

PCC / IPCC COSTING THEORY

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CHAPTER 1: BASIC CONCEPT

Q.1 Specify the methods of costing and cost units for the following industries?

Sr. No.	Industry	Method	Cost Unit
i	Toy Making	Batch	Per Batch
ii	Cement	Unit	Per Tonne/Bag
iii	Radio	Multiple	Per Radio/Batch
iv	Bicycle	Multiple	Per Bicycle
v	Ship Building	Contract	Per Ship
vi	Hospital	Operating	Per Bed – Day
vii	Bus Transport	Operating	Per Passenger – Km
viii	Hotels	Operating	Per Room – Day
ix	Steel	Process	Per Tonne
x	Coal	Single	Per Unit
xi	Interior Decoration	Job	Each Job
xii	Advertising	Job	Each Job
xiii	Brick – Works	Single or Output	1000 Bricks
xiv	Oil Refining Mill	Process	Per Tonne

Q.2 Factors to be considered before installing a system of Cost Accounting in a Manufacturing Organisation?

Good Cost Accounting System should possess the following features:

- i) **SIMPLE AND EASY TO OPERATE:** The system should be simple, practical, flexible and capable of meeting the requirements of a concern.
- ii) **ACCURACY:** The data to be used by the cost accounting system should be exact and accurate otherwise the output will not be correct.
- iii) **COST – EFFECTIVE:** The cost of installing and operating the system should justify the results. The benefit should exceed the amount to be spent on it.
- iv) **MANAGEMENT ROLE:** The top management should have full faith in the costing system and should provide help towards its development and success.
- v) **RELEVANCE OF DATA**
- vi) **PARTICIPATION BY EXECUTIVES**

Q.3 Define following Costing Method?

I. BATCH COSTING:

- This costing is based on the concept of contract costing.
- This method is used to determine the cost of a group of identical products.
- The batch costing of similar products is the unit and not single item within the batch.

II. JOB COSTING:

- This method is used in those concerns where production is carried out as per specific orders and specification.
- Each job is separate and distinct from other jobs and products.
- E.g.: House building, Ship building.

III. CONTRACT COSTING:

- This method of costing is based on the principle of job costing is used by builders and civil contractors.
- The contract becomes the cost unit for which relevant cost are accumulated.

IV. SINGLE / UNIT COSTING:

- This method is used where a single item is produced and the final production is composed of homogenous units.
- The per unit cost is obtained by dividing the total cost by the total number of units manufactured.

V. PROCESS COSTING:

- Under this method of costing, the cost of completing each stage of work is ascertained like cost of making pulp and cost of making paper from pulp.
- This method is used in those industries where manufacturing is done continuously.
- E.g.: Chemical, Oil, etc.

VI. MULTIPLE COSTING:

- This method is used in those industries where the nature of product is complex.
- In such case, costs are accumulated for different component making the final product and then totaled to ascertain total cost.
- E.g.: Motor car, aero plane.

VII. OPERATING COSTING:

- Ascertainment of cost of rendering or operating a service is called Service or Operating Costing.
- It is used in case of concerns rendering services like transport, cinema, etc.

Q. 4) Define cost object with three examples?

- It can be anything for which separate calculation or measurement of cost is required.
- Eg: Product, Service, Process, Project, Activity, etc.

Q. 5) Explain the following costs?

I. SUNK COST/HISTORICAL COST

- Historical Cost or the cost incurred in the past is known as Sunk Cost.
- They play no role in current decision making.
- They are termed as irrelevant cost.
- Eg: WDV of old machine is Sunk cost in decision making related to replacement of machine.

II. CONVERSION COST

- It is the cost incurred to convert raw materials into finished goods.
- It is the sum of direct wages, direct expenses and manufacturing overheads.

III. OPPORTUNITY COST

- It refers to the value of sacrifice made or benefit of opportunity forgone in accepting an alternative course of action.

IV. PRE – PRODUCTION COST

- The part of development costs incurred in making a trial production run prior to formal production or actual production.

V. CONTROLLABLE COST

- Controllable costs are the cost which can be influenced by the action of the specified member of an undertaking.
- Controllable costs incurred in particular responsibility centre can be influenced by the action of the executive heading that centre.
- Eg: Variable cost.

VI. UNCONTROLLABLE COST

- Uncontrollable costs are the cost which cannot be influenced by the action of the specified member of an undertaking.
- Eg: Fixed cost

VII. EXPLICIT COST

- These are also known as out of pocket cost.
- They refer to cost involving immediate payment of cash.
- Eg: Salaries, Postage & Telegram, Printing, etc.

VIII. IMPLICIT COST

- The costs do not involve any immediate cash payment.
- They are not recorded in the books of accounts.
- They are also known as Economic Cost or Imputed Cost

IX. FIXED COST

- A cost which accrues in relation to the passage of time and which within certain output or turnover limits tends to be unaffected by fluctuation in volume of output or turnover.
- Characteristics:
 - i) Amount of fixed cost remain constant.
 - ii) Average fixed cost decreases with increase in output.
 - iii) Eg: Salary, Insurance, etc.

X. VARIABLE COST

- A cost which in aggregate tends to vary in direct proportion to changes in the volume of output or turnover.
- Characteristics:
 - i) Variable cost varies directly with output/sales.
 - ii) Variable cost is easily chargeable output.
 - iii) Eg: Direct material, Direct labour cost, etc.

XI. SEMI – VARIABLE COST

- A cost containing both fixed and variable elements which is therefore partly affected by fluctuation in the volume of output or turnover.
- Characteristics:
 - i) Amount is neither fixed nor varies directly along with the output.
 - ii) Eg: Telephone bill, Electricity bill, etc.

XII. RELEVANT COST

- Relevant cost helps in specific management decision making.
- Business decision involves planning for future and consideration of various alternative course of action.
- In the planning process, the costs which are affected by the decision are future costs. Such future costs are called relevant cost.

XIII. DIRECT COST

- Cost that are related to the cost object and can be traced in an economically feasible way.

XIV. INDIRECT COST

- Cost that are related to cost object but cannot be traced to it in an economically feasible way.

