS STORES LEDGER	<table border="1"> <thead> <tr> <th>Bin Card</th><th>Stores Ledger</th></tr> </thead> <tbody> <tr> <td>It is a quantity record</td><td>It is a record of quantity and value</td></tr> <tr> <td>It is kept inside the stores.</td><td>It is kept outside the stores</td></tr> <tr> <td>It is maintained by the storekeeper</td><td>It is maintained by accounts department</td></tr> <tr> <td>The postings are done before the transaction takes place</td><td>The posting are done after the transaction takes place</td></tr> <tr> <td>Each transaction is individually posted</td><td>Transactions may be posted periodically and in total.</td></tr> </tbody> </table>	Bin Card	Stores Ledger	It is a quantity record	It is a record of quantity and value	It is kept inside the stores.	It is kept outside the stores	It is maintained by the storekeeper	It is maintained by accounts department	The postings are done before the transaction takes place	The posting are done after the transaction takes place	Each transaction is individually posted	Transactions may be posted periodically and in total.
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REVIEW OF SLOW AND NON MOVING ITEMS:	The money locked up in inventory is money lost to the business. If more money is locked up, lesser is the amount available for working capital and the cost of carrying inventory also increases. Stock turnover ratio should be as high as possible. Loss due to obsolescence should be eliminated or these items used in some profitable work. Slow moving stock should be identified and speedily disposed off. The speed of movement should be increased. The turnover of difference items of stock can be analysed to find out the slow moving stocks. Materials become useless or obsolete due to changes in product, process, design or method of production, slow moving items have a low turnover ratio. Capital is locked up and cost of carrying have to be incurred. Hence, management should take effective steps to minimize losses.												
TREATMENT OF	Under Cost Accounts normal spoilage costs i.e., (which is inherent in the												

SPOILAGE AND DEFECTIVES IN COST ACCOUNTING	operation) are included in cost either by charging the loss due to spoilage to the production order or charging it to production overhead so that it is spread over all products. Any value realised from the sale of spoilage is credited to production order or production overhead account, as the case may be. The cost of abnormal spoilage (i.e. arising out of causes not inherent in manufacturing process) is charged to the Costing Profit and Loss Account. When spoiled work is the result of rigid specifications the cost of spoiled work is absorbed by good production while the cost of disposal is charged to production overheads. The possible ways of treatment are as below: (i) Defectives that are considered inherent in the process and are identified as normal can be recovered by using the following methods: (a) Charged to good products - The loss is absorbed by good units. This method is used when 'seconds' have a normal value and defectives rectified into 'seconds' or 'first' are normal; (b) Charged to general overheads - When the defectives caused in one department are reflected only on further processing, the rework costs are charged to general overheads; (c) Charged to the department overheads - If the department responsible for defectives can be identified then the rectification costs should be charged to that department; (d) Charged to Costing Profit and Loss Account - If defectives are abnormal and are due to causes beyond the control of organisation, the rework cost should be charged to Costing Profit and Loss Accounts. (ii) Where defectives are easily identifiable with specific jobs, the work costs are debited to the job.
WHAT IS JUST IN TIME (JIT) PURCHASE? WHAT ARE THE ADVANTAGES OF SUCH PURCHASES?	JIT purchasing is the purchase of materials and supplies in such a manner that delivery immediately precedes the demand of use. This will ensure that stock are as low as possible or nearly cut to a minimum. Considerable saving in material handling expenses is made by requiring suppliers to inspect materials and guarantee their quality. This improved service is obtained by giving more business to fewer suppliers, who can provide high quality and reliable delivery. Encouragement is given to employees to render goods service by placing with them long term purchasing order. Companies which implements JIT purchasing substantially reduces their investment in raw material and WIP. Advantages of JIT: • It results in considerable savings in material handling expenses. • It results in savings in factory space. • Investment in raw material & WIP is substantially reduced. • Large quantity discounts can be obtained and paperwork is reduced because of using of blanket long term order to few suppliers instead of purchase orders.

MATERIAL HANDLING COST	• <u>Meaning</u>: It refers to the expenses involved in receiving, storing, issuing and handling materials. To deal with this cost in cost accounts there are two prevalent approaches as under: • <u>First approach</u> suggests the inclusion of these costs as part of the cost of materials by establishing a separate material handling rate e.g., at the rate of percentage of the cost of material issued or by using a separate material handling rate which may be established on the basis of weight of materials issued. • <u>Under another approach</u> these costs may be included along with those of manufacturing overhead and be charged over the products on the basis of direct labour or machine hours.
AT THE TIME OF PHYSICAL STOCK TAKING, IT WAS FOUND THAT ACTUAL STOCK LEVEL WAS DIFFERENT FROM THE CLERICAL OR COMPUTER RECORDS. WHAT CAN BE POSSIBLE REASONS FOR SUCH DIFFERENCES? HOW WILL YOU DEAL WITH SUCH DIFFERENCES?	Possible reasons for differences arising at the time of physical stock taking may be as follows when it was found that actual stock level was different from that of the clerical or computer records: (i) Wrong entry might have been made in stores ledger account or bin card, (ii) The items of materials might have been placed in the wrong physical location in the store, (iii) Arithmetical errors might have been made while calculating the stores balances on the bin cards or store-ledger when a manual system is operated, (iv) Theft of stock. When a discrepancy is found at the time of stock taking, the individual stores ledger account and the bin card must be adjusted so that they are in agreement with the actual stock. For example, if the actual stock is less than the clerical or computer record the quantity and value of the appropriate store ledger account and bin card (quantity only) must be reduced and the difference in cost be charged to a factory overhead account for stores losses.

FORMULA:

Reorder level = Maximum usage * Maximum lead time (Or) Minimum level + (Average usage * Average Lead time)
Minimum level = Reorder level – (Average usage * Average lead time)
Maximum level = Reorder level + Reorder quantity – (Minimum usage * Minimum lead time)
Average level = $\frac{\text{Minimum level} + \text{Maximum level}}{2}$ (or) Minimum level + $\frac{1}{2}$ Reorder quantity
EOQ (Economic Order Quantity - Wilson's Formula) = $\sqrt{2AO/C}$ Where A = Annual usage units O = Ordering cost per unit C = Annual carrying cost of one unit i.e. Carrying cost % * Carrying cost of unit

Labour Cost

IDLE TIME:	When workers are paid on time basis there is usually a difference between the time for which the workers are paid and the time actually spent by them in production. The loss of time for which the employer pays but obtains no direct benefit is termed as idle time. In other words, idle time cost represents the wages paid for the time lost i.e time during which the worker was idle. Treatment in Cost Accounting: Idle time may be normal or abnormal: Normal idle time: It is inherent in any job situation and thus it cannot be eliminated or reduced. For example:- time gap between the finishing of one job and the starting of another; time lost due to fatigue etc. The cost of normal idle time should be charged to the cost of production. This may be done by inflating the labour rate. It may be transferred to factory overheads for absorption, by adopting a factory overhead absorption rate. Abnormal idle time: It is defined as the idle time which arises on account of abnormal causes; e.g. strikes; lockouts; floods; major breakdown of machinery; fire etc. Such an idle time is uncontrollable. The cost of abnormal idle time due to any reason should be charged to Costing Profit & Loss Account. Control on Idle Time: Idle time arising due to normal and controllable causes can be controlled by proper planning but those arising due to abnormal causes cannot be controlled. Idle time is bound to occur due to setting up of tools for various jobs, time interval between two jobs, time to travel from factory gate to work place. Idle time can be eliminated / minimized by taking the following steps: i. Production should be properly planned in advance. ii. Purchasing of material in time iii. Proper maintenance of machines iv. Utilizing man power effectively. Responsibility for controlling idle time should be properly defined and fixed. The different causes should be properly analysed by a detailed break up under each head. Person/department responsible for the idle time should be identified and remedial steps should be taken.
TREATMENT OF IDLE CAPACITY COST	(a) If idle capacity is due to unavoidable reasons such as repairs & maintenance, change over of job etc., a supplementary overhead rate may be used to recover the idle capacity cost. In this case, the costs are charged to production capacity utilized. (b) If idle capacity cost is due to avoidable reasons such as faulty planning, power failure etc, the cost should be charged to P/L A/c.

	(c) If idle capacity is due to seasonal factors, then the cost should be charged to cost of production by inflating overhead rates.
OVERTIME:	Overtime refers to the situation when a worker works beyond his normal working hours. The overtime rate is always higher than the normal rate and is usually double the normal rate. Overtime consists of two elements viz the normal cost and the extra payment or premium. The premium is known as overtime cost. The normal cost is allocated to the production order or cost centre on which the worker is working. The treatment of overtime cost varies according to the circumstances. Causes of Overtime: Overtime arises due to the following circumstances: - For working due to seasonal rush; - For making up time lost due to unavoidable reasons; - For completing a job or order within a specified period as requested by the customer; - For working due to policy decisions i.e when there is general pressure of work and labour shortage, etc Treatment of Overtime Cost: The premium or overtime cost can be charged as follows: - The job or order, if the overtime is worked at the customer's request. - As a general overhead item if it has been paid because of general pressure of work - To the department responsible for the delay - To costing profit and loss account if overtime was due to unavoidable reasons - To general overhead if caused due to seasonal rush. Control on Overtime: - Overtime should be strictly controlled and discouraged. It should be permitted only in emergencies. - Overtime should be sanctioned by a competent authority. - If overtime is being sanctioned for a long time, recruitment of more man and extra shift working should be considered.
LABOUR TURNOVER:	It is a common feature in any concern that some employee leave the concern and others join it. Workers change the job either for personal betterment or for better working conditions or due to compulsion. Labour turnover is the ratio of the number of persons leaving in a period to average number employed. Causes of Labour Turnover: The main causes of labour turnover in an organisation/ industry can be broadly classified under the following three heads: - Personal Causes; - Unavoidable Causes; and - Avoidable Causes. Personal causes are those which induce or compel workers to leave their jobs; such causes include the following:

	(i) Change of jobs for betterment. (ii) Premature retirement due to ill health or old age. (iii) Domestic problems and family responsibilities. (iv) Discontent over the jobs and working environment. Unavoidable causes are those under which it becomes obligatory on the part of management to ask one or more of their employees to leave the organisation; such causes are summed up as listed below: (i) Seasonal nature of the business; (ii) Shortage of raw material, power, slack market for the product etc.; (iii) Change in the plant location; (iv) Disability, making a worker unfit for work; (v) Disciplinary measures; (vi) Marriage (generally in the case of women). Avoidable causes are those which require the attention of management on a continuous basis so as to keep the labour turnover ratio as low as possible. The main causes under this case are indicated below (i) Dissatisfaction with job, remuneration, hours of work, working conditions, etc., (ii) Strained relationship with management, supervisors or fellow workers; (iii) Lack of training facilities and promotional avenues; (iv) Lack of recreational and medical facilities; (v) Low wages and allowances.
MEASUREMENT OF LABOUR TURNOVER:	Separation rate method = $\frac{\text{Separation during the period}}{\text{Average No. of worker's during the period}}$ Replacement method = $\frac{\text{Number of replacements}}{\text{Average No. of worker's during the period}}$ Labour flux rate = $\frac{\text{No. of separation} + \text{No. of New employees} + \text{No. of replacements}}{\text{Average No. of worker's during the period}}$
REMEDIAL STEPS TO BE TAKEN TO MINIMIZE THE LABOUR TURNOVER:	• Exit interview with each outgoing employee to ascertain the reasons for his leaving the organisation. • Job analysis and evaluation carried out even before recruitment to ascertain the requirement of each job. • Scientific system of recruitment, placement and promotion, by fitting the right person in the right job. • Use of committee, comprising of members from management and workers to handle issue concerning the workers grievance, requirements, etc • Enlightened attitude of management – mental revolution on the part of management by taking workers into confidence and acting a healthy working atmosphere.
JOB EVALUATION AND MERIT	Job Evaluation: it can be defined as the process of analysis and assessment of jobs to ascertain reliably their relative worth and to provide management

RATING:	with a reasonably sound basis for determining the basic internal wage and salary structure for the various job positions. In other words, job evaluation provides a rationale for different wages and salaries for different group of employees and ensures that these differentials are consistent and equitable. Merit Rating: it is a systematic evaluation of the personality and performance of each employee by his supervisor or some other qualified person. Thus the main points of distinction between job evaluation and merit rating are as follows: 1. Job evaluation is the assessment of the relative worth of jobs within a company and merit rating is the assessment of the relative worth of the man behind a job. In other words, job evaluation rates the job while merit rating rates employees on the job. 2. Job evaluation and its accomplishment are means to set up a rational wage and salary structure whereas merit rating provides scientific basis for determining fair wages for each worker based on his ability and performance. 3. Job evaluation simplifies wage administration by bringing uniformity in wage rates. On the other hand merit rating is used to determine fair rate of pay for different workers on the basis of their performance.
TIME RECORDING:	Recording of time has two purposes – time keeping and time booking. It is necessary for both type of workers: direct and indirect. It is necessary even if the workers are paid on piece basis. Time keeping is necessary for the purpose of recording attendance and for calculating wages. Time booking means a record for utilisation point of view; the purpose is cost analysis and cost apportionment. Record keeping is correct when time keeping and time booking tally.
TIME KEEPING:	The purpose of time keeping is to provide the basic data for: i. Pay roll preparation ii. Finding out the labour cost of a job/product/service. iii. Attendance records to meet the statutory requirements. iv. Determining the productivity and controlling labour cost v. Calculating overhead cost of a job, product or service. vi. To maintain discipline in attendance vii. To distinguish between normal and overtime, late attendance and early leaving, and viii. To provide the internal check against dummy workers
TIME BOOKING:	The various methods of time booking: i. Piece work card ii. Daily time sheet iii. Weekly time sheet iv. Clock card v. Time ticket vi. Job ticket vii. Combined time and job ticket The objectives of time booking are: i. To apportion overheads against jobs; ii. To calculate the labour cost of jobs done;

	iii. To ascertain idle time for the purpose of control; iv. To find out that the time during which a worker is in the factory is properly utilized v. To evaluate labour performance, to compare actual and budgeted time; vi. To determine overhead rates of absorbing overhead expenses under the labour hour and machine hour methods; vii. To calculate the wages and bonus provided the system of payment depends on the time taken.
STATE THE CIRCUMSTANCES IN WHICH TIME RATE SYSTEM OF WAGE PAYMENT CAN BE PREFERRED IN A FACTORY	Circumstances in which time rate system of wage payment can be preferred: In the following circumstances the time rate system of wage payment is preferred in a factory. - Persons whose services cannot be directly or tangibly measured, e.g., general helpers, supervisory and clerical staff etc. - Workers engaged on highly skilled jobs or rendering skilled services, e.g., tool making, inspection and testing. - Where the pace of output is independent of the operator, e.g., automatic chemical plants.
DISCUSS BRIEFLY, HOW YOU WILL DEAL WITH CASUAL WORKERS AND WORKERS EMPLOYED ON OUTDOOR WORK IN COST ACCOUNTS.	<u>Causal and outdoor workers</u>: Casual workers (badli workers) are employed temporarily, for a short duration to cope with sporadic increase in volume of work. If the permanent labour force is not sufficient to cope effectively with a rush of work, additional labour (casual workers) are employed to work for a short duration. Out door workers are those workers who do not carry out their work in the factory premises. Such workers either carry out the assigned work in their homes (e.g., knitwear, lamp shades) or at a site outside the factory. Casual workers are engaged on a dally basis. Wages are paid to them either at the end of the day's work or after a periodic interval. Wages paid are charged as direct or indirect labour cost depending on their identifiability with specific jobs, work orders, or department. Rigid control should be exercised over the out-workers specially with regard to following: - Reconciliation of materials drawn/issued from the store with the output. - Ensuring the completion of output during the stipulated time so as to meet comfortably the orders and contracts.
IT SHOULD BE MANAGEMENT'S ENDEAVOR TO INCREASE INVENTORY TURNOVER BUT TO REDUCE LABOUR TURNOVER. EXPAND AND ILLUSTRATE THE IDEA CONTAINED IN THIS	Inventory turnover: It is a ratio of the value of materials consumed during a period to the average value of inventory held during the period. A high inventory turnover indicates fast movement of stock. Labour turnover: It is defined as an index denoting change in the labour force for an organization during a specified period. Labour turnover in excess of normal rate is termed as high and below it as low turnover. Effects of high inventory turnover and low labour turnover: High inventory turnover reduces the investment of funds in inventory and thus accounts for the effective use of the concern's financial resources. It also accounts for the increase of profitability of a business concern. As against high labour

STATEMENT.	turnover the low labour turnover is preferred because high labour turnover causes-decrease in production targets; increase in the chances of break-down of machines at the shop floor level; increase in the number of accidents; loss of customers and their brand loyalty due to either non-supply of the finished goods or due to sub-standard production of finished goods; increase in the cost of selection, recruitment and training; increase in the material wastage and tools breakage. All the above listed effects of high labour turnover accounts for the increase in the cost of production/process/service. This increase in the cost finally accounts for the reduction of concern's profitability. Thus, it is necessary to keep the labour turnover at a low level. As such, it is correct that management should endeavour to increase inventory turnover and reduce labour turnover for optimum and best utilization of available resources and reduce the cost of production and thus increase the profitability of the organization.
WHAT DO YOU MEAN BY TIME AND MOTIONS STUDY? WHY IS IT SO IMPORTANT TO MANAGEMENT?	Time and motions study: It is the study of time taken and motions (movements) performed by workers while performing their jobs at the place of their work. Time and motion study has played a significant role in controlling and reducing labour cost. Time Study is concerned with the determination of standard time required by a person of average ability to perform a job. Motion study, on the other hand, is concerned with determining the proper method of performing a job so that there are no wasteful movements, hiring the worker unnecessarily. However, both the studies are conducted simultaneously. Since materials, tools, equipment and general arrangement of work, all have vital bearing on the method and time required for its completion. Therefore, their study would be incomplete and would not yield its full benefit without a proper consideration of these factors. <u>Time and motion study is important to management because of the following features:</u> 1. Improved methods, layout, and design of work ensures effective use of men, material and resources. 2. Unnecessary and wasteful methods are pin-pointed with a view to either improving them or eliminating them altogether. This leads to reduction in the work content of an operation, economy in human efforts and reduction of fatigue. 3. Highest possible level of efficiency is achieved in all respect. 4. Provides information for setting labour standards - a step towards labour cost control and cost reduction. 5. Useful for fixing wage rates and introducing effective incentive scheme.
DISCUSS THE TWO TYPES OF COST ASSOCIATED WITH LABOUR TURNOVER.	Two types of costs which are associated with labour turnover are: (i) Preventive costs: This includes costs incurred to keep the labour turnover at a low level i.e., cost of medical schemes. If a company incurs high preventive costs, the rate of labour turnover is usually low. (ii) Replacement costs: These are the costs which arise due to high labour

turnover. If men leave soon after they acquire the necessary training and experience of work, additional costs will have to be incurred on new workers, i.e., cost of advertising, recruitment, selection, training and induction, extra cost also incurred due to abnormal breakage of tools and machines, defectives, low output, accidents etc., caused due to the inefficiency and inexperienced new workers.