XV. PRE – DETERMINED COST

- A cost which is computed in advance before production or operation start on the basis of specification of all the factors affecting cost is known as pre – determined cost.

XVI. STANDARD COST

- A pre – determined cost which is calculated from management's expected standards of efficient operation and the relevant necessary expenditure.

XVII. 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.

XVIII. ESTIMATED COST

- Estimated costs are prospective cost since they refer to prediction of cost.

XIX. DIFFERENTIAL COST

- It refers to change (increase or decrease) in total cost variable as well as fixed due to change in activity level, technology, process or method of production.

XX. CAPITALIZED COST

- These are costs which are initially recorded as assets and subsequently treated as expenses.

XXI. PRODUCT COST

- These are costs which are associated with the purchase and sale of goods. Under Indian GAAP, product cost will be those cost which are allowed to be part of the value of inventory as per AS – 2.

XXII. SHUT DOWN COST

- All fixed cost which cannot be avoided during the temporary closure of a plant, will be known as Shut down cost.

XXIII. ABSOLUTE COST

- These costs refer to the cost of any product, process or unit in its totality. Cost depicted in absolute amount may be called Absolute cost and are base costs on which further analysis and decisions are made.

XXIV. DISCRETIONARY COST

- 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.

XXV. PERIOD COST

- These are cost which are not assigned to the products but are charged to expense against the revenue of the period in which they are incurred.

XXVI. ENGINEERED COST

- These are cost that result specifically from a clear cause and affect relationship between inputs and outputs.

XXVII. PRODUCTION COST

- The cost of sequence of operation which begins with supplying materials, labour and services and ends with primary packing of the product.

XXVIII. SELLING COST

- The cost seeking to create and stimulate demand and of securing orders.

XXIX. DISTRIBUTION COST

- The cost of sequence of operation which begins with making the packed product available for dispatch and ends with making the reconditioned returned empty package, if any available for re – use.

XXX. ADMINISTRATIVE COST

- The cost of formulating the policy directing the organization and controlling the operation of an undertaking which is not related directly to production selling and distribution, research and development activity or function.

XXXI. RESEARCH COST

- The cost of researching for new or improved products, new application of materials or improved methods.

XXXII. COMMITTED COST

- This is future in nature but which arise from past decisions, perhaps as the result of a contract.

XXXIII. DEVELOPMENT COST

- The cost 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 product and ends with commencement of formal production of that product or by that method

Q. 5) Explain following Centre?

I. COST CENTRE

- It is defined as a location person or an item of equipment for those which may be ascertained and used for purpose of cost control.

II. PERSONAL COST CENTRE

- Personal cost centre consists of group of persons or person.

III. IMPERSONAL COST CENTRE

- It consists of a location or an item of equipment.

IV. PRODUCTION COST CENTRE

- It is a cost centre where raw material is processed and converted into finished goods. Eg: Machinery shops, welding shops, etc.

V. SERVICE COST CENTRE

- It is a cost centre which serves as an ancillary unit and renders services to a production cost centre. Eg: Power house, Gas cylinders, etc.

VI. COST UNIT

- It is a unit of product service or time (or combination of these) in relation to which cost may be ascertained or expressed.

VII. PROFIT CENTRE

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

VIII. INVESTMENT CENTRE

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

Q. 6) what are the main objective of Cost Accounting?

The objectives are as follows:

- Ø To ascertain an analyze cost.
- Ø To control cost.
- Ø To reduce cost.
- Ø To fix the selling price.
- Ø To provide information.

Q. 7) 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. Eg: Drill bits, Chisels, Screw Cutters, etc.

TREATMENT

- i) Small tool purchased may be capitalized and depreciated over their life. 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
 - ü Factory overheads
 - ü Overheads of the department using small tool.
- ii) Cost of small tool should be charged fully to the department to which they have been issued, if their life is not ascertainable.

Q. 8) What do you mean by Chargeable Expense and give its treatment?

- Ø These are the expenses which can be directly charged to jobs, product, and process.
- Ø These are also called Direct Expense.
- Ø Depending on the situation the same expense can be treated as Direct or Indirect expense.
- Ø Eg: Hiring charges of a machine; specifically hired to complete job is direct expense and hired for various purpose then treated as indirect cost.
- Ø Direct expenses or chargeable expenses are treated as a part of prime cost.

Q. 9) How SYNERGIC EFFECT helps in reduction in cost?

Cost reduction means “Achievement of real and permanent reduction in the unit cost of goods manufactured or services rendered without impairing their suitability for the use intended or diminution in the quality of the product”. Analysis of Synergic effect is helpful in cost reduction.

Q. 10) What are the items generally included in good uniform costing manual?

Ø INTRODUCTION

- Statement of objectives.
- Purpose of the system.
- Scope of the system.
- Need for the system.

Ø ORGANIZATION

- Organizational structure for developing and operating the system.
- Stages or steps for implementing the systems.

Ø SYSTEM OF ACCOUNTING

- Principles of accounting to be followed.
- Span of accounting period.
- Classification of accounts.
- Description of accounts.

Ø METHOD OF COSTING

- Costing period.
- Unit of production.

Ø REPORTING

- Reporting period.
- Ratios.

CHAPTER 2: MATERIAL COSTING

Q.1) How the following items are to be treated in cost?

I. CARRIAGE INWARD RAW MATERIAL :

- It represents the expenditure incurred in bringing raw materials to factory from outside.
- This expense is directly allocated to materials and thus forms a part of the cost of such materials.
- When allocating specific items of material is difficult, the expense is treated as Manufacturing Overheads and is charged to the Cost of Production at a pre – determined rate.

II. STORAGE LOSSES :

- The storage losses can be classified into two categories:
 - Ø NORMAL LOSSES: Losses due to evaporation, shrinkage, moisture, etc. are considered as Normal Losses. Such losses are absorbed by good production units by inflating the cost of materials issued for production.
 - Ø ABNORMAL LOSSES: Losses due to fire, flood, storm, theft, etc. are treated as Abnormal Losses. If these losses are heavy and are not recoverable from the insurance authorities, it is preferred to charge them to Costing Profit & Loss A/C.