It is obvious that a company will incur very high replacement costs if the rate of labour turnover is high. Similarly, only adequate preventive costs can keep labour turnover at a low level. Each company must, therefore, workout the optimum level of labour turnover keeping in view its personnel policies and the behaviour of replacement costs and preventive costs at various levels of labour turnover rates.

FORMULA

Taylor's Piece Rate:

Efficiency	Wage
Less than 100%	83% of the Piece Rate
100% or more	125% of the Piece Rate

Merrick's differential rate scheme:

Efficiency Level	Piece Rate
Upto 83%	Normal Rate
83% to 100%	110% of Normal Rate
Above 100%	120% of the Normal Rate

Gantt Task and Bonus Plan

Output	Payment
Output below standard	Guaranteed time wage
Output at standard	Time rate plus Bonus @20% of time rate
Output above standard	High piece rate on worker's whole output

Emerson's Efficiency System

Efficiency	Piece Rate
66 2/3 rd %	Guaranteed Time Rate
90%	Time Rate + 10% Bonus
100%	Time Rate + 20% bonus
Above 100%	Time Rate + 20% Bonus + 1% for every increase of 1% beyond 100%.

Halsey Plan

Total wages = (time taken * Hourly rate) + 50% (time SAVED * hourly rate)

Rowan Plan

Total wages = (time taken * hourly rate) + [(time saved/standard time)*(time taken * hourly rate)]

Barth Scheme

Total wages = hourly rate * $\sqrt{\text{Standard time} * \text{time taken}}$

OVERHEADS

ABSORPTION OF OVERHEADS:	Absorption of overhead refers to charging of overheads to individual products or jobs. The overhead expenses pertaining to a cost centre are ultimately to be charged to the products, jobs, etc. which pass through that cost centre. For the purpose of the absorption of overheads to individual jobs, processes or products, overheads absorption rates are applied. The overhead rate of expenses for absorbing them to production may be estimated on the following three basis: (i) The figure of the previous year or period may be adopted as the overhead rate to be charged on production in current year. (ii) The overhead rate for the year may be determined on the basis of the estimated expenses and the anticipated volume of production or activity. (iii) The overhead rate for the year may be determined on the basis of normal volume of output or capacity of business.
ALLOCATION OF OVERHEADS:	• After having collected the overheads under proper standing order numbers the next step is to arrive at the amount for each department. • This may be through allocation or absorption. • According to Chartered Institute of Management Accountants, London, <u>Cost Allocation</u> is “that part of cost attribution which charges a specific cost to a cost centre or cost unit”. • Thus, the wages paid to maintenance workers as obtained from wages analysis book can be allocated directly to maintenance service cost centre. • Similarly, indirect material cost can also be allocated to different cost centre according to use by pricing stores requisition. The following are the differences between allocation and apportionment. 1. Allocation costs are directly allocated to cost centre. Overhead which cannot be directly allocated are apportioned on some suitable basis. 2. Allocation allots whole amount of cost to cost centre or cost unit where as apportionment allots part of cost to cost centre or cost unit. 3. No basis required for allocation. Apportionment is made on the basis of area, assets value, number of workers etc.
BLANKET OVERHEAD RATE:	• <u>Meaning</u>: Blanket overhead rate refers to the computation of one single overhead rate for the entire factory. This is also known as plant wise or the single overhead rate for the entire factory. • <u>Formula</u>: It is determined as follows: $\text{Blanket Overhead Rate} = \frac{\text{Overhead Cost for entire factory}}{\text{Base for the period}}$ Base for the year can be labour hours or machine hours. Situation for using blanket rate: The use of blanket rate may be considered appropriate for factories which produce only one major product on a continuous basis. It may also be used in those units in which all products utilise same amount of time in each department. If such conditions do not exist, the use of blanket rate will give

	misleading results in the determination of the production cost, specially when such a cost ascertainment is carried out for giving quotations and tenders.
DISCUSS IN BRIEF THREE MAIN METHODS OF ALLOCATING SUPPORT DEPARTMENTS COSTS TO OPERATING DEPARTMENTS. OUT OF THESE THREE, WHICH METHOD IS CONCEPTUALLY PREFERABLE	The three main methods of allocating support departments costs to operating departments are: (i) Direct re-distribution method: Under this method, support department costs are directly apportioned to various production departments only. This method does not consider the service provided by one support department to another support department. (ii) Step method: Under this method the cost of the support departments that serves the maximum numbers of departments is first apportioned to other support departments and production departments. After this the cost of support department serving the next largest number of departments is apportioned. In this manner we finally arrive on the cost of production departments only. (iii) Reciprocal service method: This method recognises the fact that where there are two or more support departments they may render services to each other and, therefore, these inter-departmental services are to be given due weight while re-distributing the expenses of the support departments. The methods available for dealing with reciprocal services are: - Simultaneous equation method - Repeated distribution method - Trial and error method. The reciprocal service method is conceptually preferable. This method is widely used even if the number of service departments is more than two because due to the availability of computer software it is not difficult to solve sets of simultaneous equations.
DISCUSS THE TREATMENT IN COST ACCOUNTS OF THE COST OF SMALL TOOLS OF SHORT EFFECTIVE LIFE.	Small tools are mechanical appliances used for various operations on a work place, specially in engineering industries. Such tools include drill bits, chisels, screw cutter, files etc. Treatment of cost of small tools of short effective life: (i) Small tools purchased may be capitalized and depreciated over life if their life is ascertainable. Revaluation method of depreciation may be used in respect of very small tools of short effective life. Depreciation of small tools may be charged to: - Factory overheads - Overheads of the department using the small tool. (ii) Cost of small tools should be charged fully to the departments to which they have been issued, if their life is not ascertainable.
EXPLAIN WHAT DO YOU MEAN BY CHARGEABLE	Chargeable expenses: All expenses, other than direct materials and direct labour cost which are specifically and solely incurred on production, process or job are treated as chargeable or direct expenses. These expenses in cost

EXPENSES AND STATE ITS TREATMENT IN COST ACCOUNTS	accounting are treated as part of prime cost, Examples of chargeable expenses include - Rental of a machine or plant hired for specific job, royalty, cost of making a specific pattern, design, drawing or making tools for a job.																																	
DEFINE SELLING AND DISTRIBUTION EXPENSES. DISCUSS THE ACCOUNTING FOR SELLING AND DISTRIBUTION EXPENSES	Selling expenses: Expenses incurred for the purpose of promoting, marketing and sales of different products. Distribution expenses: Expenses relating to delivery and despatch of goods/products to customers. Accounting treatment for selling and distribution expenses. Selling and distribution expenses are usually collected under separate cost account numbers. These expenses may be recovered by using any one of following method of recovery. 1. Percentage on cost of production / cost of goods sold. 2. Percentage on selling price. 3. Rate per unit sold.																																	
BASIS OF APPORTIONMENT	<table><tr><th>Basis</th><th>Expense items</th></tr><tr><td>Area or cubic measurement of department</td><td>Rent, rates, lighting and building</td></tr><tr><td>Direct labour hours or, where wage rates are more or less uniform, total direct wages of department.</td><td>maintenance Supervision</td></tr><tr><td>Number of employees in departments</td><td>Supervision</td></tr><tr><td>Cost of material used by departments</td><td>Material handling charges</td></tr><tr><td>Value of assets</td><td>Depreciation and insurance</td></tr><tr><td>Horse power of machines</td><td>Power</td></tr></table> <table><tr><th>Service department cost</th><th>Basis of apportionment</th></tr><tr><td>Maintenance Department</td><td>Hours worked for each department</td></tr><tr><td>Employment department</td><td>Rate of labour turnover or number of employees in each department</td></tr><tr><td>Payroll Department</td><td>Direct labour hours, machine hours number of employees</td></tr><tr><td>Stores keeping department</td><td>No. of requisitions, quantity or value of materials</td></tr><tr><td>Welfare department</td><td>No. of employees</td></tr><tr><td>Internal transport department</td><td>Truck hours, truck mileage</td></tr><tr><td>Building service department</td><td>Relative area of each department</td></tr><tr><td>Power house</td><td>Floor area, Cubic contents</td></tr></table>		Basis	Expense items	Area or cubic measurement of department	Rent, rates, lighting and building	Direct labour hours or, where wage rates are more or less uniform, total direct wages of department.	maintenance Supervision	Number of employees in departments	Supervision	Cost of material used by departments	Material handling charges	Value of assets	Depreciation and insurance	Horse power of machines	Power	Service department cost	Basis of apportionment	Maintenance Department	Hours worked for each department	Employment department	Rate of labour turnover or number of employees in each department	Payroll Department	Direct labour hours, machine hours number of employees	Stores keeping department	No. of requisitions, quantity or value of materials	Welfare department	No. of employees	Internal transport department	Truck hours, truck mileage	Building service department	Relative area of each department	Power house	Floor area, Cubic contents
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TREATMENT OF UNDER OR OVER	The treatment will depend on the cause that led to under or over absorption. The amount relating to abnormal factors should be charged off to																																	

ABSORPTION:	costing profit and loss account, otherwise cost previously arrived at should be adjusted. The following are the main methods of disposal of under or over absorption of overheads. (i) Use of supplementary Rates: where the amount of under or over absorption is considerable, the cost of jobs or products is adjusted by means of a supplementary rate. This rate is determined by dividing the amount of under or over absorption by the base that was adopted for absorption. This rate may be positive or negative. The amount of under absorption is set right by a positive rate while a negative rate is determined for adjusting over absorption. The amount of under or over absorption at the end of the accounting period is adjusted in work in progress, finished goods and cost of sales in proportion to direct labour hours or machine hours or value of balances in each of these accounts by use of supplementary rate. (ii) Writing off to costing profit and loss account: where the difference between the actual or absorbed overheads is not large, the simple method is to write off to the costing profit and loss account. When there is under absorption due to idle capacity, the concerned amount is also written off in this manner, likewise, when there was wasteful expenditure due to lack of control also. (iii) Carry Forward to Subsequent Year: Difference should be carried forward in the expectation that next year the position will be automatically corrected. This would really mean that costing data of two years would be wrong.
EXPLAIN THE COST ACCOUNTING TREATMENT OF UNSUCCESSFUL RESEARCH AND DEVELOPMENT COST	Cost of unsuccessful research is treated as factory overhead, provided the expenditure is normal and is provided in the budget. If it is not budgeted, it is written off to the profit and loss account. If the research is extended for long time, some failure cost is spread over to successful research.

INTEGRATED AND NON INTEGRATED ACCOUNTS

WHAT ARE INTEGRATED ACCOUNTS:	• <u>Meaning</u>: Integrated Accounting is the name given to a system of accounting whereby cost and financial accounts are kept in the same set of books. • Such a system will have to afford full information required for costing as well as for Financial Accounts. In other words, information and data should be recorded in such a way so as to enable the firm to ascertain the cost (together with the necessary analysis) of each product, job, process, operation or any other identifiable activity. • For instance, purchases analysed by nature of material and its end use. Purchases account is eliminated and direct postings are made to Stores Control Account, Work-in-Progress accounts, or Overhead Account. Payroll is straightway analysed into direct labour and overheads. • It also ensures the ascertainment of marginal cost, variances, abnormal losses and gains, In fact, all information that management requires from a system of costing for doing its work properly is made available. • The integrated accounts give full information in such a manner so that the profit and loss account and the balance sheet can be prepared according to the requirements of law and the management maintains full control over the liabilities and assets of its business.
ADVANTAGES OF INTEGRATED ACCOUNTS:	The main advantages of Integrated Accounting are as follows: (i) Since there is <u>one set of accounts</u>, thus there is one figure of profit. Hence the question of reconciliation of costing profit and financial profit does not arise. (ii) There is <u>no duplication of recording</u> of entries and efforts to maintain separate set of books. (iii) Costing data are available from books of original entry and hence no delay is caused in obtaining information. (iv) The operation of the system is facilitated with the use of <u>mechanized accounting</u>. (v) Centralization of accounting function results in <u>economy</u>.
ESSENTIAL PRE-REQUISITES FOR INTEGRATED ACCOUNTS:	• The management's decision about the extent of integration of the two sets of books. Some concerns find it useful to integrate up to the stage of primary cost or factory cost while other prefer full integration of the entire accounting records. • A suitable coding system must be made available so as to serve the accounting purposes of financial and cost accounts. • An agreed routine, with regard to the treatment of provision for accruals, prepaid expenses, other adjustment necessary for preparation of interim accounts. • Perfect coordination should exist between the staff responsible for the financial and cost aspects of the accounts and an efficient processing of accounting documents should be ensured.
RECONCILIATION OF COST AND FINANCIAL ACCOUNTS:	• <u>Need</u>: When the cost and financial accounts are kept separately, it is imperative that those should be reconciled, otherwise the cost accounts would not be reliable. • <u>Sufficient Information</u>: In this connection, it is necessary to remember that a reconciliation of the two sets of accounts only can be made if both the sets contain sufficient details as would enable the causes of

	differences to be located. It is, therefore, important that in the financial accounts, the expenses should be analysed in the same way as in the cost accounts. • Reconciliation of the balances generally, is possible preparing a <u>Memorandum Reconciliation Account</u>. • In this account, the items charged in one set of accounts but not in the other or those charged in excess as compared to that in the other are collected and by adding or subtracting them from the balance of the amount of profit shown by one of the accounts, shown by the other can be reached. The procedure is similar to the one followed for reconciling the balance with a bank that shown by the cash book or the ledger.
ITEMS INCLUDED IN THE FINANCIAL ACCOUNTS BUT NOT IN COST ACCOUNTS :	(a) Matters of pure finance : • Interest received on bank deposits. • Interest, dividends, etc. received on investments. • Rents receivable. • Losses on the sales of investments, building etc. • Profits made on the sale of fixed assets. • Expenses of the company's share transfer office, if any. • Transfer fee received. • Remuneration paid to the proprietor in excess of a fair reward for services rendered. • Damages payable at law. • Penalties payable at law. • Losses due to scrapping of machinery. (b) Item included in the cost accounts only (notional expenses): • Charges in lieu of rent where premises are owned. • Interest on capital employed in production, but upon which no interest is actually paid if the firm decided to treat interest as part of cost. • Salary for the proprietor where he works but does not charge a salary. (c) Items whose treatment is different in the two sets of accounts. The objective of cost accounting is to provide information to management for decision making and control purposes while financial accounting conforms to external reporting requirements. Hence there are chances that certain items are treated differently in the two sets of accounts. For example, LIFO method is not allowed for inventory valuation in India as per the Accounting Standard 2 issued by the Council of the ICAI. However, this method may be adopted for cost accounts as it is more suitable for arriving at costs which shall be used as a base for deciding selling prices. Similarly cost accounting may use a different method of depreciation than what is allowed under financial accounting. (d) Varying basis of valuation: It is another factor which sometimes is responsible for the difference. It is well known that in financial accounts stock are valued either at cost or market price, whichever is lower. But in Cost Accounts, stocks are only valued at cost.

TYPES OF COSTING (JOB, CONTRACT, OPERATING, PROCESS, JOINT & BY PRODUCT)

Cost plus Contract	Under Cost plus Contract, the contract price is ascertained by adding a percentage of profit to the total cost of the work. Such type of contracts are entered into when it is not possible to estimate the Contract Cost with reasonable accuracy due to unstable condition of material, labour services, etc. Advantages : (i) The Contractor is assured of a fixed percentage of profit. There is no risk of incurring any loss on the contract. (ii) It is useful specially when the work to be done is not definitely fixed at the time of making the estimate. (iii) Contractee can ensure himself about 'the cost of the contract', as he is empowered to examine the books and documents of the contractor to ascertain the veracity of the cost of the contract. Disadvantages - The contractor may not have any inducement to avoid wastages and effect economy in production to reduce cost.
Escalation Clause:	• <u>Meaning</u>: Escalation clause is a stipulation in the contract that the contract price will be increased by an agreed amount or percentage if the price of the raw material, wages, etc increases beyond a certain limit. • The <u>object of this clause</u> is to safeguard the interest of both side against unfavorable change in price. • While due to loss of the contractor's interest is safeguarded as his profit percentage is not reduced. • The customer's interest is safeguarded as quality is ensured because due to the escalation clause the contractor does not use material of low quality.
Notional Profit and Retention Money in contract costing:	Notional profit is the excess of income till date over expenditure till date on a contract. Since actual profit can be computed only after the contract is complete, notional profit is used to recognize profit during the course of contract. Notional profit = Value of work certified + cost of work uncertified – cost incurred till date Retention money: the contractor gets money on the basis of work completed as certified by the certificate of work done. Sometimes the customer does not pay the whole value of work done. As per the agreement, a certain percentage of the value of work done is retained by the customer. This is called as retention money. The objective behind retention money is to place the customer in a favorable position as against the contractor. It safeguards the interest of the customer as against the failure of the contractor to fulfill any of the clauses of the agreement or against the defective work found later on.
Recognition of Profit on Incomplete	Profit on uncompleted contract is computed on the basis of notional profit and the percentage of the work done. It is transferred to costing profit and loss account and computed as follows:

Contracts:	i. Stage of contract – Less than 25% : Profit to be recognized is NIL as it is impossible to foresee clearly the future position. ii. Stage of contract – More than 25% but less than 50% : profit to be recognized is $\text{Profit} = 1/3 * \text{Notional Profit} * \text{Cash received/Work certified}$ iii. Stage of contract – More than 50% but less than 90% : profit to be recognized is $\text{Profit} = 2/3 * \text{Notional profit} * \text{Cash received/work certified}$ iv. Stage of contract – more than 90% : Profit to be recognized is a proportion of estimated profit. The estimated profit is arrived at by deducting the contract price the aggregate of estimated cost and expenditure incurred. The proportion of estimated profit is computed by adopting any of the following formula: - Estimated profit * work certified/contract price - Estimated profit * work certified/contract price * Cash received/work certified - Estimated profit * cost of work to date/ estimated total cost
Operating Costing:	Operating costing is one of the methods of costing used to ascertain the cost of generating and rendering services such as transport, hospital, canteens, electricity, etc. Job costing is undertaken in industries which provides services such as canteens, hospitals, electricity, transport, etc. Operating costing aims at ascertaining the operating costs. The cost incurred to generate and render services such as hospital, canteen, electricity, transport, etc is called operating cost. Operating costs are classified into three broad categories; Operating and running cost: these are the cost which are incurred for operating and running the vehicle. For e.g. cost of diesel, petrol, etc. these cost are variable in nature and vary with the operations in more or less same proportions. Standing costs: standing cost are the cost which are incurred irrespective of operation. For e.g. rent of garage, salary of drivers, insurance premium, etc. it is fixed in nature and thus the cost goes on accumulating as the time passes. Maintenance costs: Maintenance cost are the cost which are incurred to keep the vehicle in good or running condition. For e.g. cost of repair, painting, overhauling, etc. it is semi variable in nature and is influenced by both time and volume of operation.
Job Costing and Batch Costing	Accounting to job costing, costs are collected and accumulated according to job. Each job or unit of production is treated as a separate entity for the purpose of costing. Job costing may be employed when jobs are executed for different customers according to their specification. Batch costing is a form of job costing, a lot of similar units which comprises the batch may be used as a cost unit for ascertaining cost. Such a method of costing is used in case of pharmaceutical industry, readymade garments, industries manufacturing parts of TV, radio sets etc.
Economic batch quantity in Batch	In batch costing the most important problem is the determination of 'Economic Batch Quantity' The determination of economic batch quantity