III. INSURANCE COST ON RAW MATERIAL:

- The amount paid as Insurance Cost on stock of raw material is meant for covering the risk which may arise due to fire, theft, riot, etc.
- The Insurance Cost is apportioned over different materials on the basis of their value.
- This cost may be charged directly to the cost of materials.

IV. CASH DISCOUNT RECEIVED:

- It is an allowance given by the vendor for prompt payment of material price.
- The opinion among accountants about its treatment differs as follows:
 - Ø It should be deducted from the invoice price of the materials. This way the discount received will reduce the purchase price of the materials.
 - Ø It may be treated as an item of financial nature and therefore be kept outside the purview of Cost Accounting.

V. MATERIAL HANDLING COST:

- Material Handling Cost refers to the expenses involved in receiving, storing, issuing and handling materials.
- It can be dealt in Cost Accounts in two ways:
 - Ø Either these cost are included as part of the cost of materials by establishing a separate handling rate.
 - Ø By including along with those of manufacturing overhead and be charged over the products on the basis of direct labour or machine hours.

VI. DEFECTIVES:

- Defectives refer to those units or portions of production which do not meet the prescribed specification & are re – worked or re – conditioned.
- Defectives may be normal or abnormal.

Ø NORMAL DEFECTIVES:

- i. **GOOD OUTPUT:** The entire cost of rectification of normal defective is charged to good units.
- ii. **GENERAL OVERHEAD:** If department responsible for such defective is not currently identifiable, then rectification cost are charged to Costing P/L A/C.
- iii. **DEPARTMENTAL OVERHEAD:** If department responsible for such defective is correctly identified, then rectification cost are charged to such department.
- iv. **SPECIFIC COST:** If it is easily identified with specific job, the rectification cost should be charged to that job.

Ø ABNORMAL DEFECTIVES: The rectification costs are charged to Costing P/L A/C.

VII. WASTE:

- It represents that portion of raw materials which is either lost or evaporates or shrinks during a manufacturing process. It may be visible or invisible.
- It has no recovery value.
- Waste may be normal or abnormal.

Ø NORMAL WASTE: It is absorbed in Cost of net output.

Ø ABNORMAL WASTE: It is transferred to Costing P&L a/c.

VIII. SCRAP:

- The incidental residue arising from the manufacturing operations, small in quantity and low in value, recoverable without further processing.
- Where the value of scrap is negligible, it may be excluded from costs.
- Where scrap value is considerable, the net sales proceeds of scrap is deducted from the material cost or factory overhead.

IX. SPOILAGE:

- Spoilage can be defined as the materials which are badly damaged in the course of manufacturing operation to the extent that they cannot be rectified economically and hence taken out of process, to be disposed off in some manner without further processing.
- There may be Normal or Abnormal Spoilages which is discussed below:
 - Ø NORMAL SPOILAGE: If the cost is normal and inherent, then cost of spoilage is absorbed by charging either to the specific production order or to the production overheads.
 - Ø ABNORMAL SPOILAGE:
 - i. If the cost arises in the process then it is charged to Costing Profit & Loss A/C.
 - ii. If spoilage is reused as raw material in same process, no separate accounting treatment is required.
 - iii. If spoilage is used for any other process or job, a proper credit should be given to relevant process a/c or job a/c.

Q. 2) How is slow moving and non – moving items of stores detected and what steps are necessary to reduce such stocks?

Slow moving and non – moving items can be detected in following ways:

- i. By preparing and scanning periodic reports showing the status of different items of stores.
- ii. By calculating the stock holding of various items in terms of number of days/months of consumption.
- iii. By computing ratios periodically relating to the issues as a percentage of average stock held.
- iv. By implementing the use of a well designed information system.

Steps to reduce stock of slow moving and non – moving items of stores:

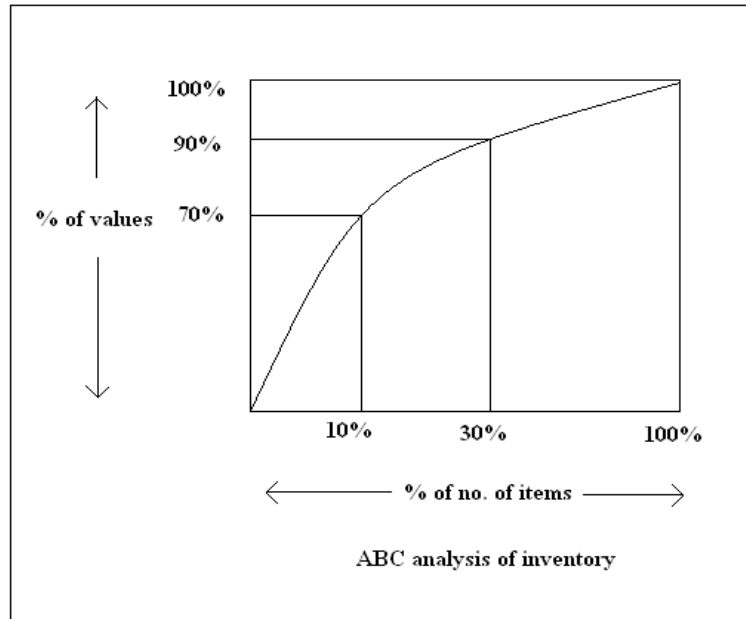
- Proper procedure and guidelines should be laid down for the disposal of non – moving items before they further deteriorates in value.
- Diversity in production to use up such materials.
- Use these materials as substitute in place of other materials.

Q. 3) Why LIFO has an edge over FIFO or any other method of pricing material issue?

- Under LIFO method, production is charged with current market prices and hence pricing of the production is facilitated.
- Whereas in case of FIFO method, production is charged with old price.
- In the same way, under Weighted Price Method, the rise in price is spread over a large number of units and therefore its effect is much reduced.
- The average price is always less than the current market price. However, determination of the average price requires a lot of clerical work.
- Therefore, we prefer to use LIFO method; so the product cost is near to near to market price.

Q. 4) Discuss ABC analysis as a system of inventory control?

- It exercises discriminating control over different items of stores classified on the basis of investment involved.
- “A” category of items consists of only a small percentage i.e. approximately 10% of total items handled by stores but requires heavy investment about 70% of inventory value because of their high prices or heavy requirement or both.
- “B” categories of items are relatively less important. They may be approximately 20% of the total items of material handled by stores. The %age of investment required is approximately 20% of the total investment in inventories.
- “C” category of items does not require much investment. It may be about 10% of total inventory value but they are nearly 70% of the total items handled.
- EOQ, Re – order level concepts are usually used in case of “A” category items.



Q. 4) Explain EOQ and list down its assumptions?

- Ø EOQ is an abbreviation of Economic Order Quantity.
- Ø EOQ represents the size of the order for which both ordering and carrying costs together are minimum.
- Ø If purchases are made in large quantities, inventory carrying cost will be high. If the order size is small, ordering cost will be high.
- Ø Hence it is necessary to determine the order quantity for which ordering and carrying cost are minimum.

FORMULA: $EOQ = \sqrt{\frac{2AO}{C}}$ (Economic Order Quantity - Wilson's Formula)

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.

Q. 5) Distinguish between Bin Card & Stores Ledger?

SR. NO	BIN CARD	STORES LEDGER
1	Bin cards are maintained in the stores and are serving the purpose of stock register.	Stores ledger is maintained in the Cost Accounts Department.
2	Here transactions are posted individually.	Here transactions are posted periodically.
3	Posting is done at the time of issue of materials.	Posting is done after the issue of materials.

Q. 6) REPLACEMENT PRICE?

Replacement price is defined as the price at which it is possible to purchase as item identical to that which is being replaced or revalued.

Q.7) STANDARD PRICE?

A standard price may be defined as a predetermined price fixed for a specified period on the basis of all factors which may affect future price.

Q. 8) RE – ORDER LEVEL?

Re – order level is defined as that level of an inventory item where a fresh order for its replenishment is placed.

FORMULA: FORMULA SHEET

Q. 9) RE – ORDER QUANTITY?

ROQ is defined quantity of an inventory item for which order is placed again & again. EOQ is ROQ but not vice – versa.

FORMULA: FORMULA SHEET

CHAPTER 3: LABOUR CONTROL

1) What do you mean by casual worker and outworker?

- Ø A worker who is appointed for a short duration to carry on normal business activities in place of a regular but temporarily absent worker.
- Ø Such worker is also known as “DAILY WAGER” or “BALDIES”.
- Ø A worker who does not work in the factory premises but either works in his home or at a site outside the factory is known as an outworker.
- Ø He is normally compensated on the basis of his output.

2) Discuss two types of costs which are associated with labour turnover?

Two types of costs are:-

Ø Preventive Costs:-

- These costs are incurred to keep the labour turnover rate at a low level.
- They include cost of accommodation transport facilities, medical services, lighting etc.
- Rate of labour turnover is low if company incurs high preventive costs.

Ø Replacement Costs:-

- These costs arise due to high labour turnover eg: - cost of advertising, recruitment, selection etc caused as a result of inefficient and inexperienced newly recruited workers.

3) What is the impact of labour turnover on a manufacturing organization working?

- Ø High labour turnover leads to increase in the cost of production due to following reasons:
- Regular flow and schedule of production is disturbed.
 - There are increased cost of training, orientation and induction.
 - New workers cause increased breakage of tools, materials etc leading to wastage resources.

4) Enumerate the various methods of Time booking?

- Ø Piece work card
Ø Clock card
Ø Daily week sheet
Ø Weekly time sheet
Ø Combined time ticket and job ticket
Ø Time ticket
Ø Job ticket

5) Discuss the accounting treatment for the following?

Ø Normal Idle Time:-

- It is treated as a part of cost of production
- Thus, in the case of direct workers an allowance for normal idle time is built into the labour costs rates.
- And in the case of indirect workers it is spread over all the products or jobs through the process of absorption of factory overheads.

Ø Abnormal Idle Time:-

- Abnormal idle time is charged to Costing P/L A/c.

Ø Overtime Premium :-

- If overtime is resorted to at the desire of the customer then the overtime premium may be charged to the job directly.
- If overtime is required to cope with the general production programme or for meeting urgent orders, it is treated as overhead cost of particular department or cost centre which works overtime.
- Overtime worked on account of abnormal condition should be charged to Costing P/L.

6) Enumerate the remedial steps to be taken to minimize the labour turnover?

Ø The following are the remedial steps to be taken to minimize the labour turnover :-

- Exit interview with each outgoing employee to ascertain the reasons for his leaving organization
- 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 persons in the right job.

7) Discuss the effect of overtime payment on productivity?

Ø Overtime work should be resorted to only when it is extremely essential because it involves extra cost. The overtime payment increases the cost of production in following ways:-

- The overtime premium paid is an extra payment in addition to the normal rate.
- The efficiency of operators during overtime work may fall and thus output may be less than the normal output.

8) State the circumstances in which time rate system of wage payment can be preferred in a factory?

Ø Following are the circumstances:-

- Persons whose services cannot be directly or tangibly measured.
- Workers engaged on highly skilled jobs or rendering skill services.
- Where the place of output is independent of the operator.

9) Distinguish between Job evaluation and Merit Rating?

- Ø Job evaluation is the ascertainment of the relative worth of jobs within a company and merit rating is the assessment of the relative worth of the man behind the job.
- Ø Job evaluation and its accomplishment are meant to set up a rational wage and salary structure whereas Merit Rating provides a scientific basis for determining fair wages for each worker based on his ability and performance.

10) Labour turnover? Methods of measurement?

- Ø Labour turnover refers to “the rate of change in the composition of labour force during a particular period measured against suitable index”.
- Ø It arises because organization is dynamic and not static.
- Ø Methods:-

- Separation method:-

$$\text{LTO} = \frac{\text{No. of Separation during the period}}{\text{Average No. of employees during the period}} \times 100$$

- Replacement method:-

$$\text{LTO} = \frac{\text{No. of Replacement during the period}}{\text{Average No. of employees during the period}} \times 100$$

- Flux method:-

$$\text{LTO} = \frac{\{\text{No. of Separation during period}\} + \{\text{No. of replacement during period}\}}{\text{Average No. of employees during the period}} \times 100$$

Where,

Average No. of employees during the period =

$$[\{\text{Employees at the beginning}\} + \{\text{Employees at the end of the year}\}] / 2$$

CHAPTER 4: OVERHEADS

1) Explain how under absorption and over absorption are treated in cost accounts?