Costing	involves two type of costs viz, (i) set up cost and (ii) carrying cost. With the increase in the batch size, there is an increase in the carrying cost but the set-up cost per unit of the product is reduced; this situation is reversed when the batch size is reduced. Thus there is one particular batch size for which both set up and carrying costs are minimum. This size of a batch is known as economic or optimum batch quantity. Economic batch quantity can be determined with the help of a table, graph or mathematical formula. The mathematical formula usually used for its determination is as follows: $\sqrt{2DS/C}$ Where, D = Annual demand for the product S = Setting up cost per batch C = Carrying cost per unit of production per annum
Equivalent Production:	• The presence of opening or closing WIP poses an accounting problem as to the evaluation of inventory as well as ascertainment of cost per unit of output. • To solve this problem, the WIP or incomplete units are expressed in terms of complete units, which are termed as equivalent unit of production. • Thus, equivalent production refers to a systematic procedure of expressing the output of a process in terms of completed units. • It is therefore, the conversion of uncompleted production into its equivalent completed units. • Equivalent units of production means converting the uncompleted production into its equivalent completed units. To compute the equivalent units, in each process, an estimate is made of the percentage completion of the closing WIP. • The WIP is inspected and an estimate is made of the degree of completion, usually on a percentage basis.
Normal Waste, Abnormal Waste & Abnormal Gain and their treatment in cost accounts:	The loss, which is unavoidable and is expected during the course of production, is called as normal process loss. Normal process loss may arise due to evaporation, chemical reaction, shrinkage, etc <u>Accounting treatment of Normal Loss:</u> No separate account is maintained for normal process loss. This is because the cost of normal loss is to be borne by the goods units produced in the process. The cost of normal loss is ascertained and charged to respective process account. If normal loss is disposed off for some price, then the realizable value from the sale of normal process loss is credited to the concerned process account. Thus, in this type of situation, only the difference between the cost of normal process loss and its realizable value is to be borne by the goods units. <u>Abnormal Process Loss:</u> There are certain losses, which are caused by unexpected or abnormal reasons such as fire, theft, breakage, negligence, etc. such losses are known as abnormal process loss from accounting point of view. Abnormal process loss = actual process loss – normal process loss

	<u>Accounting treatment:</u> A separate account is maintained for abnormal loss account . this is so because since the abnormal loss are avoidable and can be controlled, it is not fair to charge the cost of abnormal loss to the goods units. The abnormal process loss is closed by transferring the balance to costing profit and loss account. If the abnormal loss has some scrap value and is disposed off accordingly, then only the balance abnormal loss is debited to costing profit and loss account. <u>Abnormal Process Gain:</u> It is quite natural that certain amount of material will be lost or scraped during the course of production. It is an expected loss, which cannot be avoided. Such a loss is anticipated in advance and is termed as normal process loss. If the actual loss is lower than anticipated normal loss, then there arises abnormal gain. <u>Accounting treatment:</u> A separate account of abnormal gain is maintained. The cost of abnormal gain is ascertained and this cost is debited to the respective process account and credited to abnormal gain account. The abnormal gain account is debited with the figure of reduced normal loss both in units as well as costs. The abnormal gain is closed by transferring the balance to costing profit and loss account.
Define Product costs. Describe three different purposes for computing product costs	<u>Definition of product costs</u> Product costs are inventoriable costs. These are the costs, which are assigned to the product. Under marginal costing variable manufacturing costs and under absorption costing, total manufacturing costs constitute product costs. <u>Purposes for computing product costs:</u> The three different purposes for computing product costs are as follows: (i) Preparation of financial statements: Here focus is on inventoriable costs. (ii) Product pricing: It is an important purpose for which product costs are used. For this purpose, the cost of the areas along with the value chain should be included to make the product available to the customer. (iii) Contracting with government agencies: For this purpose government agencies may not allow the contractors to recover research and development and marketing costs under cost plus contracts.
Explain briefly the procedure for the valuation of Work-in-process.	Valuation of Work-in process: The valuation of work-in-process can be made in the following three ways, depending upon the assumptions made regarding the flow of costs. – First-in-first-out (FIFO) method – Last-in-first-out (LIFO) method – Average cost method A brief account of the procedure followed for the valuation of work-in-process under the above three methods is as follows; FIFO method: According to this method the units first entering the process are completed first. Thus the units completed during a period would consist

	partly of the units which were incomplete at the beginning of the period and partly of the units introduced during the period. The cost of completed units is affected by the value of the opening inventory, which is based on the cost of the previous period. The closing inventory of work-in-process is valued at its current cost. LIFO method: According to this method units last entering the process are to be completed first. The completed units will be shown at their current cost and the closing-work in process will continue to appear at the cost of the opening inventory of work-in-progress along with current cost of work in progress if any. Average cost method: According to this method opening inventory of work-in-process and its costs are merged with the production and cost of the current period, respectively. An average cost per unit is determined by dividing the total cost by the total equivalent units, to ascertain the value of the units completed and units in process.
“Operation costing is defined as refinement of Process costing.” Explain it.	Operation costing is concerned with the determination of the cost of each operation rather than the process: • In the industries where process consists of distinct operations, the operation costing method is applied. • It offers better control and facilitates the computation of unit operation cost at the end of each operation.
What is inter-process profit? State its advantages and disadvantages.	Definition of Inter-Process Profit and Its advantages and disadvantages: In some process industries the output of one process is transferred to the next process not at cost but at market value or cost plus a percentage of profit. The difference between cost and the transfer price is known as inter-process profits. The advantages and disadvantages of using inter-process profit, in the case of process type industries are as follows: Advantages: 1. Comparison between the cost of output and its market price at the stage of completion is facilitated. 2. Each process is made to stand by itself as to the profitability. Disadvantages: 1. The use of inter-process profits involves complication. 2. The system shows profits which are not realised because of stock not sold out.
Joint products and By-products:	Joint Products are defined as the products which are produced simultaneously from same basic raw materials by a common process or processes but none of the products is relatively of more importance or value as compared with the other. For example spirit, kerosene oil, fuel oil, lubricating oil, wax, tar and asphalt are the examples of joint products.

	By products, on the other hand, are the products of minor importance jointly produced with other products of relatively more importance or value by the common process and using the same basic materials. These products remain inseparable upto the point of split off. For example in Dairy industries, batter or cheese is the main product, but butter milk is the by-product. Points of Distinction: (1) Joint product are the products of equal economic importance, while the by-products are of lesser importance. (2) Joint products are produced in the same process, whereas by-products are produced from the scrap or the discarded materials of the main product. (3) Joint products are not produced incidentally, but by-products emerge incidentally also.
Treatment of by-product cost in Cost Accounting	(i) When they are of small total value, the amount realized from their sale may be dealt as follows: • Sales value of the by-product may be credited to Profit and Loss Account and no credit be given in Cost Accounting. The credit to Profit and Loss Account here is treated either as a miscellaneous income or as additional sales revenue. • The sale proceeds of the by product may be treated as deduction from the total costs. The sales proceeds should be deducted either from production cost or cost of sales. (ii) When they require further processing: In this case, the net realizable value of the by product at the split-off point may be arrived at by subtracting the further processing cost from realizable value of by products. If the value is small, it may be treated as discussed in (i) above.
How apportionment of joint costs upto the point of separation amongst the joint products using market value at the point of separation and net realizable value method is done? Discuss.	Apportionment of Joint Cost amongst Joint Products using: Market value at the point of separation This method is used for apportionment of joint costs to joint products upto the split off point. It is difficult to apply if the market value of the product at the point of separation is not available. It is useful method where further processing costs are incurred disproportionately. Net realizable value Method From the sales value of joint products (at finished stage) are deducted: – Estimated profit margins – Selling distribution expenses, if any – Post split off costs. The resultant figure so obtained is known as net realizable value of joint products. Joint costs are apportioned in the ratio of net realizable value.
Describe briefly, how joint costs upto the point of separation may be apportioned amongst the	Methods of apportioning joint cost among the joint products: (i) Average Unit Cost Method: under this method, total process cost (upto the point of separation) is divided by total units of joint products produced. On division average cost per unit of production is obtained. The effect of application of this method is that all joint products will have uniform cost per unit.

joint products under the following methods: (i) Average unit cost method (ii) Contribution margin method (iii) Market value at the point of separation (iv) Market value after further processing (v) Net realizable value method.	(ii) Contribution Margin Method: under this method joint costs are segregated into two parts – variable and fixed. The variable costs are apportioned over the joint products on the basis of units produced (average method) or physical quantities. If the products are further processed, then all variable cost incurred be added to the variable cost determined earlier. Then contribution is calculated by deducting variable cost from their respective sales values. The fixed costs are then apportioned over the joint products on the basis of contribution ratios. (iii) Market Value at the Time of Separation: This method is used for apportioning joint costs to joint products upto the split off point. It is difficult to apply if the market value of the products at the point of separation are not available. The joint cost may be apportioned in the ratio of sales values of different joint products. (iv) Market Value after further Processing: Here the basis of apportionment of joint costs is the total sales value of finished products at the further processing. The use of this method is unfair where further processing costs after the point of separation are disproportionate or when all the joint products are not subjected to further processing. (v) Net Realisable Value Method: Here joint costs is apportioned on the basis of net realisable value of the joint products, Net Realisable Value = Sale value of joint products (at finished stage) (-) estimated profit margin (-) selling & distribution expenses, if any (-) post split off cost
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STANDARD COSTING, MARGINAL COSTING AND BUDGETARY CONTROL

Key factor or Limiting factor	Key Factor is a factor which at a particular time or over a period limits the activities of an undertaking. It may be the level of demand for the products or services or it may be the shortage of one or more of the productive resources, e.g., labour hours, available plant capacity, raw material's availability etc. Examples of Key Factors or Limiting Factors are: - Shortage of raw material. - Shortage of labour. - Plant capacity available. - Sales capacity available. - Cash availability.
Advantages of Marginal Costing	- The marginal cost remains constant per unit of output whereas the fixed cost remains constant in total. Since marginal cost per unit is constant from period to period within a short span of time, <u>firm decisions on pricing policy can be taken</u>. If fixed cost is included, the unit cost will change from day to day depending upon the volume of output. This will make decision making task difficult. - Overheads are recovered in costing on the basis of pre-determined rates. If fixed overheads are included on the basis of pre-determined rates, there will be under-recovery of overheads if production is less or if overheads are more. There will be over-recovery of overheads if production is more than the budget or actual expenses are less than the estimate. This creates the problem of treatment of such under or over-recovery of overheads. <u>Marginal costing avoids such under or over recovery of overheads</u>. - Advocates of marginal costing argues that under the marginal costing technique, the stock of finished goods and work-in-progress are carried on marginal cost basis and the fixed expenses are written off to profit and loss account as period cost. This <u>shows the true profit of the period</u>. - Marginal costing helps in the <u>preparation of break-even analysis</u> which shows the effect of increasing or decreasing production activity on the profitability of the company. - Segregation of expenses as fixed and variable helps the management to exercise control over expenditure. The management <u>can compare the actual variable expenses with the budgeted variable expenses</u> and take corrective action through analysis of variances. - Marginal costing helps the management in taking a number of <u>business decisions</u> like make or buy, discontinuance of a particular product, replacement of machines, etc.
Limitations of Marginal Costing	It is <u>difficult to classify</u> exactly the expenses into fixed and variable category. Most of the expenses are neither totally variable nor wholly fixed. For example, various amenities provided to workers may have no relation either to volume of production or time factor.

	• Contribution of a product itself is <u>not a guide for optimum profitability</u> unless it is linked with the key factor. • Sales <u>staff may mistake</u> marginal cost for total cost and sell at a price; which will result in loss or low profits. Hence, sales staff should be cautioned while giving marginal cost. • Overheads of fixed nature cannot altogether be excluded particularly in large contracts, while valuing the work-in- progress. In order to show the correct position fixed overheads have to be included in work-in-progress. • Some of the assumptions regarding the behaviour of various costs are not necessarily true in a realistic situation. • Marginal costing <u>ignores time factor and investment</u>. For example, the marginal cost of two jobs may be the same but the time taken for their completion and the cost of machines used may differ. The true cost of a job which takes longer time and uses costlier machine would be higher. This fact is not disclosed by marginal costing.
Assumptions of Cost Volume Profit Analysis:	• Changes in the levels of revenues and costs arise only because of changes in the number of product (or service) units produced and sold – for example, the number of television sets produced and sold by Sony Corporation or the number of packages delivered by Overnight Express. <u>The number of output units is the only revenue driver and the only cost driver</u>. Just as a cost driver is any factor that affects costs, a revenue driver is a variable, such as volume, that causally affects revenues. • <u>Total costs can be separated into two components</u>; a fixed component that does not vary with output level and a variable component that changes with respect to output level. Furthermore, variable costs include both direct variable costs and indirect variable costs of a product. Similarly, fixed costs include both direct fixed costs and indirect fixed costs of a product • When represented graphically, the behaviours of total revenues and total costs are <u>linear</u> (meaning they can be represented as a straight line) in relation to output level within a relevant range (and time period). • Selling price, variable cost per unit, and total fixed costs (within a relevant range and time period) are known and <u>constant</u>. • The analysis either covers a single product or assumes that the <u>proportion of different products</u> when multiple products are sold will <u>remain constant</u> as the level of total units sold changes. • All revenues and costs can be added, subtracted, and compared <u>without taking into account the time value of money</u>.
Write short notes on Angle of	This angle is formed by the intersection of sales line and total cost line at the break- even point. This angle shows the rate at which profits are being earned

Incidence	once the break-even point has been reached. The wider the angle the greater is the rate of earning profits. A large angle of incidence with a high margin of safety indicates extremely favourable position.																				
Margin of Safety:	The margin of safety can be defined as the difference between the expected level of sale and the breakeven sales. The larger the margin of safety , the higher are the chances of making profits. The Margin of Safety can also be calculated by identifying the difference between the projected sales and breakeven sales in units multiplied by the contribution per unit. This is possible because, at the breakeven point all the fixed costs are recovered and any further contribution goes into the making of profits.																				
Absorption costing and Marginal Costing:	<table><tr><th>Basis</th><th>Absorption Costing</th><th>Marginal Costing</th></tr><tr><td>Calculation of Overhead Rate</td><td>In this, absorption rates includes both fixed and variable overheads.</td><td>Marginal costing rate include only variable manufacturing overhead.</td></tr><tr><td>Valuation of inventory</td><td>In absorption costing, valuation is on product cost i.e prime cost plus applied fixed and variable manufacturing overheads</td><td>Marginal costing will be at prime cost plus applied variable manufacturing overheads.</td></tr><tr><td>Classification of overheads</td><td>In absorption costing, the overhead may be classified as factory, administration and selling and distribution.</td><td>In marginal costing, overheads are classified as fixed and variable.</td></tr><tr><td>Decision making</td><td>It distorts decision making</td><td>It facilitates decision making</td></tr><tr><td>Profitability</td><td>Fixed cost are charged to the cost of production. Each product bears reasonable share of fixed costs and thus profitability of a product is influenced by an apportionment of fixed cost.</td><td>Fixed cost are regarded as period costs. The profitability of different products are judged by their PV ratio.</td></tr></table>			Basis	Absorption Costing	Marginal Costing	Calculation of Overhead Rate	In this, absorption rates includes both fixed and variable overheads.	Marginal costing rate include only variable manufacturing overhead.	Valuation of inventory	In absorption costing, valuation is on product cost i.e prime cost plus applied fixed and variable manufacturing overheads	Marginal costing will be at prime cost plus applied variable manufacturing overheads.	Classification of overheads	In absorption costing, the overhead may be classified as factory, administration and selling and distribution.	In marginal costing, overheads are classified as fixed and variable.	Decision making	It distorts decision making	It facilitates decision making	Profitability	Fixed cost are charged to the cost of production. Each product bears reasonable share of fixed costs and thus profitability of a product is influenced by an apportionment of fixed cost.	Fixed cost are regarded as period costs. The profitability of different products are judged by their PV ratio.
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Need of Standard Costing:	Standard costing system is widely accepted as it serves the different needs of an organisation. The standard costing is preferred for the following reasons: (a) Prediction of future cost for decision making: Standard costs are set after taking into account all the future possibilities and can be termed as future cost. Standard cost is used for calculating profitability from a project/ order/ activity proposed to be undertaken. Hence, standard cost is very useful for decision making purpose. (b) Provide target to be achieved: Standard costs are the target cost which should be no be crossed. It keeps challenging target before the responsibility centres. Management of responsibility centres monitor the performance continuously against the set standards and deviations are immediately																				

	corrected. (c) Used in budgeting and performance evaluation: Standard costs are used to set budgets and based on these budgets managerial performance is evaluated. This is of two benefits, one managers of a responsibility centre will not compromise with the quality to fulfill the budgeted quantity and second, variances can be traced with the responsible department or person. (d) Interim profit measurement and inventory valuation: Actual profit is known only after the closure of the account. Few organisations used to prepare profitability statement for some interim periods as per the requirement of the management. To arrive at the profitability figure standard costs are deducted from the revenue.
Process of Standard Costing	The process of standard cost is as below: (i) Setting of Standards: The first step is to set standards which are to achieved, The process of standard setting is explained above. (ii) Ascertainment of actual costs: Actual cost for each component of cost is ascertained. Actual costs are ascertained from books of account, material invoices, wage sheet, charge slip etc. (iii) Comparison of actual cost and standard cost: Actual costs are compared with the standards costs and variances are determined. (iv) Investigation of variances: Variances arises are investigated for further action. Based on this performance is evaluated and appropriate actions are taken. (v) Disposition of variances: variances arise are disposed off by transferring it the relevant accounts (costing profit and loss account) as per the accounting method (plan) adopted.
Types of Variances:	Controllable and un-controllable variances: The purpose of the standard costing reports is to investigate the reasons for significant variances so as to identify the problems and take corrective action. Variances are broadly of two types, namely, controllable and uncontrollable. Controllable variances are those which can be controlled by the departmental heads whereas uncontrollable variances are those which are beyond their control. Responsibility centres are answerable for all adverse variances which are controllable and are appreciated for favourable variances. Controllability is a subjective matter and varies from situation to situation. If the uncontrollable variances are of significant nature and are persistent, the standard may need revision. Favourable and Adverse variance: Favourable variances are those which are profitable for the company and Adverse variances are those which causes loss to the company. While computing cost variances favourable variance means actual cost is less than standard cost. On the other hand adverse variance means actual cost is exceeding standard cost. The situation will be reversed for sales variance. Favourable variances are profitable for the company and on contrary adverse variance causes loss to the company. Hence, these are credited and debited in the costing profit and loss account respectively. Favourable variance in short denoted by capital 'F' and adverse

	variances by capital 'A'. Students may note that signs of favourable and adverse variance may or may not match exactly with mathematical signs i.e. (+) or (-).
Disposition of Variances:	There is no unanimity of opinion in regard to disposition of variances. The following are the various methods:- (a) Write off all variances to profit and loss account or cost of sales every month. (b) Distribute the variance prorata to cost of sales, work-in-progress and finished good stocks. (c) Write off quantity variance to profit and loss account but the price variances may be spread over cost of sales, work-in-progress and finished goods stocks. The reason behind apportioning price variances to inventories and cost of sales is that they represent cost although they are described as variance.
Advantages of Budgetary Control System	• The use of budgetary control system enables the management of a business concern to conduct its business activities in the efficient manner. • It is a powerful instrument used by business houses for the control of their expenditure. It infact provides a yardstick for measuring and evaluating the performance of individuals and their departments. • It reveals the deviations to management, from the budgeted figures after making a comparison with actual figures. • Effective utilisation of various resources like—men, material, machinery and money is made possible, as the production is planned after taking them into account. • It helps in the review of current trends and framing of future policies. • It creates suitable conditions for the implementation of standard costing system in a business organisation. • It inculcates the feeling of cost consciousness among workers.
Limitations of Budgetary Control System :	The limitations of budgetary control system are as follows : (i) Budgets may or may not be true, as they are based on estimates. (ii) Budgets are considered as rigid document. (iii) Budgets cannot be executed automatically. (iv) Staff co-operation is usually not available during budgetary control exercise. (v) Its implementation is quite expensive.
Fixed budget -	• <u>Definition</u>: According to Chartered Institute of Management Accountants of England, "a fixed budget, is a budget designed to remain unchanged irrespective of the level of activity actually attained". • <u>One Activity Level</u>: A fixed budget shows the expected results of a responsibility center for only one activity level. • <u>No Change</u>: Once the budget has been determined, it is not changed, even if the activity changes. • <u>Application of Fixed Budgets</u>: Fixed budgeting is used by many service companies and for some administrative functions of manufacturing companies, such as purchasing, engineering, and accounting. • Fixed Budget is used as an effective tool of cost control. In case, the level of activity attained is different from the level of activity for budgeting

	purposes, the fixed budget becomes ineffective. Such a budget is quite suitable for fixed expenses. It is also known as a <u>static budget</u>.
Master budget	- Master budget is a <u>consolidated summary</u> of the various functional budgets. - A master budget is the summary budget incorporating its component functional budget and which is finally approved, adopted and employed. - It is the culmination of the preparation of all other budgets like the sales budget, production budget, purchase budget, etc. - It consists in reality of the budgeted profit and loss account, the balance sheet and budgeted cash flow statement.
Flexible budget	Unlike static budgets, flexible budgets show the expected results of a responsibility center for several activity levels. You can think of a flexible budget as a series of static budgets for different levels of activity. Such budgets are especially useful in estimating and controlling factory costs and operating expenses. It is more realistic and practicable because it gives due consideration to cost behaviours at different levels of activity. While preparing a flexible budget the expenses are classified into three categories viz. - Fixed, - Variable, and - Semi-variable. Semi-variable expenses are further segregated into fixed and variable expenses. Flexible budgeting may be resorted to under following situations: - In the case of new business venture due to its typical nature it may be difficult to forecast the demand of a product accurately. - Where the business is dependent upon the mercy of nature e.g., a person dealing in wool trade may have enough market if temperature goes below the freezing point. - In the case of labour intensive industry where the production of the concern is dependent upon the availability of labour.
Advantages of Zero Base Budgeting:	- ZBB process identifies inefficient operation and considers every time alternative ways of performing the same task. - ZBB is used in identification of wastage and obsolescent items of expenditure. - ZBB is very much useful for the staff and support areas of an organisation such as research and development, quality control, pollution control, etc - The core resources will be allocated more efficiently according to the priority of program. - Departmental budgets are closely linked with corporate objectives <u>Limitation of ZBB:</u> - ZBB requires skilled and trained managerial staff - ZBB is time consuming as well as costly - ZBB faces various operational problems during the implementation of such technique. - ZBB requires full support of top management.

Functional budgets:	i. Sales budget ii. Production budget iii. Materials budget iv. Labour budget v. Manufacturing overhead budget vi. Administration cost budget vii. Plant utilization budget viii. Cash budget ix. Capital Expenditure budget x. Research and Development budget
ZERO BASE BUDGETING	• Zero base budgeting is a <u>revolutionary concept</u> of planning the future activities and there is a sharp contradiction from conventional budgeting. • Zero base budgeting, may be better termed as “<u>De Nova Budgeting</u>” or budgeting from the beginning without any reference to any base past budgets and actual happening. • Zero base budgeting may be <u>defined as</u> “a planning and budgeting process which requires each manager to justify his entire budget requested in detail from scratch (hence zero base) and shifts the burden of proof to each manager to justify why he should spend any money at all. The approach requires that all activities be analyzed in decision packages which are evaluated by systematic analysis and ranked in order of importance.” • It is a technique which complements and links the existing planning, budgeting and review processes. It identifies alternative and efficient methods of utilizing limited resources in effective attainment of selected benefits. • It is a <u>flexible management approach</u> which provides a credible rationale for reallocating resources by focusing on systematic review and justification of the funding and performance levels of current programs of activities. • The concept of ZBB was <u>developed in USA</u>. • Under ZBB, each program and each of its constituent part is challenged for its very inclusion in each year’s budget. Program objectives are also re-examined with a view to start things afresh. It requires analysis and evaluation of each program in order to justify its inclusion or exclusion from the final budget. <u>Advantages of ZBB:</u> (i) ZBB is not based on incremental approach, so it promotes operational efficiency because it requires managers to review and justify their activities or the funds requested. (ii) Since this system requires participation of all managers, preparation of budgets, responsibilities of all levels at management in successful execution of budgetary system can be ensured. (iii) This technique is relatively elastic because budgets are prepared every year on a zero base. This system makes it obligatory to develop financial planning and management information system. (iv) This system weeds out inefficiency and reduces the cost of production because every budget proposal is evaluated on the basis of cost benefit analysis. (v) It provides the organisation with a systematic way to evaluate different operations and programs undertaken by the management. It enables

	management to allocate resources according to priority of the programs. (vi) it is helpful to the management in making optimum allocation of scarce resources because a unique aspect of zero base budgeting is the evaluation of both current and proposed expenditure and placing it some order of priority. <u>Criticism against ZBB:</u> (i) Defining the decision units and decision packages is rather difficult. (ii) ZBB requires a lot of training for managers. (iii) Cost of preparing the various packages may be very high in large firms involving large number of decision packages. (iv) it may lay more emphasis on short term benefits to the detriment of long term objectives of the organisation. (v) It will lead to enormous increase in paper work created by the decision packages. The assumptions about cost and benefits in each package must be continually up dated and new packages developed as soon as new activities emerge. (vi) Where objectives are very difficult to quantify as in research and development, zero base budgeting does not offer any significant control advantage.
PERFORMANCE BUDGETING:	• The concept of performance budgeting relates to greater management efficiency specially in government work. With a view to introducing a system's approach, the concept of performance budgeting was developed and as such there was a shift from financial classification to Cost or Objective Classification. • Performance budgeting, is therefore, looked upon as a budget based on functions, activities and projects and is linked to the budgetary system based on objective classification of expenditure. • The purpose of performance budgeting is to focus attention upon the work to be done, services to be rendered rather than things to be spend for or acquired. • In performance budgeting, emphasis is shifted from control inputs to efficient and economic management of functions and objectives. • Performance budgeting takes a system view of activities by trying to associate the inputs of the expenditure with the output of accomplishment in terms of services, benefits, etc. in performance budgeting, the objective of the budget makers and setting the task and sub task for accomplishment of the defined objectives are to be clearly decided well in advance before budgetary allocations of inputs are made. The <u>main purpose</u> of performance budgeting are: (i) TO review at every stage, and at every level of organisation, so as to measure progress towards the short term and long term objectives. (ii) To inter relate physical and financial aspects of every programme, project or activity. (iii) TO facilitate more effective performance audit (iv) TO assess the effects of the decision making of supervisor to the middle and top managers. (v) To bring annual plans and budgets in line with the short and long term plan objectives. (vi) To present a comprehensive operational document showing the complete planning fabric of the programme and prospectus their objectives interwoven with the financial and physical aspects.

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| | <ul style="list-style-type: none">• However, Performance budgeting has <u>certain limitations</u> such as difficulty in classifying Programmes and activities, problems of evaluation of various schemes, relegation to the background of important Programmes. Moreover, the technique enables only quantitative evaluation scheme and sometimes the needed results cannot be measured. |
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THEORY ON FINANCIAL MANAGEMENT (IPC)

TYPES OF FINANCING

BRIDGE FINANCE:	• Bridge finance refers to loans taken by a company normally from commercial banks for a short period, pending disbursement of loans sanctioned by financial institutions. • Normally, it takes time for financial institutions to disburse loans to companies. However, once the loans are approved by the term lending institutions, companies, in order not to lose further time in starting their projects, arrange short term loans from commercial banks. • Bridge loans are also provided by financial institutions pending the signing of regular term loan agreement, which may be delayed due to non-compliance of conditions stipulated by the institutions while sanctioning the loan. • The bridge loans are repaid/ adjusted out of the term loans as and when disbursed by the concerned institutions. • Bridge loans are normally secured by hypothecating movable assets, personal guarantees and demand promissory notes. Generally, the rate of interest on bridge finance is higher as compared with that on term loans.
VENTURE CAPITAL FINANCING	• The venture capital financing refers to financing of <i>new high risky venture</i> promoted by <i>qualified entrepreneurs</i> who <i>lack experience and funds</i> to give shape to their ideas. • In broad sense, under venture capital financing venture capitalist make investment to purchase equity or debt securities from inexperienced entrepreneurs who undertake highly risky ventures with a potential of success. • In India , Venture Capital financing was first the responsibility of <i>developmental financial institutions</i> such as ✓ The Industrial Development Bank of India (IDBI) , ✓ the Technical Development and Information Corporation of India(now known as ICICI) and ✓ the State Finance Corporations(SFCs). • In the year 1988, the Government of India took a policy initiative and announced guidelines for Venture Capital Funds (VCFs). In the same year, a Technology Development Fund (TDF) financed by the levy on all payments for technology imports was established This fund was meant to <i>facilitate the financing of innovative and high risk technology</i> programmes through the IDBI. • The guidelines mentioned above restricted the setting up of Venture Capital Funds by banks and financial institutions only. Subsequently guidelines were issued in the month of September 1995, for overseas investment in Venture Capital in India. • A major development in venture capital financing in India was in the year 1996 when the Securities and Exchange Board of India (SEBI) issued guidelines for venture capital funds to follow. These guidelines described

	a venture capital fund as a fund established in the form of a company or trust, which raises money through loans, donations, issue of securities or units and makes or proposes to make investments in accordance with the regulations. This move was instrumental in the entry of various foreign venture capital funds to enter India.. The guidelines were further amended in April 2000 with the objective of fuelling the growth of Venture Capital activities in India. A few venture capital companies operate as both investment and fund management companies; others set up funds and function as asset management companies. • It is hoped that the changes in the guidelines for the implementation of venture capital schemes in the country would encourage more funds to be set up to give the required momentum for venture capital investment in India. Some common methods of venture capital financing are as follows: Equity financing : The venture capital undertakings generally requires funds for a longer period but may not be able to provide returns to the investors during the initial stages. Therefore, the venture capital finance is generally provided by way of equity share capital. The equity contribution of venture capital firm does not exceed 49% of the total equity capital of venture capital undertakings so that the effective control and ownership remains with the entrepreneur. Conditional loan: A conditional loan is repayable in the form of a royalty after the venture is able to generate sales. No interest is paid on such loans. In India venture capital financiers charge royalty ranging between 2 and 15 per cent; actual rate depends on other factors of the venture such as gestation period, cash flow patterns, risk and other factors of the enterprise. Some Venture capital financiers give a choice to the enterprise of paying a high rate of interest (which could be well above 20 per cent) instead of royalty on sales once it becomes commercially sounds. Income note: It is a hybrid security which combines the features of both conventional loan and conditional loan. The entrepreneur has to pay both interest and royalty on sales but at substantially low rates. IDBI's VCF provides funding equal to 80 – 87.50% of the projects cost for commercial application of indigenous technology. Participating debenture: Such security carries charges in three phases — in the start up phase no interest is charged, next stage a low rate of interest is charged up to a particular level of operation, after that, a high rate of interest is required to be paid.
DEBT SECURITISATION:	<i>It is a method of recycling of funds. It is especially beneficial to financial intermediaries to support the lending volumes. Assets generating steady cash flows are packaged together and against this asset pool, market securities can be issued, e.g. housing finance, auto loans, and credit card receivables.</i> Process of Debt Securitisation The origination function – A borrower seeks a loan from a finance company, bank, HDFC. The credit worthiness of borrower is evaluated and contract is entered into with repayment schedule structured over the life of the loan.

	(ii) The pooling function – Similar loans on receivables are clubbed together to create an underlying pool of assets. The pool is transferred in favour of Special purpose Vehicle (SPV), which acts as a trustee for investors. (iii) The securitization function – SPV will structure and issue securities on the basis of asset pool. The securities carry a coupon and expected maturity which can be asset-based/mortgage based. These are generally sold to investors through merchant bankers. Investors are – pension funds, mutual funds, insurance funds. The process of securitization is generally without recourse i.e. investors bear the credit risk and issuer is under an obligation to pay to investors only if the cash flows are received by him from the collateral. The benefits to the originator are that assets are shifted off the balance sheet, thus giving the originator recourse to off-balance sheet funding. Benefits to the Originator (i) The assets are shifted off the balance sheet, thus giving the originator recourse to off balance sheet funding. (ii) It converts illiquid assets to liquid portfolio. (iii) It facilitates better balance sheet management as assets are transferred off balance sheet facilitating satisfaction of capital adequacy norms. (iv) The originator's credit rating enhances. For the investor securitizations opens up new investment avenues. Though the investor bears the credit risk, the securities are tied up to definite assets. As compared to factoring or bill discounting which largely solve the problems of short term trade financing, securitizations helps to convert a stream of cash receivables into a source of long term finance.
LEASE FINANCING:	• Leasing is a general contract between the owner and user of the asset over a specified period of time. • The asset is purchased initially by the lessor (leasing company) and thereafter leased to the user (Lessee company) which pays a specified rent at periodical intervals. • Thus, leasing is an alternative to the purchase of an asset out of own or borrowed funds. Moreover, lease finance can be arranged much faster as compared to term loans from financial institutions. • In recent years, leasing has become a popular source of financing in India. • From the lessee's point of view, leasing has the attraction of eliminating immediate cash outflow, and the lease rentals can be deducted for computing the total income under the Income tax Act. As against this, buying has the advantages of depreciation allowance (including additional depreciation) and interest on borrowed capital being tax-deductible. Thus, an evaluation of the two alternatives is to be made in order to take a decision. Practical problems for lease financing are covered at Final level in paper of Strategic Financial Management.

SEED CAPITAL ASSISTANCE:	a) The Seed capital assistance scheme is <u>designed by IDBI for professionally or technically qualified entrepreneurs</u> and/or persons possessing relevant experience, skills and entrepreneurial traits. b) All the projects eligible for financial assistance from IDBI, directly or indirectly through refinance are eligible under the scheme. <u>The project cost should not exceed Rs. 2 crores</u> and the maximum assistance under the project will be restricted to <u>50% of the required promoter's contribution or Rs. 15 lacs whichever is lower.</u> c) The Seed Capital Assistance is interest free but carries a <u>service charge of one per cent per annum</u> for the first five years and at increasing rate thereafter. However, IDBI will have the option to charge interest at such rate as may be determined by IDBI on the loan if the financial position and profitability of the company so permits during the currency of the loan. The repayment schedule is fixed depending upon the repaying capacity of the unit with an initial moratorium upto five years. d) For projects with a <u>project cost exceeding Rs. 200 lacs</u>, seed capital may be obtained from the <u>Risk Capital and Technology Corporation Ltd. (RCTC)</u> e) For small projects costing upto Rs. 5 lacs, assistance under the National Equity Fund of the SIDBI may be availed.
EXTERNAL COMMERCIAL BORROWINGS (ECB) :	a) ECBs refer to commercial loans (in the form of bank loans , buyers credit, suppliers credit, securitised instruments (e.g. floating rate notes and fixed rate bonds) availed from non resident lenders with minimum average maturity of 3 years. Borrowers can raise ECBs through internationally recognised sources like (i) international banks, (ii) international capital markets, (iii) multilateral financial institutions such as the IFC, ADB etc, (iv) export credit agencies, (v) suppliers of equipment, (vi) foreign collaborators and (vii) foreign equity holders. b) External Commercial Borrowings can be accessed under two routes viz (i) Automatic route and (ii) Approval route. c) Under the Automatic route there is no need to take the RBI/Government approval whereas such approval is necessary under the Approval route. d) Company's registered under the Companies Act and NGOs engaged in micro finance activities are eligible for the Automatic Route where as Financial Institutions and Banks dealing exclusively in infrastructure or export finance and the ones which had participated in the textile and steel sector restructuring packages as approved by the government are required to take the Approval Route.
EURO BONDS:	Euro bonds are debt instruments which are not denominated in the currency of the country in which they are issued. E.g. a Yen note floated in Germany. Such bonds are generally issued in a bearer form rather than as registered bonds and in such cases they do not contain the investor's names or the country of their origin. These bonds are an attractive proposition to investors seeking privacy.
MEDIUM TERM NOTES	Certain issuers need frequent financing through the Bond route including that of the Euro bond. However it may be costly and ineffective to go in for frequent issues. Instead, investors can follow the MTN programme. Under this programme, several lots of bonds can be issued, all having different