Ø Three importance methods are widely used for accounting of over & under absorption of production overheads:-

- Use of supplementary OVER HEADS absorption rate.
- Write off to Costing P/L a/c
- Carry over to the next period accounts.

2) When is supplementary OVER HEADS absorption rate method preferred?

Ø Supplementary OVER HEADS absorption rate method is preferred when :-

- There is a serious estimation error.
- When there is a substantial change in the level of activities.
- When there is a major change in the production method.
- In the case of contract on cost plus basis.

3) Blanket overhead rate? In which situations it is to be used and why?

- Ø It is also known as “single” or “plant” wide OVER HEADS absorption rate.
- Ø Blanket rate =
$$\frac{\text{Budgeted OVER HEADS for entire factory}}{\text{Budgeted level of activity}}$$
- Ø This method is used when the size of the company is small or when the burden of OVER HEADS is more or less uniform among all the production dept.
- Ø Limitations:-
 - Such rate may render the valuation of WIP erroneous.
 - As the performance of the individual dept. cannot be assessed properly with this rate so no satisfaction managerial control is possible.

4) How do you deal the following in cost accounts?

Ø Research cost:-

Research costs are incurred under 2 heads:-

- **Basic research cost** which is incurred for improving the existing scientific and/or technical knowledge.
- It should be treated as production OVER HEADS for a particular period and absorb it in a product cost.
- **Applied Research Cost** which is done for the purpose of achieving a particular motto or objective.
- It is further classified into 2 parts for the costing purpose. They are :-
 - I. If it is incurred for the improvement of the existing product and methods of production it should be treated as production OVER HEADS and absorbed accordingly.
 - II. If it is incurred for innovating new products or methods then such cost is absorbed on the basis of amortization.

Ø Development cost:-

- Development cost is the cost incurred during the implementation of the decision to produce a new product(s).
- Similar to treatment of applied research cost

Ø Fringe benefits:-

- If any fringe benefits are incurred for factory workers, it should be treated as Factory OVER HEADS or production OVER HEADS and apportioned among all the production and service dept. on the basis of number of workers in each dept.
- Fringe benefits relating to office, selling & distribution staff should be treated as office & administration OVER HEADS and S&D Over Heads & recovered accordingly.

Ø Bad Debts:-

- It is a disputed cost
- There are two views :-
 - I. Cost expense :- It is treated as S&D OVER HEADS
 - II. Financial Expense :- charge to P/L A/c

Ø Selling cost:-

- It is defined as the cost seeking to create and stimulate demand and of securing order.
- It is recovered either on the basis of products or channels of distribution or by any other means.
- Since selling cost are incurred for the benefit of many cost centres so a suitable basis it to be established for apportioning it to the various cost centres.

Ø Training cost:-

- Cost Incurred by training dept.
- For training = Factory wages – Prod OVER HEADS
- For training = Office Staff – Office & Administration OVER HEADS
- For training = Sales Staff – S&D OVER HEADS
- If labour turnover is very high (abnormally high) training cost in such a case will also be very high
 - I. In such case over and above the normal limit cost should be excluded from the total training cost and transferred to costing P/L a/c.

Ø Idle capacity cost:-

- It represents the difference between practical capacity and the capacity based on long term sales expectancy/actual capacity.
- It is part of practical capacity which has not been utilized due to non availability of R.M, shortage of skilled labour etc.
- Idle capacity cost = {Budgeted Level Of activity – Actual Level Of activity} X Absorption rate
 - I. Normal Idle capacity: - Arises due to lack of demand or seasonal nature of the product - Absorbed into the cost of production.
 - II. Abnormal Idle capacity:- Arises due to lack of proper planning and control or due to lack of management forecasting - Charged to costing P/L a/c.
 - III. Any other external factors: - Charged to costing P/L a/c.

5) Multiple overhead rates?

- Ø When different rates are computed for each producing dept. & service dept. cost centre, each product or product line, each production factor and for fixed OVER HEADS, variable OVER HEADS they are known as multiple rates.

- Ø
$$\text{OVER HEADS Rates} = \frac{\text{OVER HEADS Cost allowed and Apportioned to each cost centre}}{\text{Corresponding Base}}$$

Corresponding Base

6) Discuss three methods of re-apportionment?

- Ø Direct Re-apportionment:-

- Under this method, support dept. costs are directly apportioned to various production dept. only.
- This method does not consider the service provided to other service.

- Ø Step ladder method:-

- Under this method, the cost of service dept, which serves the maximum number of dept., is first apportioned to other service dept. and production dept.
- After this, the cost of service dept, serving the next largest no. of dept. is apportioned.

- Ø Reciprocal service method:-

- This method recognizes the fact that where there are two or more service dept. they may render services to each other and therefore these inter-departmental services are to be given due weight age while re-distributing the expenses of the support dept.
- This method is conceptually preferable.

CHAPTER 5: INTEGRAL & NON INTEGRAL ACCOUNTS

1) What are the essential pre-requisites of Integrated Accounting system?

Ø Following are the pre-requisites:-

- Deciding the integration of the two sets of books.
- A suitable coding system must be developed to save the purpose of both financial and cost accounts.
- Perfect co-ordination should exist between the staff responsible for financial aspects and the cost aspects of the accounts.

2) What are the advantages of Integrated Accounting?

- Ø Since there is one sets of books, there is one figure of profit. Hence the question of reconciliation does not arise.
- Ø Efforts in duplicate recording of entries and to maintain separate set of books are saved. Thus, there is saving of time and labour.
- Ø Costing data are available from books of original entry and hence, no delay is caused in obtaining information.

3) What do you mean by Integrated A/c?

- Ø Integrated accounting is the name given to the system of accounting whereby cost and financial accounts are kept in the same set of books.
- Ø Such a system will have to afford full information required for costing as well as for financial accounts.

CHAPTER 6: RECONCILIATION

1) What are the reasons for the disagreement of profits as per financial accounts and cost accounts?

Ø Following are the reasons:-

- Certain items are shown only in financial accounts and not in cost accounts.
 - I. Profit / loss on sale of fixed assets
 - II. Payment of income tax
 - III. Distribution of dividends
 - IV. Cash discount etc
- Certain items are shown only in cost accounts and not in financial accounts
 - I. Notional rent on premises owned
 - II. Notional interest on capital
- Disagreement due to under/over absorption of overhead items.
- Difference due to use of different methods of stock valuation
- Abnormal losses and gains.

2) Why is it necessary to reconcile the profits between the cost accounts and financial accounts?

- Ø The reasons for difference in the profit/loss, Cost A/c and Financial A/c are to be finding out.
- Ø Reliability of cost accounting data and financial accounting data is verified by reconciling both the accounts
- Ø It promotes co-operation and co-ordination between the two departments
- Ø The accuracy of both the accounts is cross verified.

CHAPTER 7: JOB COSTING & BATCH COSTING

1) Describe Job costing & Batch Costing?

- Refer chapter 1; Q3; Point 1 & 2

2) Salient features of Job Costing & Batch costing?

Ø Job Costing:-

- Job costing is applied in industries which usually produce against customers specific orders.
- In the jobbing industries no two jobs are alike each job is specifically different and requires special treatment.
- Job costing includes both direct costs such as direct material, labour and indirect costs such as rent, depreciation etc.
- WIP defers from one period to another.

Ø Batch Costing:-

- Batch costing is applied in industries where identical products are produced.
- The output of batch consists of a number of units and it is not economical to ascertain cost of every unit of output independently.

3) Distinguish :-

SR NO	Job Costing	Batch Costing
1	A job is carried out or a product is produced by specific orders	The process of producing the product has a continuous flow and product is homogeneous.
2	Cost are determined for each job	Costs are compiled on time basis.
3	Each job is separate and independent of other jobs.	Product lose their individuality as they are manufactured in a continuous flow

4) In batch costing, how is EBQ determined?

Ø Setup Cost:-

- The setup cost is the cost of setting up and dis-assembling of the machines and tools.
- The costs remains fixed irrespective of the batch size.
- Thus, if batch size is low, the setup cost per unit is high and vice versa.

Ø Carrying cost:-

- The costs associated with holding the inventory are called carrying cost.
- It includes variable cost and is dependent on batch size.
- Thus, if the batch size increases the carrying costs also increases and vice versa.
- Formula:- $EBQ = \sqrt{2AS/C}$ **(SQUARE ROOT FOR ENTIRE FORMULA)**

Where A = annual demand for the product

S = setup costs per batch

C = carrying cost per unit

- If the rate of interest (I) and unit cost of production (C) are given then,

Formula: - $EBQ = \sqrt{2AS/IC}$

CHAPTER 8: CONTRACT COSTING

1) Discuss the implication of cost-plus contracts from the view point of manufacturer and customer?

Ø Cost- plus costing:-

- Cost plus contract is a contract in which the value of the contract is ascertained by adding a fixed margin of profit to the total cost of the contract.

Ø View point of Manufacturer:-

- He is assured of a certain percentage of profit in advance.
- The possibility of incurring any loss is completely eliminated.
- If the contractor affects any economy it will lead to lower profit to him.

Ø View point of customer:-

- The price paid by customer depends upon actual cost.
- The customer is completely fortified in the situation of an uncertain market
- Due to complete security about profit margin there may not be any incentive for the manufactured to reduce costs; in fact he will tend to increase the costs.

2) Discuss the Escalation Clause?

- Ø This clause is usually provided in the contracts as a safeguard against any likely changes in the price or utilization of material and labour.
- Ø If during the period of execution of contract the prices of material rise beyond a certain limit, the contract price will be increased by an agreed amount.
- Ø Inclusion of such a term in a contract deed is known as an “Escalation Clause”

CHAPTER 9: OPERATING COSTING

1) Distinguish between operating costing and operation costing?

Ø Operating Costing:-

- It is a method of costing applied by undertakings which provide services rather than production of commodities.
- It is a form of operation costing.

Ø Operation Costing:-

- It represents a refinement of process costing.
- In this each operation instead of each process or stage of production is separately costed.
- This may offer better scope for control.
- At the end of each operation, the unit operation cost may be computed by dividing the total operation cost by total input units.

2) Explain the essential features of operating cost?

Ø The operating costs can be classified under three categories:-

- Operating & running charges – includes expenses of variable nature.
- Fixed or standing charges – includes expenses of fixed nature.
- Maintenance charges – includes expenses of semi- variable nature.

Ø The cost unit is double unit like passenger –mile, kilowatt-hour etc.

3) Short notes on operation costing?

- Ø 1st 4 points of Q 1.
- Ø The two costing methods included under this head are process costing and service costing

4) What is standard load?

- Ø An alternative unit for the distribution of transport cost is the “Standard load”.
- Ø Where the goods to be transported are of varying bulk and weight, the calculation of actual number of tonne-km is not an easy matter. In such a case a Standard load is selected as the unit i.e. load which a lorry would carry
- Ø This would have reference both to bulk & weight and would give an efficient method for distributing the cost of transport over different departments.

CHAPTER 10: PROCESS COSTING

1) **The value of scrap generated in a process should be credited to the process account. Do you agree?**

- Ø This statement is **not correct**.
- Ø The value of scrap (as normal loss) received from its sale is credited to the process account.
- Ø But the value of scrap received from its sale under abnormal conditions should be credited to abnormal loss account.

2) **What is Inter-process Profits?**

- Ø In some process industries the output of one process is transferred to the next process not at the cost but at the market value or cost plus a percentage of profit.
- Ø The difference between cost and transfer price is known as inter process profits.
- Ø Advantages:-
 - Each process is made to stand by itself as to the profitability.
 - Comparison between cost of output and its market price is facilitated.
- Ø Disadvantages:-
 - The use of inter process profits involves complication.
 - The system shows unrealized profits because of stock not sold out.

3) Normal loss, abnormal loss and abnormal gain and its treatment?