	features e.g. different coupon rates, different currencies etc. The timing of each lot can be decided keeping in mind the future market opportunities. The entire documentation and various regulatory approvals can be taken at one point of time														
AMERICAN DEPOSITORY DEPOSITS (ADR):	a) These are securities offered by non-US companies who want to list on any of the US exchange. Each ADR represents a certain number of a company's regular shares. b) ADRs allow US investors to buy shares of these companies without the costs of investing directly in a foreign stock exchange. c) ADRs are issued by an approved New York bank or trust company against the deposit of the original shares. These are deposited in a custodial account in the US. Such receipts have to be issued in accordance with the provisions stipulated by the SEC. USA which are very stringent. d) ADRs can be traded either by trading existing ADRs or purchasing the shares in the issuer's home market and having new ADRs created, based upon availability and market conditions. e) When trading in existing ADRs, the trade is executed on the secondary market on the New York Stock Exchange (NYSE) through Depository Trust Company (DTC) without involvement from foreign brokers or custodians. The process of buying new, issued ADRs goes through US brokers, Helsinki Exchanges and DTC as well as Deutsche Bank. When transactions are made, the ADRs change hands, not the certificates. This eliminates the actual transfer of stock certificates between the US and foreign countries. f) In a bid to bypass the stringent disclosure norms mandated by the SEC for equity shares, the Indian companies have however, chosen the indirect route to tap the vast American financial market through private debt placement of GDRs listed in London and Luxemburg Stock Exchanges. g) The Indian companies have preferred the GDRs to ADRs because the US market exposes them to a higher level or responsibility than a European listing in the areas of disclosure, costs, liabilities and timing. The SECs regulations set up to protect the retail investor base are some what more stringent and onerous, even for companies already listed and held by retail investors in their home country. The most onerous aspect of a US listing for the companies is to provide full, half yearly and quarterly accounts in accordance with, or at least reconciled with US GAAPs.														
GLOBAL DEPOSITORY RECEIPT (GDRS):	These are negotiable certificate held in the bank of one country representing a specific number of shares of a stock traded on the exchange of another country. These financial instruments are used by companies to raise capital in either dollars or Euros. These are mainly traded in European countries and particularly in London. <table><tr><th>Basis of Diff</th><th>GDR</th><th>ADR</th></tr><tr><td>Meaning</td><td>The depository receipts in the world market is called GDR</td><td>The depository receipts in the US market in called ADR</td></tr><tr><td>Voting Right</td><td>GDRs do not have voting rights</td><td>ADRs may be with or without voting rights</td></tr><tr><td>Scope</td><td>GDRs are more preferred</td><td>ADRs provide certain stringent</td></tr></table>			Basis of Diff	GDR	ADR	Meaning	The depository receipts in the world market is called GDR	The depository receipts in the US market in called ADR	Voting Right	GDRs do not have voting rights	ADRs may be with or without voting rights	Scope	GDRs are more preferred	ADRs provide certain stringent
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		due to their easy operation	rules to be followed which makes them less preferred.
	Cost involved	The cost involved in operation of GDR is less than that of ADR.	The cost involved in operation of ADR is comparatively high due to the formalities to be fulfilled under US GAAP & SEC
ADRs/GDRs and the Indian Scenario : Indian companies are shedding their reluctance to tap the US markets. Infosys Technologies was the first Indian company to be listed on Nasdaq in 1999. However, the first Indian firm to issue sponsored GDR or ADR was Reliance industries Limited. Beside, these two companies there are several other Indian firms are also listed in the overseas bourses. These are Satyam Computer, Wipro, MTNL, VSNL, State Bank of India, Tata Motors, Dr Reddy's Lab, Ranbaxy, Larsen & Toubro, ITC, ICICI Bank, Hindalco, HDFC Bank and Bajaj Auto.			
INDIAN DEPOSITORY RECEIPTS (IDRS):	a) The concept of the depository receipt mechanism which is used to raise funds in foreign currency has been applied in the Indian Capital Market through the issue of Indian Depository Receipts (IDRs). IDRs are similar to ADRs/GDRs in the sense that foreign companies can issue IDRs to raise funds from the Indian Capital Market in the same lines as an Indian company uses ADRs/GDRs to raise foreign capital. b) The IDRs are listed and traded in India in the same way as other Indian securities are traded. The actual shares underlying the IDRs would be held by an overseas custodian, which shall authorize the Indian depository to issue the IDRs. c) The overseas custodian is required to be a foreign bank having a place of business in India and needs approval from the Finance Ministry for acting as a custodian while the Indian Depository needs to be registered with SEBI.		
ZERO COUPON BONDS	A Zero Coupon Bonds does not carry any interest but it is sold by the issuing company at a discount. The difference between the discounted value and maturing or face value represents the interest to be earned by the investor on such bonds.		
INTER CORPORATE DEPOSITS	The companies can borrow funds for a short period say 6 months from other companies which have surplus liquidity. The rate of interest on inter corporate deposits varies depending upon the amount involved and time period.		
CERTIFICATE OF DEPOSIT (CD):	The certificate of deposit is a document of title similar to a time deposit receipt issued by a bank except that there is no prescribed interest rate on such funds. The main advantage of CD is that banker is not required to encash the deposit before maturity period and the investor is assured of liquidity because he can sell the CD in secondary market.		
OVERDRAFT:	a) Under this facility, customers are allowed to withdraw in excess of credit balance standing in their Current Deposit Account. b) A fixed limit is therefore granted to the borrower within which the		

	borrower is allowed to overdraw his account. Opening of an overdraft account requires that a current account will have to be formally opened. c) Though overdrafts are repayable on demand, they generally continue for long periods by annual renewals of the limits. This is a convenient arrangement for the borrower as he is in a position to avail of the limit sanctioned, according to his requirements. Interest is charged on daily balances. d) Since these accounts are operative like cash credit and current accounts, cheque books are provided. As in the case of a loan account the security in an overdraft account may be shares, debentures and Government securities. In special cases, life insurance policies and fixed deposit receipts are also accepted.
CASH CREDITS:	a) Cash Credit is an arrangement under which a customer is allowed an advance up to certain limit against credit granted by bank. Under this arrangement, a customer need not borrow the entire amount of advance at one time; he can only draw to the extent of his requirements and deposit his surplus funds in his account. b) Interest is not charged on the full amount of the advance but on the amount actually availed of by him. Generally cash credit limits are sanctioned against the security of goods by way of pledge or hypothecation. The borrower can also provide alternative security of goods by way of pledge or hypothecation. c) Though these accounts are repayable on demand, banks usually do not recall such advances, unless they are compelled to do so by adverse factors. Hypothecation is an equitable charge on movable goods for an amount of debt where neither possession nor ownership is passed on to the creditor. In case of pledge, the borrower delivers the goods to the creditor as security for repayment of debt. d) Since the banker, as creditor, is in possession of the goods, he is fully secured and in case of emergency he can fall back on the goods for realization of his advance under proper notice to the borrower.
PACKING CREDIT	Packing credit is an advance made available by banks to an exporter. Any exporter, having at hand a firm export order placed with him by his foreign buyer on an irrevocable letter of credit opened in his favour, can approach a bank for availing of packing credit. An advance so taken by an exporter is required to be liquidated within 180 days from the date of its commencement by negotiation of export bills or receipt of export proceeds in an approved manner. Thus Packing Credit is essentially a short-term advance. Normally, banks insist upon their customers to lodge the irrevocable letters of credit opened in favour of the customer by the overseas buyers. The letter of credit and firms' sale contracts not only serve as evidence of a definite arrangement for realisation of the export proceeds but also indicate the amount of finance required by the exporter. Packing Credit, in the case of customers of long standing may also be granted against firm contracts entered into by them with overseas buyers. Packing credit may be of the following types: (i) Clean Packing credit: This is an advance made available to an exporter only on production of a firm export order or a letter of credit without exercising any charge or control over raw material or finished goods. It is a

	clean type of export advance. Each proposal is weighted according to particular requirements of the trade and credit worthiness of the exporter. A suitable margin has to be maintained. Also, Export Credit Guarantee Corporation (ECGC) cover should be obtained by the bank. (ii) Packing credit against hypothecation of goods: Export finance is made available on certain terms and conditions where the exporter has pledgeable interest and the goods are hypothecated to the bank as security with stipulated margin. At the time of utilising the advance, the exporter is required to submit alongwith the firm export order or letter of credit, relative stock statements and thereafter continue submitting them every fortnight and whenever there is any movement in stocks. (iii) Packing credit against pledge of goods: Export finance is made available on certain terms and conditions where the exportable finished goods are pledged to the banks with approved clearing agents who will ship the same from time to time as required by the exporter. The possession of the goods so pledged lies with the bank and is kept under its lock and key.
FINANCIAL INSTRUMENTS IN INTERNATIONAL FINANCIAL MARKET	Some of the various financial instruments dealt with in the international market are: (a) Euro Bonds (b) Foreign Bonds (c) Fully Hedged Bonds (d) Medium Term Notes (e) Floating Rate Notes (f) External Commercial Borrowings (g) Foreign Currency Futures (h) Foreign Currency Option (i) Euro Commercial Papers.
DEEP DISCOUNT BONDS:	• Deep discount bonds are a form of <i>zero-interest bonds</i>. • These bonds are <i>sold at discounted value</i> and • On maturity; face value is paid to the investors. • In such bonds, there is no interest payout during the lock- in period. • The investors can sell the bonds in stock market and realise the difference between face value and market price as capital gain. • <i>IDBI</i> was the first to issue deep discount bonds in India in <i>January 1993</i>. • The bond of a face value of Rs. 1 lakh was sold for ₹ 2700 with a maturity period of 25 years.
COMMERCIAL PAPER (CP)	A commercial paper is an unsecured money market instrument issued in the form of a promissory note. Since the CP represents an unsecured borrowing in the money market, the regulation of CP comes under the purview of the Reserve Bank of India which issued guidelines in 1990 on the basis of the recommendations of the Vaghul Working Group. These guidelines were aimed at: (i) Enabling the highly rated corporate borrowers to diversify their sources of short term borrowings, and (ii) To provide an additional instrument to the short term investors. It can be issued for maturities between 7 days and a maximum upto one

	year from the date of issue. These can be issued in denominations of ₹ 5 lakh or multiples thereof. All eligible issuers are required to get the credit rating from credit rating agencies.
PLOUGHING BACK OF PROFITS	Long-term funds may also be provided by accumulating the profits of the company and ploughing them back into business. Such funds belong to the ordinary shareholders and increase the net worth of the company. A public limited company must plough back a reasonable amount of its profits each year keeping in view the legal requirements in this regard and its own expansion plans. Such funds also entail almost no risk. Further, control of present owners is also not diluted by retaining profits.
SECURED PREMIUM NOTES	- Secured premium notes are issued along with <u>detachable warrants</u> and are redeemable after a notified period of say <u>4 to 7 years</u>. This is a kind of NCD attached with warrant. - It was <u>first introduced by TISCO</u>, which issued the SPNs to existing shareholders on right basis. Subsequently the SPNs will be repaid in some number of equal instalments. - The warrant attached to SPNs gives the holder the right to apply for and get allotment of equity shares as per the conditions within the time period notified by the company.
CLOSED AND OPEN-ENDED LEASE	In the close-ended lease, the assets gets transferred to the lessor at the end of lease, the risk of obsolescence, residual values etc. remain with the lessor being the legal owner of the assets. In the open-ended lease, the lessee has the option of purchasing the assets at the end of lease period.
ADVANTAGES OF PREFERENCE SHARE CAPITAL	<u>Advantages of Issue of Preference Shares are:</u> (i) No dilution in EPS on enlarged capital base. (ii) There is no risk of takeover as the preference shareholders do not have voting rights. (iii) There is leveraging advantage as it bears a fixed charge. (iv) The preference dividends are fixed and pre-decided. Preference shareholders do not participate in surplus profit as the ordinary shareholders. (v) Preference capital can be redeemed after a specified period.
Advantages of raising funds by issue of equity shares	<u>Advantages of Raising Funds by Issue of Equity Shares</u> (i) It is a permanent source of finance. Since such shares are not redeemable, the company has no liability for cash outflows associated with its redemption. (ii) Equity capital increases the company's financial base and thus helps further the borrowing powers of the company. (iii) The company is not obliged legally to pay dividends. Hence in times of

	uncertainties or when the company is not performing well, dividend payments can be reduced or even suspended. (iv) The company can make further issue of share capital by making a right issue.
Some of the forms of bank credit are	(i) Short Term Loans: In a loan account, the entire advance is disbursed at one time either in cash or by transfer to the current account of the borrower. It is a single advance and given against securities like shares, government securities, life insurance policies and fixed deposit receipts, etc. (ii) Overdraft: Under this facility, customers are allowed to withdraw in excess of credit balance standing in their Current Account. A fixed limit is therefore granted to the borrower within which the borrower is allowed to overdraw his account. (iii) Clean Overdrafts: Request for clean advances are entertained only from parties which are financially sound and reputed for their integrity. The bank has to rely upon the personal security of the borrowers. (iv) Cash Credits: Cash Credit is an arrangement under which a customer is allowed an advance up to certain limit against credit granted by bank. Interest is not charged on the full amount of the advance but on the amount actually availed of by him. (v) Advances against goods: Goods are charged to the bank either by way of pledge or by way of hypothecation. Goods include all forms of movables which are offered to the bank as security. (vi) Bills Purchased/Discounted: These advances are allowed against the security of bills which may be clean or documentary. Usance bills maturing at a future date or sight are discounted by the banks for approved parties. The borrower is paid the present worth and the bank collects the full amount on maturity. (vii) Advance against documents of title to goods: A document becomes a document of title to goods when its possession is recognised by law or business custom as possession of the goods like bill of lading, dock warehouse keeper's certificate, railway receipt, etc. An advance against the pledge of such documents is an advance against the pledge of goods themselves. (viii) Advance against supply of bills: Advances against bills for supply of goods to government or semi-government departments against firm orders after acceptance of tender fall under this category. It is this debt that is assigned to the bank by endorsement of supply bills and executing irrevocable power of attorney in favour of the banks for receiving the amount of supply bills from the Government departments. (Note: Students may answer any four of the above forms of bank credit.)

SCOPE AND OBJECTIVE OF FINANCIAL MANGEMENT

FUNCTIONS OF FINANCE MANAGER	The finance manager occupies an important position in the organizational structure. Earlier his role was just confined to raising of funds from a number of sources. Today his functions are multidimensional. The functions by today's finance managers are as below: 1. Forecasting the financial requirement: a finance manager has to make an estimate and forecast accordingly the financial requirements of the firm. 2. Planning: a finance manager has to plan out how the funds will be procured and how the acquired funds will be allocated. 3. Procurement of funds: a finance manager has to select the best source of finance from a large number of options available. The finance manager's decisions regarding the selection of source is influenced by the need, purpose, object and the cost involved. 4. Allocation of Funds: a finance manager has also to invest or allocate funds in best possible ways. In doing so a finance manager cannot ignore the principles of safety, profitability and liquidity. 5. Maintaining proper Liquidity: A finance manager has also to manage the cash in an efficient way. Cash is to be managed in such a way that neither there is scarcity of it nor does it remain idle earning no return on it. 6. Dividend decision: A Finance Manager has also to decide whether or not to declare a dividend. If dividends are to be declared, that what amount is to be paid to the shareholder and what amount is to be retained in the business. 7. Evaluation of Financial performance: A finance manager has to implement a system of financial control to evaluate the financial performance of various units and then take corrective measures whenever needed. 8. Financial Negotiations: in order to procure and invest funds, a finance manager has to negotiate with various financial institutions, banks, public depositors in a meticulous way. 9. To ensure proper use of surplus: A finance manager has to see to the proper use of surplus fund. This is necessary for expansion and diversification plan and also for protecting the interest of share holders.
PROFIT MAXIMIZATION VERSUS WEALTH MAXIMIZATION PRINCIPLE	Profit Maximization: Profit maximization is the main objective of business because: (i) Profit acts as a measure of efficiency and (ii) It serves as a protection against risk. Arguments in favor of profit maximization: (i) When profit earning is the main aim of business the ultimate objective should be profit maximization. (ii) Future is uncertain. A firm should earn more and more profit to meet the future contingencies.

	(iii) Profit maximization is justified on the grounds of rationality as profits act as a measure of efficiency and economic prosperity. Arguments against profit maximization: (i) It leads to exploitation of workers and consumers. (ii) It ignores the risk factors associated with profits. (iii) Profit in itself is a vague concept and means differently to different people. (iv) It is a narrow concept at the cost of social and moral obligations. Wealth Maximization: Wealth maximization is considered as the appropriate objective of an enterprise. When the firms maximizes the stakeholder's wealth, the individual stakeholder can use this wealth to maximize his individual utility. Wealth maximization is the single substitute for a stake holder's utility. Arguments in favor of wealth maximization: (i) Due to wealth maximization, the short term money lenders get their payments in time. (ii) The long time lenders too get a fixed rate of interest on their investments. (iii) The employee share in the wealth gets increased. (iv) The various resources are put to economical and efficient use. Arguments against wealth maximization: (i) It is socially undesirable (ii) It is not a descriptive idea (iii) Only stock holders wealth maximization is endangered when ownership and management are separate
CHANGING SCENARIO OF FINANCIAL MANAGEMENT IN INDIA:	Modern financial management has come a long way from traditional corporate finance. As the economy is opening up and global resources are being tapped, the opportunities available to a finance manager have no limits. Financial management is passing through an era of experimentation and excitement as a large part of finance activities are carried out today. A few instances of these are mentioned as below: (i) Optimum debt equity mix is possible. (ii) Treasury management (iii) Risk management due to introduction of option and future trading. (iv) Raising resources globally through ADRs/GDRs. (v) The rupee has become fully convertible. (vi) Share buy backs and reverse book building\ (vii) Free pricing and book building for IPOs, Seasoned equity offering.
INTERRELATION BETWEEN INVESTMENT, FINANCING & DIVIDEND DECISIONS:	All the above three decisions are inter related because the ultimate aim of all these is wealth maximization. Moreover, they influence each other in one way or the other. For example, investment decision should be backed by the finance for which financing decisions are to be taken. The financing decision in turn influences and is influenced by dividend decisions. Let us examine the three decisions in relation to their inter relationship:

	1. <u>Investment decision</u>: the funds once procured have to be allocated to the various projects. This requires proper investment decision. The investment decisions are taken after careful analysis of various projects through capital budgeting & risk analysis. 2. <u>Financing Decisions</u>: there are various sources of funds. A finance manager has to select the best source of financing from a large number of options available. The financing decisions regarding selection of source and internal financing depends upon the need, purpose, object and the cost involved. The finance manager has also to maintain a proper balance between long term & short term loan. He has also to ensure a proper mix of loans funds and owner's fund which will yield maximum return to the shareholders. 3. <u>Dividend Decision</u>: A finance manager has also to decide whether or not to declare dividend. If dividend are to be declared then what portion is to be paid to the shareholder and which portion is to be retained in the business.
TWO BASIC FUNCTIONS OF FINANCIAL MANAGEMENT:	Procurement of Funds: funds can be obtained from different sources having different characteristics in terms of risk, cost and control. The funds raised from the issue of equity shares are the best from the risk point of view since repayment is required only at the time of liquidation. However, it is also the most costly source of finance due to dividend expectations. on the other hand, debentures are cheaper than equity shares due to their tax advantage. However, they are usually riskier than equity shares. There are thus, risk, cost and control considerations which a finance manager must consider while procuring funds. The cost of funds should be at the minimum level for that a proper planning of risk and control factors must be carried out. Effective utilisation of funds: the finance manager has to ensure that funds are not kept idle or there is no improper use of funds. The funds are to be invested in a manner such that they generate returns higher than the cost of capital to the firm. Besides this, decisions to invest in fixed assets are to be taken only after sound analysis using capital budgeting techniques. Similarly, adequate working capital should be maintained so as to avoid risk of insolvency.
FINANCE FUNCTION	The finance function is most important for all business enterprises. It remains a focus of all activities. It starts with the setting up of an enterprise. It is concerned with raising of funds, deciding the cheapest source of finance, utilization of funds raised, making provision for refund when money is not required in the business, deciding the most profitable investment, managing the funds raised and paying returns to the providers of funds in proportion to the risks undertaken by them. Therefore, it aims at acquiring sufficient funds, utilizing them properly, increasing the profitability of the organization and maximizing the value of the organization and ultimately the shareholder's wealth.
DIFFERENTIATION BETWEEN FINANCIAL	Though financial management and financial accounting are closely related, still they differ in the treatment of funds and also with regards to decision - making.