Ø Normal loss:-

- It is defined as the loss of material which is inherent in nature of work.
- Such wastage can be estimated in advance on the basis of past experience or technical specification
- When the loss fetches no value the cost of normal loss is deducted by good production units of the process.
- If the normal wastage realizes some value, the value is credited to the process account to arrive at normal cost of normal output.

Ø Abnormal loss:-

- It is defined as the wastage which is not inherent to manufacturing operations.
- Such a loss cannot be estimated in advance.
- The units representing abnormal loss are valued at cost and debited to separate account called "Abnormal loss a/c".
- If it fetches some value the same is credited to abnormal loss a/c.
- Difference in abnormal loss a/c is transferred to costing P/L a/c

Ø Abnormal Gain:-

- If in a process the actual process is less than the estimated normal loss, the difference is considered as abnormal gain.
- It is accounted in the same way as abnormal loss.
- The concerned process account is debited with the abnormal gain units and value, and the abnormal gain account is credited.
- The abnormal gain a/c is debited with the figure of reduced normal loss and value.
- Difference of abnormal gain a/c is transferred to costing P/L a/c.

4) Explain Equivalent units?

- Ø When opening and closing stock of WIP exists, unit costs cannot be computed by simply dividing the total cost by total number of units still in process.
- Ø We can convert the WIP units into FG units called Equivalent units so that the unit costs of these units can be obtained.
- Ø Equivalent Completed units = Actual No. of units in process of manufacture X % of work completed.

CHAPTER 11: JOINT PRODUCT & BY-PRODUCT

1) Joint product & by product?

- Ø Joint product represents two or more products separated in the course of the same processing operations, usually requiring further processing, and each product being in such proportion that no single product can be designated as a major product.
- Ø By product may be defined as any saleable or usual value incidentally produced in addition to the products. Sometimes, the word wastage or even loss is used to denote what is really a byproduct.
- Ø Distinguish:-
 - Joint products are of equal importance whereas byproducts are of small economic value.
 - Joint products are produced simultaneously but the by products are produced incidentally in condition to the main products.

2) How would you account for by product in cost accounting?

Ø When they are of small total value:-

- The sale value of the byproduct may be credited to the P/L a/c and no credit be given in the cost accounts.
- The sale proceeds of the byproducts may be treated as deduction from the total costs.

Ø When they are of considerable value:-

- In this case, it may be regarded as joint products.
- To determine exact costs of byproducts the costs incurred upto the point of separation, should be apportioned over byproducts and joint products by using a logical basis.
- In this case, joint cost may be divided over joint products and byproducts by using physical unit method or ultimate selling point (if sold)

Ø When they require further processing:-

- In this case, the net realizable value of the byproduct at the split off point may be arrived at by subtracting the further processing cost from the realizable value of the byproducts.

3) What are the methods of apportioning joint cost over joint products?

Following are the methods:-

Ø Physical Unit Method:-

- This method is based on the assumption that the joint products are capable of being measured in same units.
- According joint cost here are apportioned on the basis of such physical base such as weight or measure expressed in gallons, tonnes etc.
- This method cannot be applied if the physical units of the two joint products are different
- Defect: - It gives equal importance and value to all joint products.

Ø Average Unit Cost Method:-

- Under this method, total process cost (upto point of separation) is divided by total units of joint products produced.
- The effect of application of this method is that all joint products will have uniform cost per unit.
- Under this method customer of high quality items are benefited as they have to pay fewer prices on their purchase.

Ø Survey/Point Value Method:-

- Under this method, joint costs are apportioned on the basis of percentage/point values assigned to the products according to their relative importance.
- The %age or points used for the purpose are usually compared by the management with the help of technical advisers.

Ø Contribution Margin Method:-

- According to this method, joint costs are segregated into two parts – variable and fixed.
- Variable costs are apportioned on the basis of units produced
- Fixed costs are apportioned on the basis of contribution margin.

Ø Market Value Method:-

- This method is more popular as it makes use of realistic basis for apportioning joint costs.
- Under this method, products are made to bear a proportion of the joint cost on the basis of their ability to absorb the same.
- Market value = Units Produced X Price of unit joint product

4) Why proper apportionment of joint cost over joint products is required?

Ø Proper apportionment of joint cost over joint products is of considerable importance as this affects:-

- Valuation of closing inventory
- Pricing of products
- Profit or loss on sale of different products.

5) What are the methods of apportioning joint cost over byproducts?

Following are the methods:-

Ø Market Value or Value on Realization:-

- The realization on the disposal of the byproduct may be deducted from the total cost of production so as to arrive at the cost of the main product.

Ø Standard cost in technical estimates:-

- Byproduct may be valued at standard cost.
- The standard may be determined by averaging cost recorded in the past and making technical estimates of the number of units of original raw material going into the main product and the number forming byproduct or by adopting some other consistent basis.

Ø Comparative Price:-

- Under this method, the value of the byproduct is ascertained with reference to the price of a similar or an alternative material.

Ø Re-use basis:-

- In some cases, the byproduct may be of such a nature that it can be reprocessed in the same process as part of the input of the process.
- In that case, the value put on the byproduct should be same as that of materials introduced into the process.

CHAPTER 12. STANDARD COSTING

Q. 1) What is Standard Cost?

- Standard Cost is defined as “A pre – determined cost which is calculated from management’s standards of efficient operation and the relevant necessary expenditure.
- It may be used as a basis of price fixing and for cost control through variance analysis.”

Q. 2) Types of Standards?

- I. **Ideal Standards:** These represent the level of performance attainable when prices for material and labour are most favourable, when the highest output is achieved with the best equipment and layout and when the maximum efficiency in utilization of resources results in maximum output with minimum cost.
- II. **Normal Standard:** These are standards that may be achieved under normal operating conditions. These standards are however, difficult to set because they require a degree of forecasting.
- III. **Basic / Bogey Standard:** These standards are used only when they are likely to remain constant over a long period. Accordingly, a base year is chosen for comparison purpose. Current standards are also to be prepared. When basic standards are used, variances are not calculated instead the actual cost is expressed as a percentage of basic cost. The current cost is also similarly expressed and the two percentages are compared to find out how much the actual cost has deviated from the current standard.
- IV. **Current Standard:** These standards reflect the management’s anticipation of what actual cost will be for the current period. These are the cost which the business will incur if the anticipated prices are paid for the goods and services and the usage corresponds to that believed to be necessary to produce the planned output.