**MANAGEMENT
AND FINANCIAL
ACCOUNTING:**

Treatment of Funds: In accounting, the measurement of funds is based on the accrual principle. The accrual based accounting data do not reflect fully the financial conditions of the organisation. An organisation which has earned profit (sales less expenses) may said to be profitable in the accounting sense but it may not be able to meet its current obligations due to shortage of liquidity as a result of say, uncollectible receivables. Whereas, the treatment of funds, in financial management is based on cash flows. The revenues are recognised only when cash is actually received (i.e. cash inflow) and expenses are recognised on actual payment (i.e. cash outflow). Thus, cash flow based returns help financial managers to avoid insolvency and achieve desired financial goals.

Decision-making: The chief focus of an accountant is to collect data and present the data while the financial manager's primary responsibility relates to financial planning, controlling and decision-making. Thus, in a way it can be stated that financial management begins where financial accounting ends.

FINANCIAL ANALYSIS: RATIO ANALYSIS

Significance of Ratio Analysis in decision making:	• Evaluation of Liquidity: the ability of a firm to meet its short term payment commitments is called as Liquidity. Current Ratio and Quick Ratio helps to assess the short term solvency of the firm. • Evaluation of Operating Efficiency: Ratio thrown light on the degree of efficiency in the management and utilisation of assets and resources. These are indicated by Activity or Performance or Turnover Ratios. These indicate the ability of the firm to generate revenue per rupee of investment in its assets. • Evaluation of Profitability: Profitability ratios like GP ratio, NP ratio are basic indicators of the profitability of the firm. In addition, various profitability indicators like Return on capital employed, EPS, Return on Assets are used to assess the financial performance. • Inter Firm & Intra Firm Comparison: Comparison of the firm's ratio with the industry average will help evaluate the firm's position vis-à-vis the industry. It will help in analyzing the firm's strength and weaknesses and take corrective action. Trend analysis of ratio over a period of years will indicate the direction of the firm's financial policies. • Budgeting: Ratios are not mere post mortem of operations. This help in depicting future financial positions. Ratios help predictor value and are helpful in planning and forecasting the business activities of the firm for future periods.
Limitation of Financial Ratios	(i) Concept of Ideal Ratio: the concept of ideal ratio is vague and there is no uniformity as to what an ideal ratio is. (ii) Thin line of difference between good and bad ratio: the line of difference between good and bad ratio is so thin that they are hardly separable. (iii) Financial Ratio are not independent: the financial ratio cannot be considered in isolation. They are inter related but not independent. Thus, decision taken on the basis of one ratio may not be correct. (iv) Misleading: various firms may follow different accounting policies. In such cases ratios of companies may be misleading. (v) Impact of Seasonal Factor: Seasonal factor brings boom or recession. Ratios may indicate different results during different periods. (vi) Impact of Inflation: under the impact of inflation, the ratio might not present true picture.
TYPES OF RATIOS	
Liquidity Ratios	Liquidity or short term solvency means ability of the business to pay its short term liabilities. Inability to pay short term liabilities affects its credibility as well as credit rating. Continuous default on the part of the business leads to commercial bankruptcy. Eventually such commercial bankruptcy may lead to its sickness and dissolution. Short term lenders and creditors of a business are very much interested to know its state of liquidity because of their

	financial stake. Current Ratio : $\frac{\text{Current Assets}}{\text{Current Liabilities}}$ Where, Current Assets= Inventories + Sundry Debtors + Cash & Bank Balances + Loans & Advances + Disposable Investments Current Liabilities= Sundry Creditors + Short term loans + Bank Overdraft + Cash Credit + Outstanding Expenses + Proposed Dividends + Provision for Taxation + Unclaimed Dividend The main question the ratio addresses is “does your business have enough current assets to meet the payment schedule of its current debts with a margin of safety for possible loss in current assets?” Standard Current Ratio is 1.33 but whether or not a specific ratio is satisfactory depends upon the nature of business and characteristics of its current assets and liabilities. Quick Ratio = $\frac{\text{Quick Assets}}{\text{Quick Liabilities}}$ Quick Assets= Current Assets – Inventories Quick Liabilities= Current Liabilities – Bank Overdraft – Cash Credit The Quick Ratio is a much more exacting measure than the Current Ratio. By excluding inventories, it concentrates on the really liquid assets, with value that is fairly certain. It helps answer the question: "If all sales revenues should disappear, could my business meet its current obligations with the readily convertible 'quick' funds on hand?" Quick Assets consist of only cash and near cash assets. Inventories are deducted from current assets on the belief that these are not 'near cash assets'. But in a seller's market inventories are also near cash assets. Moreover, just like lag in collection of debtors, there is a lag in conversion of inventories into finished goods and sundry debtors. Obviously slow moving inventories are not near cash assets. However, while calculating the quick ratio we have followed the conservatism convention. Quick liabilities are that portion of current liabilities which fall due immediately. Since bank overdraft and cash credit can be used as a source of finance as and when required, it is not included in the calculation of quick liabilities. An acid-test of 1:1 is considered satisfactory unless the majority of "quick assets" are in accounts receivable, and the pattern of accounts receivable collection lags behind the schedule for paying current liabilities.
Debt Equity Ratio	Debt Equity Ratio = $\frac{\text{Total Debt}}{\text{Shareholder's Equity}}$ A high ratio here means less protection for creditors. A low ratio, on the other hand, indicates a wider safety cushion (i.e., creditors feel the owner's funds can help absorb possible losses of income and capital). This ratio indicates the proportion of debt fund in relation to equity. This ratio is very often referred in capital structure decision as well as in the legislation dealing with the capital structure decisions (i.e. issue of shares and

	debentures). Lenders are also very keen to know this ratio since it shows relative weights of debt and equity. Debt equity ratio is the indicator of leverage. According to the traditional school, cost of capital firstly decreases due to the higher dose of leverage, reaches minimum and thereafter increases. So infinite increase in leverage (i.e. debt-equity ratio) is not possible. But according to Modigliani-Miller theory, cost of capital and leverage are independent of each other. But Modigliani-Miller theory is based on certain restrictive assumptions, namely, perfect capital market, homogeneous expectations by the present and prospective investors, presence of homogeneous risk class firms, 100% dividend pay-out, no tax situation, etc. And most of these assumptions are viewed as unrealistic. It is believed that leverage and cost of capital are not unrelated. Presently, there is no norm for maximum debt-equity ratio. Lending institutions generally set their own norms considering the capital intensity and other factors.
Debt Service Coverage Ratio	Debt Service Coverage Ratio = $\frac{\text{Earnings Available for Debt Service}}{\text{Interest} + \text{Installment}}$ Earnings Available for debt Service = Net profit + Non-cash operating expenses like depreciation and other amortizations + Non-operating adjustments like loss on sale of Fixed assets + Interest on Debt Fund. This ratio is the vital indicator to the lender to assess the extent of ability of the borrower to service the loan in regard to timely payment of interest and repayment of principal amount. It shows whether a business is earning sufficient profits to pay not only the interest charges but also the installment due of the principal amount.
Interest service coverage Ratio	Interest Coverage Ratio = $\frac{\text{EBIT}}{\text{Interest}}$ This ratio also known as “times interest earned ratio” indicates the firm’s ability to meet interest (and other fixed-charges) obligations. Earnings before interest and taxes are used in the numerator of this ratio because the ability to pay interest is not affected by tax burden as interest on debt funds is deductible expense. This ratio indicates the extent to which earnings may fall without causing any embarrassment to the firm regarding the payment of interest charges. A high interest coverage ratio means that an enterprise can easily meet its interest obligations even if earnings before interest and taxes suffer a considerable decline. A lower ratio indicates excessive use of debt or inefficient operations.
Preference dividend coverage ratio	Preference Dividend Coverage Ratio = $\frac{\text{EAT}}{\text{Preference Dividend}}$ This ratio measures the ability of a firm to pay dividend on preference shares which carry a stated rate of return. Earnings after tax is considered because unlike debt on which interest is charged on the profit of the firm, the preference dividend is treated as appropriation of profit. This ratio indicates margin of safety available to the preference shareholders. A higher ratio is desirable from preference shareholders point of view.

Capital Gearing Ratio	Capital Gearing Ratio Formula = $\frac{\text{Preference Share Capital} + \text{Debentures} + \text{Long term Loan}}{\text{Equity Share Capital} + \text{Reserves \& Surplus} - \text{Losses}}$ In addition to debt-equity ratio, sometimes capital gearing ratio is also calculated to show the proportion of fixed interest (dividend) bearing capital to funds belonging to equity shareholders. For judging long term solvency position, in addition to debt-equity ratio and capital gearing ratio, the following ratios are also used: <u>Fixed Assets</u> Long term fund It is expected that fixed assets and core working capital are to be covered by long term fund. In various industries the proportion of fixed assets and current assets are different. So there is no uniform standard of this ratio too. But it should be less than one. If it is more than one, it means short term fund has been used to finance fixed assets.
Inventory Turnover Ratio	Inventory Turnover Ratio: This ratio also known as stock turnover ratio establishes the relationship between the cost of goods sold during the year and average inventory held during the year. It is calculated as follows: Formula = $\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$ *Average Inventory = $\frac{\text{Opening Stock} + \text{Closing Stock}}{2}$ This ratio indicates that how fast inventory is used/sold. A high ratio is good from the view point of liquidity and vice versa. A low ratio would indicate that inventory is not used/ sold/ lost and stays in a shelf or in the warehouse for a long time.
Debtor Turnover Ratio	Debtor's Turnover Ratio: In case firm sells goods on credit, the realization of sales revenue is delayed and the receivables are created. The cash is realised from these receivables later on. The speed with which these receivables are collected affects the liquidity position of the firm. The debtors turnover ratio throws light on the collection and credit policies of the firm. Formula = $\frac{\text{Credit Sales}}{\text{Average Account Receivables}}$
Capital Turnover Ratio	Creditor's Turnover Ratio: This ratio is calculated on the same lines as receivable turnover ratio is calculated. This ratio shows the velocity of debt payment by the firm. Formula = $\frac{\text{Credit Purchase}}{\text{Average Account Payables}}$ A low creditor's turnover ratio reflects liberal credit terms granted by supplies. While a high ratio shows that accounts are settled rapidly.

FINANCIAL ANALYSIS: CASH FLOW STATEMENTS

Limitations of Cash Flow Statement:

- Cash flow statement cannot be equated with the Income Statement. An Income Statement takes into account both cash as well as non-cash items and, therefore, net cash flow does not necessarily mean net income of the business.
- The cash balance as disclosed by the cash flow statement may not represent the real liquid position of the business since it can be easily influenced by postponing purchases and other payments.
- Cash flow statement cannot replace the Income Statement or the Funds Flow Statement. Each of them has a separate function to perform.

Cash Flow Statement Vs. Fund Flow Statement:

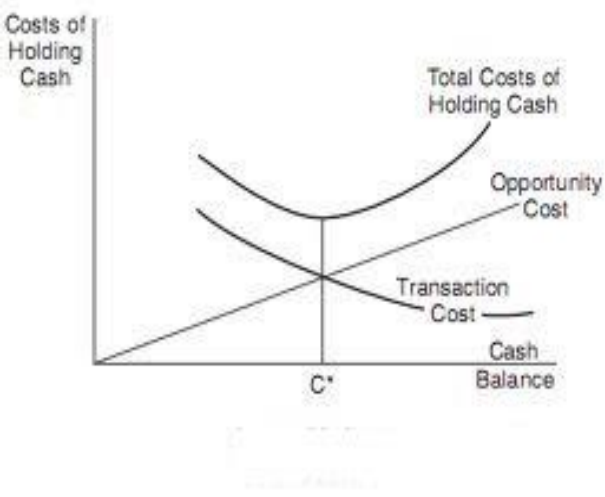
Basis	Cash Flow Statement	Fund Flow Statement
Object	It indicates change in cash position	It indicates change in working capital
Scope	Its coverage is narrow confined only to cash	Its coverage is wide confined to working capital
Opening & Closing balance	It is always prepared by opening cash balance and closing cash balance	Opening and closing cash balances are not required
Adjustment	Due weightage is given to outstanding and prepaid income and expenses	No adjustment is needed for outstanding and prepaid expenses
Preparation of schedule of changes in working capital	No need to prepare schedule of change in working capital	It is necessary to prepare the schedule of change in working capital
Increase or decrease in working capital	Not shown	Always shown
Calculation	Cash generated from operation is calculated	Funds generated from operation is calculated
Analysis	Essential for short term financial analysis	Essential for long term financial analysis

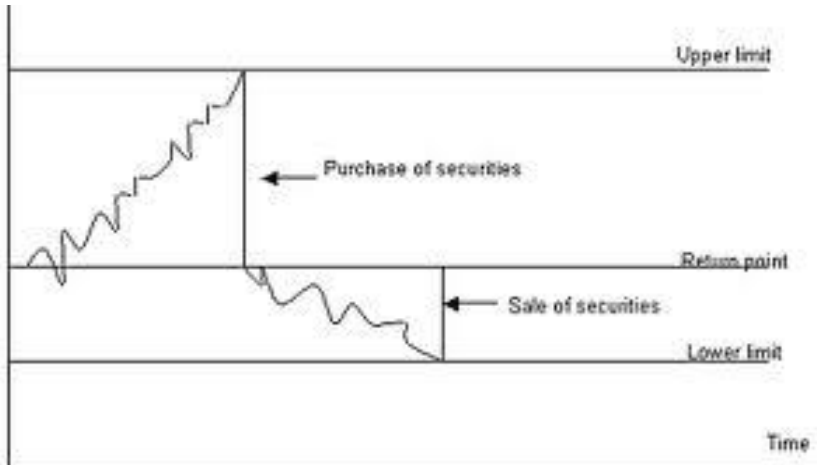
MANAGEMENT OF WORKING CAPITAL

IMPORTANCE OF ADEQUATE WORKING CAPITAL	The importance of adequate working capital in commercial undertakings can be judged from the fact that a concern needs funds for its day-to-day running. Adequacy or inadequacy of these funds would determine the efficiency with which the daily business may be carried on. Management of working capital is an essential task of the finance manager. He has to ensure that the amount of working capital available with his concern is neither too large nor too small for its requirements. A large amount of working capital would mean that the company has idle funds. Since funds have a cost, the company has to pay huge amount as interest on such funds. The various studies conducted by the Bureau of Public Enterprises have shown that one of the reason for the poor performance of public sector undertakings in our country has been the large amount of funds locked up in working capital This results in over capitalization. Over capitalization implies that a company has too large funds for its requirements, resulting in a low rate of return a situation which implies a less than optimal use of resources. A firm has, therefore, to be very careful in estimating its working capital requirements. If the firm has inadequate working capital, it is said to be under-capitalised. Such a firm runs the risk of insolvency. This is because, paucity of working capital may lead to a situation where the firm may not be able to meet its liabilities. It is interesting to note that many firms which are otherwise prosperous (having good demand for their products and enjoying profitable marketing conditions) may fail because of lack of liquid resources. If a firm has insufficient working capital and tries to increase sales, it can easily over-stretch the financial resources of the business. This is called overtrading. Factors to be taken into consideration while determining the requirement of working capital: (i) Production Policies (ii) Nature of the business (iii) Credit policy (iv) Inventory policy (v) Abnormal factors (vi) Market conditions (vii) Conditions of supply (viii) Business cycle (ix) Growth and expansion (x) Level of taxes (xi) Dividend policy (xii) Price level changes (xiii) Operating efficiency.
OPERATING OR WORKING CAPITAL CYCLE	A useful tool for managing working capital is the operating cycle. The operating cycle analyzes the accounts receivable, inventory and accounts payable cycles in terms of number of days. In other words, accounts receivable are analyzed by the average number of days it takes to collect an account. Inventory is analyzed by the average number of days it takes to turn over the sale of a product (from the point it comes in the store to the point it is converted to cash or an account receivable). Accounts payable are analyzed by the average number of days it takes to pay a supplier invoice. Working capital cycle indicates the length of time between a company's paying for materials, entering into stock and receiving the cash from sales of finished goods. It can be determined by adding the number of days required for each stage in the cycle. For example, a company holds raw materials on

	an average for 60 days, it gets credit from the supplier for 15 days, production process needs 15 days, finished goods are held for 30 days and 30 days credit is extended to debtors. The total of all these, 120 days, i.e., $60 - 15 + 15 + 30 + 30$ days is the total working capital cycle. The determination of working capital cycle helps in the forecast, control and management of working capital. It indicates the total time lag and the relative significance of its constituent parts. The duration of working capital cycle may vary depending on the nature of the business. In the form of an equation, the operating cycle process can be expressed as follows: Operating Cycle = $R + W + F + D - C$ Where, R = Raw material storage period W = Work-in-progress holding period F = Finished goods storage period D = Debtors collection period. C = Credit period availed Raw Material Storage Period = $\frac{\text{Average Stock of Raw Material}}{\text{Average Cost of Raw Material}}$ WIP Holding period = $\frac{\text{Average WIP Inventory}}{\text{Average Cost of Production per day}}$ Finished Goods storage period = $\frac{\text{Average Stock of Finished Goods}}{\text{Average Cost of Goods Sold per day}}$ Debtors Collection Period = $\frac{\text{Average Book Debts}}{\text{Average Credit Sales per day}}$ Credit period availed = $\frac{\text{Average Trade Creditors}}{\text{Average Credit Purchases per day}}$
FUNCTIONS OF TREASURY DEPARTMENT	1. Cash Management: The efficient collection and payment of cash both inside the organisation and to third parties is the function of the treasury department. The involvement of the department with the details of receivables and payables will be a matter of policy. There may be complete centralization within a group treasury or the treasury may simply advise subsidiaries and divisions on policy matter viz., collection/payment periods, discounts, etc. Any position between these two extremes would be possible. Treasury will normally manage surplus funds in an investment portfolio. Investment policy will consider future needs for liquid funds and acceptable levels of risk as determined by company policy. 2. Currency management: The treasury department manages the foreign currency risk exposure of the company. In a large multinational company (MNC) the first step will usually be to set off intra-group indebtedness. The use of matching receipts and payments in the same currency will save

	transaction costs. Treasury might advise on the currency to be used when invoicing overseas sales. 3. Funding Management: Treasury department is responsible for planning and sourcing the company's short, medium and long-term cash needs. Treasury department will also participate in the decision on capital structure and forecast future interest and foreign currency rates. 4. Banking: It is important that a company maintains a good relationship with its bankers. Treasury department carry out negotiations with bankers and act as the initial point of contact with them. Short-term finance can come in the form of bank loans or through the sale of commercial paper in the money market. 5. Corporate Finance: Treasury department is involved with both acquisition and divestment activities within the group. In addition it will often have responsibility for investor relations. The latter activity has assumed increased importance in markets where share-price performance is regarded as crucial and may affect the company's ability to undertake acquisition activity or, if the price falls drastically, render it vulnerable to a hostile bid.
NEED OF CASH:	The following are three basic considerations in determining the amount of cash or liquidity as have been outlined by lord Keynes: (i) Transaction need: Cash facilitates the meeting of the day-to-day expenses and other debt payments. Normally, inflows of cash from operations should be sufficient for this purpose. But sometimes this inflow may be temporarily blocked. (ii) Speculative needs: Cash may be held in order to take advantage of profitable opportunities that may present themselves and which may be lost for want of ready cash/settlement. (iii) Precautionary needs: Cash may be held to act as for providing safety against unexpected events. Safety as is explained by the saying that a man has only three friends an old wife, an old dog and money at bank.
DIFFERENT KINDS OF FLOAT WITH REFERENCE TO MANAGEMENT OF CASH	The term float is used to refer to the periods that affect cash as it moves through the different stages of the collection process. Four kinds of float with reference to management of cash are: (i) Billing float: An invoice is the formal document that a seller prepares and sends to the purchaser as the payment request for goods sold or services provided. The time between the sale and the mailing of the invoice is the billing float. (ii) Mail float: This is the time when a cheque is being processed by post office, messenger service or other means of delivery. (iii) Cheque processing float: This is the time required for the seller to sort, record and deposit the cheque after it has been received by the company. (iv) Banking processing float: This is the time from the deposit of the cheque

	to the crediting of funds in the sellers account.
WILLIAM J. BAUMOL'S ECONOMIC ORDER QUANTITY MODEL	This model tries to balance the income foregone on cash held by the firm against the transaction cost of converting cash into marketable securities or vice versa. According to this model, optimum cash level is that level of cash where the carrying costs and transactions costs are the minimum. The carrying costs refers to the cost of holding cash, namely, the interest foregone on marketable securities. The transaction costs refers to the cost involved in getting the marketable securities converted into cash. This happens when the firm falls short of cash and has to sell the securities resulting in clerical, brokerage, registration and other costs. The optimum cash balance according to this model will be that point where these two costs are minimum. The formula for determining optimum cash balance is: $C = \sqrt{\frac{2U * P}{S}}$ Where, C = Optimum cash balance U = Annual (or monthly) cash disbursement P= Fixed cost per transaction. S = Opportunity cost of one rupee p.a. (or p.m.) 
MILLER ORR CASH MANAGEMENT MODEL	According to this model the net cash flow is completely stochastic. When changes in cash balance occur randomly the application of control theory serves a useful purpose. The Miller-Orr model is one of such control limit models. This model is designed to determine the time and size of transfers between an investment account and cash account.

	In this model control limits are set for cash balances. These limits may consist of h as upper limit, z as the return point; and zero as the lower limit. When the cash balance reaches the upper limit, the transfer of cash equal to $h - z$ is invested in marketable securities account. When it touches the lower limit, a transfer from marketable securities account to cash account is made. During the period when cash balance stays between (h, z) and $(z, 0)$ i.e. high and low limits no transactions between cash and marketable securities account is made. The high and low limits of cash balance are set up on the basis of fixed cost associated with the securities transactions, the opportunity cost of holding cash and the degree of likely fluctuations in cash balances. These limits satisfy the demands for cash at the lowest possible total costs. 
ELECTRONIC FUND TRANSFER	With the developments which took place in the Information technology, the present banking system is switching over to the computerisation of banks branches to offer efficient banking services and cash management services to their customers. The network will be linked to the different branches, banks. This will help the customers in the following ways: ♦ Instant updation of accounts. ♦ The quick transfer of funds. ♦ Instant information about foreign exchange rates.
ZERO BALANCE ACCOUNT	For efficient cash management some firms employ an extensive policy of substituting marketable securities for cash by the use of zero balance accounts. Every day the firm totals the cheques presented for payment against the account. The firm transfers the balance amount of cash in the account if any, for buying marketable securities. In case of shortage of cash the firm sells the marketable securities.
PETTY CASH IMPREST SYSTEM	For better control on cash, generally the companies use petty cash imprest system wherein the day-to-day petty expenses are estimated taking into account past experience and future needs and generally a week's requirement of cash will be kept separate for making petty expenses. Again, the next week will commence with the pre-determined balance. This will reduce the strain of the management in managing petty cash expenses and help in the managing cash efficiently.

AGEING SCHEDULE	• When receivables are analysed <u>according to their age</u>, the process is known as preparing the ageing schedules of receivables. • The computation of average age of receivables is a quick and effective method of comparing the liquidity of receivables with the liquidity of receivables in the past and also comparing liquidity of one firm with the liquidity of the other competitive firm. • It also helps the firm to predict collection pattern of receivables in future. This comparison can be made periodically. • The purpose of classifying receivables by age groups is to have a closer control over the quality of individual accounts. It requires going back to the receivables ledger where the dates of each customer's purchases and payments are available. • The ageing schedule, by indicating a tendency for old accounts to accumulate, provides a useful supplement to average collection period of receivables/sales analysis. • Because an analysis of receivables in terms of associated dates of sales enables the firm to recognize the recent increases, and slumps in sales. To ascertain the condition of receivables for control purposes, it may be considered desirable to compare the current ageing schedule with an earlier ageing schedule in the same firm and also to compare this information with the experience of other firm.
THREE PRINCIPLES RELATING TO SELECTION OF MARKETABLE SECURITIES	• Safety: Return and risk go hand in hand. As the objective in this investment is ensuring liquidity, minimum risk is the criterion of selection. • Maturity: Matching of maturity and forecasted cash needs is essential. Prices of long term securities fluctuate more with changes in interest rates and are therefore riskier. • Marketability: it refers to the convenience, speed and cost at which a security can be converted into cash. If the security can be sold quickly without loss of time and price, it is highly liquid or marketable.
ACCOUNTS RECEIVABLE SYSTEMS	Manual systems of recording the transactions and managing receivables are cumbersome and costly. The automated receivable management systems automatically update all the accounting records affected by a transaction. This system allows the application and tracking of receivables and collections to store important information for an unlimited number of customers and transactions, and accommodate efficient processing of customer payments and adjustments.
WRITE SHORT NOTE ON FACTORING	It is a new financial service that is presently being developed in India. Factoring involves provision of specialised services relating to credit investigation, sales ledger management, purchase and collection of debts, credit protection as well as provision of finance against receivables and risk bearing. In factoring, accounts receivables are generally sold to a financial institution (a subsidiary of commercial bank-called "Factor"), who charges commission and bears the credit risks associated with the accounts receivables purchased by it. Its operation is very simple. Clients enter into an agreement with the "factor" working out a factoring arrangement according to his requirements. The factor then takes the responsibility of monitoring, follow-up, collection and risk-taking and provision of advance. The factor generally fixes up a limit

customer-wise for the client (seller).

Factoring offers the following advantages which makes it quite attractive to many firms.

(1) The firm can convert accounts receivables into cash without bothering about repayment.

(2) Factoring ensures a definite pattern of cash inflows.

(3) Continuous factoring virtually eliminates the need for the credit department. That is why receivables financing through factoring is gaining popularity as useful source of financing short-term funds requirements of business enterprises because of the inherent advantage of flexibility it affords to the borrowing firm. The seller firm may continue to finance its receivables on a more or less automatic basis. If sales expand or contract it can vary the financing proportionally.

(4) Unlike an unsecured loan, compensating balances are not required in this case. Another advantage consists of relieving the borrowing firm of substantially credit and collection costs and to a degree from a considerable part of cash management.

However, factoring as a means of financing is comparatively costly source of financing since its cost of financing is higher than the normal lending rates.

FINANCING DECISIONS: COST OF CAPITAL & CAPITAL STRUCTURE

Explicit & Implicit Cost:	The explicit cost of any source of capital may be defined as the discount rate that equals the present value of the cash inflows that are incremental to taking of financial opportunity with the present value of its incremental cash outflows. Implicit cost is the rate of return associated with the best investment opportunity for the firm and its shareholders that will be foregone if the project presently under consideration by the firm was accepted. The explicit cost arises when funds are raised and when funds are used, implicit cost arises. For capital budgeting decisions, cost of capital is nothing but the explicit cost of capital.
Capital Asset Pricing Model	This model describes the linear relationship between risk and return for securities. The risk a security is exposed to are diversifiable and non-diversifiable. The diversifiable risk can be eliminated through a portfolio consisting of large number of well diversified securities. The non-diversifiable risk is assessed in terms of beta coefficient (b or β) through fitting regression equation between return of a security and the return on a market portfolio. Thus, the cost of equity capital can be calculated under this approach as: $K_e = R_f + b (R_m - R_f)$ Where, K_e = Cost of equity capital R_f = Rate of return on security b = Beta coefficient R_m = Rate of return on market portfolio Therefore, required rate of return = risk free rate + risk premium The idea behind CAPM is that investors need to be compensated in two ways-time value of money and risk. The time value of money is represented by the risk-free rate in the formula and compensates the investors for placing money in any investment over a period of time. The other half of the formula represents risk and calculates the amount of compensation the investor needs for taking on additional risk. This is calculated by taking a risk measure (beta) which compares the returns of the asset to the market over a period of time and compares it to the market premium.
Weighted Average Cost of Capital	WACC, in other words, represents the investors' opportunity cost of taking on the risk of putting money into a company. Since every company has a capital structure i.e. what percentage of debt comes from retained earnings, equity shares, preference shares, and bonds, so by taking a weighted average, it can be seen how much interest the company has to pay for every rupee it borrows. This is the weighted average cost of capital. The weighted average cost of capital for a firm is of use in two major areas: in consideration of the firm's position and in evaluation of proposed changes necessitating a change in the firm's capital. Thus, a weighted average

	technique may be used in a quasi-marginal way to evaluate a proposed investment project, such as the construction of a new building. Thus, weighted average cost of capital is the weighted average after tax costs of the individual components of firm's capital structure. That is, the after tax cost of each debt and equity is calculated separately and added together to a single overall cost of capital. $K_0 = \% D(\text{mkt}) (K_i) (1 - t) + (\% P\text{smkt}) K_p + (C_s \text{ mkt}) K_e$ Where, K_0 = Overall cost of capital K_i = Before tax cost of debt $1 - t$ = $1 -$ Corporate tax rate K_p = Cost of preference capital K_e = Cost of equity $\% D\text{mkt}$ = % of debt in capital structure $\% P\text{smkt}$ = % of preference share in capital structure $\% C_s$ = % of equity share in capital structure. Securities analysts employ WACC all the time when valuing and selecting investments. In discounted cash flow analysis, WACC is used as the discount rate applied to future cash flows for deriving a business's net present value. WACC can be used as a hurdle rate against which to assess return on investment capital performance. It also plays a key role in economic value added (EVA) calculations. Investors use WACC as a tool to decide whether or not to invest. The WACC represents the minimum rate of return at which a company produces value for its investors.
Marginal Cost of Capital:	The marginal cost of capital may be defined as the cost of raising an additional rupee of capital. Since the capital is raised in substantial amount in practice marginal cost is referred to as the cost incurred in raising new funds. Marginal cost of capital is derived, when the average cost of capital is calculated using the marginal weights. The marginal weights represent the proportion of funds the firm intends to employ. Thus, the problem of choosing between the book value weights and the market value weights does not arise in the case of marginal cost of capital computation. To calculate the marginal cost of capital, the intended financing proportion should be applied as weights to marginal component costs. The marginal cost of capital should, therefore, be calculated in the composite sense. When a firm raises funds in proportional manner and the component's cost remains unchanged, there will be no difference between average cost of capital (of the total funds) and the marginal cost of capital. The component costs may remain constant upto certain level of funds raised and then start increasing with amount of funds raised.
What is Capital Structure and	Capital structure refers to the mix of a firm's capitalisation and includes long term sources of funds such as debentures, preference share capital, equity

Optimal Capital Structure?	share capital and retained earnings. According to Gerstenberg capital structure is “the make-up of a firm’s capitalisation”.			
	The theory of optimal capital structure deals with the issue of the right mix of debt and equity in the long term capital structure of a firm. This theory states that if a company takes on debt, the value of the firm increases up to a point. Beyond that point if debt continues to increase then the value of the firm will start to decrease. Similarly if the company is unable to repay the debt within the specified period then it will affect the goodwill of the company in the market and may create problems for collecting further debt.			
Major Consideration in Capital Structure Planning:	Type	Risk	Cost	Control
	Equity Capital	Low Risk as no question of repayment of capital except when company is under liquidation.	Most Expensive – dividend expectations are higher than interest rates. Also, dividends are not tax deductible.	Dilution of control – since the capital base might be expanded and new shareholders are involved.
	Preference Capital	Slightly higher risk when compared to Equity capital – principle is redeemable after a certain period of time.	Slightly cheaper than equity but higher than interest rates. Dividends are not tax deductible.	No dilution of control since voting rights are restricted.
	Loan Funds	High Risk – Capital should be repaid as per agreement, interest should be paid irrespective of profits.	Comparatively cheaper – prevailing interest rate are considered only to the extent of after tax impact.	No dilution of control – but some financial institution may insist on nomination of their representatives as directors.
Trading on Equity:	When the return on capital employed is more than the rate of interest on borrowed funds, financial leverage can be used favorably to maximise EPS. In such a case, the company is said to be Trading on equity.			
Concept of Debt Equity or EBIT EPS indifference point:	The determination of optimal level of debt in the capital structure of a company is a formidable task and is a major policy decision. It ensures that the firm is able to service its debt as well as contain its interest cost. Determination of optimal level of debt involves equalizing between return and risk. EBIT EPS analysis is a widely used tool to determine the level of debt in a firm. Through this analysis, comparison can be drawn for various methods of financing by obtaining the indifference point. It is point to the EBIT level at which EPS remain unchanged irrespective of debt equity level. For example, indifference point for the capital mix can be determined as below: $(EBIT - I_1)(1-t) = (EBIT - I_2)(1-t)$			

	E1 E2 Where, EBIT = indifference point E1 = No. of equity shares in alternative 1 E2 = No. of equity shares in alternative 2 I1 = Interest charged in alternative 1 I2 = Interest charged in alternative 2 T = Tax Rate Alternative 1 = All Equity Finance Alternative 2 = Debt equity finance
General Assumptions in capital structure theories:	• There are only two sources of funds i.e Debt and Equity. (No preference shares) • Firm has perpetual life (i.e Going Concern) • There are no Corporate or personal income tax. • The firm earns operating profits and it is expected to grow. (No Losses) • The payout ratio is 100%. (No Retained Earnings) • Cost of Debt is less than Cost of Equity. • Business risk is constant and is not affected by financing mix decision.
NET INCOME APPROACH (IN FAVOUR OF CAPITAL STRUCTURE)	• According to this approach, capital structure decision <u>is relevant</u> to the value of the firm. An increase in financial leverage will lead to decline in the weighted average cost of capital, while the value of the firm as well as market price of ordinary share will increase. • Conversely a decrease in the leverage will cause an increase in the overall cost of capital and a consequent decline in the value as well as market price of equity shares. The value of the firm on the basis of Net Income Approach can be ascertained as follows: $V = S + D$ Where, V = Value of the firm S = Market value of equity D = Market value of debt Market value of equity (S) = $\frac{NI}{K_e}$ Where, NI = Earnings available for equity shareholders K_e = Equity Capitalisation rate • Under, NI approach, the value of the firm will be maximum at a point where weighted average cost of capital is minimum. Thus, <u>the theory suggests total or maximum possible debt financing</u> for minimising the cost of capital. The overall cost of capital under this approach is: Overall Cost of firm = $\frac{EBIT}{\text{Value of firm}}$ Thus according to this approach, the firm can increase its total value by decreasing its overall cost of capital through increasing the degree of leverage.

	The significant conclusion of this approach is that it pleads for the firm to employ as much debt as possible to maximise its value. <table><tr><td>Determine EBIT</td></tr><tr><td>Compute market value of Equity = $\frac{\text{EBIT} - I}{\text{Cost of Equity}}$</td></tr><tr><td>Compute Market value of Debt = $\frac{\text{Interest}}{\text{Cost of Debt}}$</td></tr><tr><td>Compute Market value of Firm = E + D</td></tr><tr><td>Compute Overall Cost of Capital = $\frac{\text{EBIT}}{\text{Value of Firm}}$</td></tr></table>	Determine EBIT	Compute market value of Equity = $\frac{\text{EBIT} - I}{\text{Cost of Equity}}$	Compute Market value of Debt = $\frac{\text{Interest}}{\text{Cost of Debt}}$	Compute Market value of Firm = E + D	Compute Overall Cost of Capital = $\frac{\text{EBIT}}{\text{Value of Firm}}$
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NET OPERATING INCOME APPROACH (AGAINST CAPITAL STRUCTURE)	• According to this approach, capital structure decisions of the firm are irrelevant. • Any change in the leverage will not lead to any change in the total value of the firm and the market price of shares, as the overall cost of capital is independent of the degree of leverage. • As a result, the division between debt and equity is irrelevant. • An increase in the use of debt which is apparently cheaper is offset by an increase in the equity capitalisation rate. <i>This happens because equity investors seek higher compensation as they are opposed to greater risk due to the existence of fixed return securities in the capital structure.</i> <table><tr><td>Determine EBIT</td></tr><tr><td>Compute Market Value of Firm = $\frac{\text{EBIT}}{\text{WACC}}$</td></tr><tr><td>Compute Market value of Debt = $\frac{\text{Interest}}{\text{Cost of Debt}}$</td></tr><tr><td>Compute Market value of Equity = F – D</td></tr><tr><td>Compute cost of Equity = $\frac{\text{EBT}}{\text{Value of Equity}}$</td></tr></table>	Determine EBIT	Compute Market Value of Firm = $\frac{\text{EBIT}}{\text{WACC}}$	Compute Market value of Debt = $\frac{\text{Interest}}{\text{Cost of Debt}}$	Compute Market value of Equity = F – D	Compute cost of Equity = $\frac{\text{EBT}}{\text{Value of Equity}}$
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MODIGLIANI MILLER APPROACH (MM):	The NOI approach is definitional or conceptual and lacks behavioural significance. It does not provide operational justification for irrelevance of capital structure. However, <u>Modigliani-Miller approach provides behavioural justification</u> for constant overall cost of capital and, therefore, total value of the firm. The approach is based on further additional assumptions like: ♦ Capital markets are perfect. All information is freely available and there are no transaction costs. ♦ All investors are rational. ♦ Firms can be grouped into ‘Equivalent risk classes’ on the basis of their business risk. ♦ Non-existence of corporate taxes. Based on the above assumptions, Modigliani-Miller derived the following three propositions. (i) Total market value of a firm is equal to its expected net operating income dividend by the discount rate appropriate to its risk class decided by the					

market.

- (ii) The expected yield on equity is equal to the risk free rate plus a premium determined as per the following equation: $K_c = K_o + (K_o - K_d) B/S$

Average cost of capital is not affected by financial decision.

- The operational justification of Modigliani-Miller hypothesis is explained through the functioning of the arbitrage process.
- Arbitrage refers to buying asset or security at lower price in one market and selling it at higher price in another market. As a result equilibrium is attained in different markets.
- This is illustrated by taking two identical firms of which one has debt in the capital structure while the other does not. Investors of the firm whose value is higher will sell their shares and instead buy the shares of the firm whose value is lower. They will be able to earn the same return at lower outlay with the same perceived risk or lower risk. They would, therefore, be better off.
- The value of the levered firm can either be neither greater nor lower than that of an unlevered firm according to this approach. The two must be equal. There is neither advantage nor disadvantage in using debt in the firm's capital structure.
- Simply stated, the Modigliani Miller approach is based on the thought that no matter how the capital structure of a firm is divided among debt, equity and other claims, there is a conservation of investment value. Since the total investment value of a corporation depends upon its underlying profitability and risk, it is invariant with respect to relative changes in the firm's financial capitalisation. The approach considers capital structure of a firm as a whole pie divided into equity, debt and other securities.
- The shortcoming of this approach is that the arbitrage process as suggested by Modigliani-Miller will fail to work because of imperfections in capital market, existence of transaction cost and presence of corporate income taxes.

INVESTMENT DECISIONS: CAPITAL BUDGETING

WHAT IS CAPITAL BUDGETING?	The capital budgeting decision means a decision as to whether or not money should be invested in long-term projects such as the setting up of a factory or installing a machinery or creating additional capacities to manufacture a part which at present may be purchased from outside. It includes a financial analysis of the various proposals regarding capital expenditure to evaluate their impact on the financial condition of the company and to choose the best out of the various alternatives.										
PURPOSE OF CAPITAL BUDGETING?	The capital budgeting decisions are important, crucial and critical business decisions due to following reasons: (i) Substantial expenditure: Capital budgeting decisions involves the investment of substantial amount of funds. It is therefore necessary for a firm to make such decisions after a thoughtful consideration so as to result in the profitable use of its scarce resources. The hasty and incorrect decisions would not only result into huge losses but may also account for the failure of the firm. (ii) Long time period: The capital budgeting decision has its effect over a long period of time. These decisions not only affect the future benefits and costs of the firm but also influence the rate and direction of growth of the firm. (iii) Irreversibility: Most of the investment decisions are irreversible. Once they are taken, the firm may not be in a position to reverse them back. This is because, as it is difficult to find a buyer for the second-hand capital items. (iv) Complex decision: The capital investment decision involves an assessment of future events, which in fact is difficult to predict. Further it is quite difficult to estimate in quantitative terms all the benefits or the costs relating to a particular investment decision.										
PROCESS OF CAPITAL BUDGETING?	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Stage</th><th>Procedure</th></tr> </thead> <tbody> <tr> <td>Planning</td><td> - Identify various possible investment opportunities - Determine the ability of the management to exploit the opportunities - Reject opportunities which do not have much merit, and prepare proposals in respect of investment opportunities which have reasonable value for the firm. </td></tr> <tr> <td>Evaluation</td><td> - Determine the inflows and outflows relating to various proposals - Use appropriate technique to evaluate the proposal </td></tr> <tr> <td>Selection</td><td> - Weigh the risk return trade off relating to various investment proposals - Compare WACC or Cost of Capital with Return from various proposals - Choose that project which will maximise the shareholders wealth </td></tr> <tr> <td>Execution</td><td> - After deciding on the project to be implemented, obtain the necessary funds for the project - Establish the infrastructure, acquire the resources, and implement the project, according to stipulated time frame </td></tr> </tbody> </table>	Stage	Procedure	Planning	- Identify various possible investment opportunities - Determine the ability of the management to exploit the opportunities - Reject opportunities which do not have much merit, and prepare proposals in respect of investment opportunities which have reasonable value for the firm.	Evaluation	- Determine the inflows and outflows relating to various proposals - Use appropriate technique to evaluate the proposal	Selection	- Weigh the risk return trade off relating to various investment proposals - Compare WACC or Cost of Capital with Return from various proposals - Choose that project which will maximise the shareholders wealth	Execution	- After deciding on the project to be implemented, obtain the necessary funds for the project - Establish the infrastructure, acquire the resources, and implement the project, according to stipulated time frame
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	Control	Obtain feedback reports to monitor the implementation of the project
	Review	After the project is over, review the project to explain its success or failure and to generate ideas for new proposal to be undertaken in future
PAYBACK PERIOD	1) The payback period of an investment is the length of time required for the cumulative total net cash flows from the investment to equal the total initial cash outlays. At that point in time, the investor has recovered the money invested in the project. The first step in calculating the payback period are determining the total initial capital investment and the annual expected after-tax net cash flows over the useful life of the investment. When the net cash flows are uniform over the useful life of the project, the number of years in the payback period can be calculated using the following equation: $\text{Payback Period} = \frac{\text{Total initial capital investment}}{\text{Annual expected after tax net cash flow}}$ Advantages: - A major advantage of the payback period technique is that it is easy to compute and to understand as it provides a quick estimate of the time needed for the organization to recoup the cash invested. - The length of the payback period can also serve as an estimate of a project's risk; the longer the payback period, the riskier the project as long-term predictions are less reliable. - The payback period technique focuses on quick payoffs. In some industries with high obsolescence risk or in situations where an organization is short on cash, short payback periods often become the determining factor for investments. Limitations: - The major limitation of the payback period technique is that it ignores the time value of money. As long as the payback periods for two projects are the same, the payback period technique considers them equal as investments, even if one project generates most of its net cash inflows in the early years of the project while the other project generates most of its net cash inflows in the latter years of the payback period. - A second limitation of this technique is its failure to consider an investment's total profitability; it only considers cash flows from the initiation of the project until its payback period and ignores cash flows after the payback period. - Lastly, use of the payback period technique may cause organizations to place too much emphasis on short payback periods thereby ignoring the need to invest in long-term projects that would enhance its competitive position.	
ACCOUNTING RATE OF RETURN	2) The accounting rate of return of an investment measures the average annual net income of the project (incremental income) as a percentage of the investment. $\text{Accounting Rate of Return} = \frac{\text{Average Annual net income}}{\text{Total initial capital investment}}$	

	Investment The numerator is the average annual net income generated by the project over its useful life. The denominator can be either the initial investment or the average investment over the useful life of the project. Some organizations prefer the initial investment because it is objectively determined and is not influenced by either the choice of the depreciation method or the estimation of the salvage value. Either of these amounts is used in practice but it is important that the same method be used for all investments under consideration. Advantages: • The accounting rate of return technique uses readily available data that is routinely generated for financial reports and does not require any special procedures to generate data. • This method may also mirror the method used to evaluate performance on the operating results of an investment and management performance. Using the same procedure in both decision-making and performance evaluation ensures consistency. • Lastly, the calculation of the accounting rate of return method considers all net incomes over the entire life of the project and provides a measure of the investment's profitability. Limitations: • The accounting rate of return technique, like the payback period technique, ignores the time value of money and considers the value of all cash flows to be equal. • Additionally, the technique uses accounting numbers that are dependent on the organization's choice of accounting procedures, and different accounting procedures, e.g., depreciation methods, can lead to substantially different amounts for an investment's net income and book values. • The method uses net income rather than cash flows; while net income is a useful measure of profitability, the net cash flow is a better measure of an investment's performance. • Furthermore, inclusion of only the book value of the invested asset ignores the fact that a project can require commitments of working capital and other outlays that are not included in the book value of the project.
NET PRESENT VALUE	The net present value technique is a discounted cash flow method that considers the time value of money in evaluating capital investments. An investment has cash flows throughout its life, and it is assumed that a rupee of cash flow in the early years of an investment is worth more than a rupee of cash flow in a later year. The net present value method uses a <i>specified discount rate</i> to bring all subsequent net cash inflows after the initial investment to their present values. Theoretically, the discount rate or desired rate of return on an investment is the rate of return the firm would have earned by investing the same funds in the best available alternative investment that has the same risk. Determining the best alternative opportunity available is difficult in practical terms so rather than using the true opportunity cost, organizations often use an

	alternative measure for the desired rate of return. An organization may establish a minimum rate of return that all capital projects must meet; this minimum could be based on an industry average or the cost of other investment opportunities. Many organizations choose to use the cost of capital as the desired rate of return; the cost of capital is the cost that an organization has incurred in raising funds or expects to incur in raising the funds needed for an investment. Net present value = Present value of net cash flow - Total net initial investment The steps to calculating net present value are - Determine the net cash inflow in each year of the investment, - Select the desired rate of return, - Find the discount factor for each year based on the desired rate of return selected, - Determine the present values of the net cash flows by multiplying the cash flows by the discount factors, - Total the amounts for all years in the life of the project, and - Subtract the total net initial investment.
DESIRABILITY FACTOR/ PROFITABILITY INDEX	With the help of discounted cash flow technique, the two alternative proposals for capital expenditure can be compared. In certain cases we have to compare a number of proposals each involving different amounts of cash inflows. One of the methods of comparing such proposals is to workout what is known as the 'Desirability factor', or 'Profitability index'. In general terms a project is acceptable if its profitability index value is greater than 1. $PI = \frac{\text{Sum of Discounted Cash inflows}}{\text{Total Discounted Cash outflow}}$ Advantages The method also uses the concept of time value of money and is a better project evaluation technique than NPV. Limitations Profitability index fails as a guide in resolving <i>capital rationing</i> (discussed later in this chapter) where projects are indivisible. Once a single large project with high NPV is selected, possibility of accepting several small projects which together may have higher NPV than the single project is excluded. Also situations may arise where a project with a lower profitability index selected may generate cash flows in such a way that another project can be taken up one or two years later, the total NPV in such case being more than the one with a project with highest Profitability Index. The Profitability Index approach thus cannot be used indiscriminately but all other type of alternatives of projects will have to be worked out.
INTERNAL RATE OF RETURN METHOD	Like the net present value method, the internal rate of return method considers the time value of money, the initial cash investment, and all cash flows from the investment. Unlike the net present value method, the internal rate of return method does not use the desired rate of return but estimates the

	discount rate that makes the present value of subsequent net cash flows equal to the initial investment. Using this estimated rate of return, the net present value of the investment will be zero. This estimated rate of return is then compared to a criterion rate of return that can be the organization's desired rate of return, the rate of return from the best alternative investment, or another rate the organization chooses to use for evaluating capital investments. The procedures for computing the internal rate of return vary with the pattern of net cash flows over the useful life of an investment. The first step is to determine the investment's total net initial cash disbursements and commitments and its net cash inflows in each year of the investment. For an investment with uniform cash flows over its life, the following equation is used: Total initial investment = Annual net cash flow x Annuity discount factor of the discount rate for the number of periods of the investment's useful life When the net cash flows are not uniform over the life of the investment, the determination of the discount rate can involve trial and error and interpolation between interest rates. It should be noted that there are several spreadsheet programs available for computing both net present value and internal rate of return that facilitate the capital budgeting process.
MULTIPLE INTERNAL RATE OF RETURN	In cases where project cash flows change signs or reverse during the life of a project e.g. an initial cash outflow is followed by cash inflows and subsequently followed by a major cash outflow , there may be more than one IRR. In such situations if the cost of capital is less than the two IRRs , a decision can be made easily , however otherwise the IRR decision rule may turn out to be misleading as the project should only be invested if the cost of capital is between IRR^1 and IRR^2. To understand the concept of multiple IRRs it is necessary to understand the implicit re investment assumption in both NPV and IRR techniques. Advantages • This method makes use of the concept of time value of money. • All the cash flows in the project are considered. • IRR is easier to use as instantaneous understanding of desirability can be determined by comparing it with the cost of capital. • IRR technique helps in achieving the objective of minimisation of shareholders wealth. Limitations • The calculation process is tedious if there are more than one cash outflows interspersed between the cash inflows, there can be multiple IRRs, the interpretation of which is difficult. • The IRR approach creates a peculiar situation if we compare two projects with different inflow/outflow patterns. • It is assumed that under this method all the future cash inflows of a proposal are reinvested at a rate equal to the IRR. It is ridiculous to

	imagine that the same firm has a ability to reinvest the cash flows at a rate equal to IRR. If mutually exclusive projects are considered as investment options which have considerably different cash outlays. A project with a larger fund commitment but lower IRR contributes more in terms of absolute NPV and increases the shareholders' wealth. In such situation decisions based only on IRR criterion may not be correct.
CAPITAL RATIONING	<u>Background</u>: Generally, firms fix up maximum amount that can be invested in capital projects, during a given period of time, say a year. The firm then attempts to select a combination of investment proposals that will be within the specific limits providing maximum profitability and rank them in descending order according to their rate of return; such a situation is of capital rationing. <u>Criteria for Selection of Projects</u>: A firm should accept all investment projects with positive NPV, with an objective to maximise the wealth of shareholders. However, there may be resource constraints due to which a firm may have to select from among various projects. Thus there may arise a situation of capital rationing where there may be internal or external constraints on procurement of necessary funds to invest in all investment proposals with positive NPVs. <u>Reasons of Capital Rationing</u>: Capital rationing can be experienced due to external factors, mainly imperfections in capital markets which can be attributed to non-availability of market information, investor attitude etc. Internal capital rationing is due to the self-imposed restrictions imposed by management like not to raise additional debt or laying down a specified minimum rate of return on each project. - Capital rationing may also be introduced by following the concept of '<u>Responsibility Accounting</u>', whereby management may introduce capital rationing by authorising a particular department to make investment only up to a specified limit, beyond which the investment decisions are to be taken by higher-ups. - The selection of project under capital rationing involves two steps: (i) To identify the projects which can be accepted by using the technique of evaluation discussed above. (ii) To select the combination of projects. - In capital rationing it may also be more desirable to accept several small investment proposals than a few large investment proposals so that there may be full utilisation of budgeted amount. This may result in accepting relatively less profitable investment proposals if full utilisation of budget is a primary consideration. Similarly, capital rationing may also mean that the firm foregoes the next most profitable investment following after the budget ceiling even though it is estimated to yield a rate of return much higher than the required rate of return. Thus capital rationing does not always lead to optimum results.
SOCIAL COST BENEFIT ANALYSIS	Social Cost Benefit Analysis (SCBA) is a part of process of evaluating the proposal regarding undertaking a project.

	- The concept of SCBA is that while evaluating the proposal regarding investment in a project, the entrepreneur should consider not only its financial soundness and technical feasibility but also make cost benefit analysis of the project from the point of society and economy as a whole. - A project be financially and technically feasible but from the viewpoint society in general and economically as a whole may not be viable and vice-versa. - For example, a project of providing rail links to some under developed area may be financially unsound but from the social and economic angles it is quite desirable (it will help in development of that area). - For every action, there is reaction. For (almost) every project, there are some hidden social-economical disadvantages (these are referred as negative externalities) and also there are such advantages (these are referred as positive externalities). - The examples of disadvantages (negative externalities) are: dislocations of the persons whose land is acquired for the project, environmental damage, ecological disturbances, damage to heritage buildings in the long run, etc. - The advantages (positive externalities) may be: employment opportunities, availability of merit quality products at reasonable prices, foreign exchange earnings, construction of road, etc., for the project which may be used by other persons of that area and which may help in development of some other economic activities, etc. Hence, besides financial and technical angles, a project should also be evaluated on the basis of its social costs and social benefits.															
FINANCING DECISIONS: LEVERAGE	<table><tr><th>Risk</th><th>Business Risk</th><th>Financial Risk</th></tr><tr><td>Meaning</td><td>It is associated with the firm's operations and refers to the uncertainty about future net operating income (EBIT).</td><td>It is the additional risk placed on Equity shareholders due to the use of debt funds.</td></tr><tr><td>Measurement</td><td>It can be measured by the standard deviation of Basic Earning Power i.e ROCE</td><td>It can be measured using ratios like Leverage Multiplier, Debt to Assets, etc</td></tr><tr><td>Linked to</td><td>Economic Climate & Nature of Business</td><td>Use of Debt Funds</td></tr><tr><td>Reduction</td><td>Every firm would be susceptible to business risk due to changes in the overall economic climate and business operating conditions</td><td>A firm which is entirely financed by Equity will have almost no financial risk.</td></tr></table>	Risk	Business Risk	Financial Risk	Meaning	It is associated with the firm's operations and refers to the uncertainty about future net operating income (EBIT).	It is the additional risk placed on Equity shareholders due to the use of debt funds.	Measurement	It can be measured by the standard deviation of Basic Earning Power i.e ROCE	It can be measured using ratios like Leverage Multiplier, Debt to Assets, etc	Linked to	Economic Climate & Nature of Business	Use of Debt Funds	Reduction	Every firm would be susceptible to business risk due to changes in the overall economic climate and business operating conditions	A firm which is entirely financed by Equity will have almost no financial risk.
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OPERATING LEVERAGE	It is defined as the firm's ability to use fixed operating costs to magnify effects of changes in sales on its EBIT. When sales changes, variable costs will change in proportion to sales while fixed costs will remain constant. So, a change in sales will lead to a more than															

	proportional change in EBIT. The effect of change in sales on EBIT is measured by operating leverage. When sales increases, Fixed costs will remain same irrespective of level of output, and so the percentage increase in EBIT will be higher than increase in Sales. This is favorable effect of operating leverage. When sales decreases, the reverse process will be applicable and hence, the percentage decrease in EBIT will be higher than decrease in sales. This is the adverse effect of operating leverage. $OL = \frac{\text{Contribution}}{\text{EBIT}} \quad \text{or} \quad \frac{\% \text{ change in EBIT}}{\% \text{ change in Sales}}$
FINANCIAL LEVERAGE	It is defined as the ability of a firm to use fixed financial charges to magnify the effects of change in EBIT on firm's EPS. Financial leverage occurs when a company has debt content in its capital structure and fixed financial charges. These fixed financial charges do not vary with EBIT. They are fixed and are to be paid irrespective of the level of EBIT. When EBIT increases, the interest payable on debt remains constant, and hence residual earnings available to shareholders will also increase more than proportionately. Hence an increase in EBIT will lead to a higher percentage increase in EPS. This is measured by financial leverage. $FL = \frac{\text{EBIT}}{\text{EBT}} \quad \text{or} \quad \frac{\% \text{ change in EPS}}{\% \text{ change in EBIT}}$
COMBINED LEVERAGE	Combined leverage is used to measure the total risk of a Firm i.e Operating Risk and Financial Risk. $CL = \frac{\text{Contribution}}{\text{EBT}} \quad \text{or} \quad \frac{\% \text{ change in EPS}}{\% \text{ change in Sales}} \quad \text{or} \quad OL * FL$
EXPLAIN THE RELEVANCE OF TIME VALUE OF MONEY IN FINANCIAL DECISIONS	Time value of money means that worth of a rupee received today is different from the worth of a rupee to be received in future. The preference of money now as compared to future money is known as time preference for money. A rupee today is more valuable than rupee after a year due to several reasons: • Risk – there is uncertainty about the receipt of money in future. • Preference for present consumption – Most of the persons and companies in general, prefer current consumption over future consumption. • Inflation – In an inflationary period a rupee today represents a greater real purchasing power than a rupee a year hence. • Investment opportunities – Most of the persons and companies have a preference for present money because of availabilities of opportunities of investment for earning additional cash flow. Many financial problems involve cash flow accruing at different points of time

	for evaluating such cash flow an explicit consideration of time value of money is required.
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