Q. 3) how are the cost variance disposed off in Standard Costing?

Following are the commonly used methods:

- i. Transfer all variances to Profit & Loss a/c. Under this method, stock of Work – in – progress, Finished Goods and cost of sales are maintained at standard cost and variances are transferred to Profit & Loss a/c.
- ii. Distributing variances on Pro – rata basis over the Cost of Sales, Work – in – progress & Finished Goods stocks by using suitable basis.
- iii. Write – off quantity variance to Profit & Loss a/c and spread price variance over to cost of Sales, Work – in – progress & Finished Goods.

Q. 4) Mention the causes that give rise to Labour Rate Variance?

- i. Increase in Actual wage rate per hour paid to workers.
- ii. Payment of special increments or allowances to workers.
- iii. Resorting to excessive overtime.
- iv. Use of wrong type of labour.

Q. 5) Describe three distinct group of variance that arise in Standard Costing?

- i. **Variances of Efficiency:** These are the variances which arise due to efficiency or inefficiency in use of material, labour, etc.
- ii. **Variances of Price & Rates:** These are the variances which arise due to changes in procurement price and standard price.
- iii. **Variances due to Volume:** These represent the effect of difference between actual activity and standard level of activity.

Q. 6) State the features of Partial Plan of Standard Costing Accounting Procedure?

- i. Partial Plan system uses current standards in which the inventory will be valued at current standard cost figure.
- ii. The analysis of variances is done after a month.
- iii. The closing balance of Work – in – progress is also shown at Standard Cost.

Q. 7) how the opportunity cost for inefficient use of scarce resources is presented in variance reports under a Standard Costing System?

Opportunity Cost arises from failure to use scarce resources efficiently such as:

- i. Inefficient capacity utilization results in loss of production and consequently loss of contribution.
- ii. Inefficient use of scarce material results in lower production and loss of contribution.

Q. 8) Record Journal Entries under Single Plan?

Sr. No	JOURNAL ENTRIES
1.	<u>Material Price Variance (ON PURCHASE)</u> Material Control A/C Dr. Material Price Variance A/C Dr. /Cr. (Balancing Figure) To Creditors A/C [Being entry to record price variance during purchase of materials.]
2.	<u>Material Usage Variance (ON CONSUMPTION)</u> WIP Control A/C Dr. Material Usage Variance A/C Dr. /Cr. (Balancing Figure) To Material Control A/C [Being entry to record of usage variance at standard cost of over/under utilized quantity.]
3.	<u>Labour Rate Variance</u> Wage Control A/C Dr. Labour Rate Variance A/C Dr. /Cr. (Balancing Figure) To Cash A/C [Being entry to record wages at standard rate.]

CHAPTER 13. MARGINAL COSTING

Q. 1) DEFINITIONS:

- I. **MARGINAL COSTING:** The ascertainment of marginal cost and the effects on profit of changes in volume or type of output by differentiating between Fixed Cost and Variable Cost.
- II. **MARGINAL COST:** The amount at any given volume of output by which aggregate variable costs are changed if the volume of output is increased by one unit. Marginal cost can precisely be the same of prime cost and variable overhead.
- III. **DIRECT COSTING:** Direct Costing is the practice of charging all direct cost to operation process or products, leaving all indirect cost to be written – off against profits in the period in which they arise.
- IV. **DIFFERENTIAL COSTING:** It includes fixed and semi – variable expenses. It is the difference between the total costs of two alternatives.
- V. **INCREMENTAL COST:** It is defined as the “the additional cost of a change in the level or nature of activity”. Incremental Cost is not the same at all levels.
- VI. **CONTRIBUTION:** It is the difference between sales value and the marginal cost. It can also be defined as excess of sales revenue over the variable cost.
- VII. **KEY FACTOR:** Key Factor or Limiting Factor is a factor which at a particular time or over a period limits the activities of an undertaking. It may be the shortage of one or more of the productive resources. Ex: Labour hours, raw materials availability, etc.

Q. 2) How CONTRIBUTION helps management in solving problems?

- Ø Fixation of Selling Price.
- Ø Pricing in depression.
- Ø Level of activity planning.
- Ø Operate of Shut – Down decision.
- Ø Selection of an optimum sales mix.

Q. 3) List down the assumptions of Break – Even Analysis?

- i. All cost can be separated into fixed and variable.
- ii. Variable costs vary in proportion to output and fixed cost remains constant.
- iii. There will be no change in general price level.
- iv. The company manufactures a single product.
- v. In case of multi – product company, the sales mix will remain constant.

Q. 4) What are the limitations of Marginal Costing?

- i. Marginal Costing technique is not useful for valuation of inventory.
- ii. Marginal Costing cannot be successfully applied in cost plus contract.
- iii. Marginal Costing excludes fixed cost for decision making.
- iv. Marginal Costing ignores time factor and investment.
- v. Variable Cost does not remain constant per unit of output.

Q. 5) What is Cost – Volume – Profit (CVP) analysis?

CVP analysis is the analysis of cost, volume and profit. Such an analysis explores the relationship between costs, revenue, activity levels and the resulting profits.

ASSUMPTIONS:

- i. Total cost can be separated into fixed and variable cost.
- ii. Selling Price, Variable Cost per unit and the Total Fixed Cost are known and constant.
- iii. All revenues and costs can be added, subtracted and compared without taking into account the time value of money.

Q. 6) What is Break – Even – Point?

The contribution grows along with the sales revenue till the time it just covers the fixed cost. This is the point where neither profits nor losses have been made is known as Break – Even – Point.

$\text{BREAK EVEN POINT} = \frac{\text{FIXED COSTS}}{\text{CONTRIBUTION PER UNIT}}$

Q. 7) What is Margin of Safety?

It can be defined as the difference between the expected level of sales and the break – even sales. The larger the margin of safety, the higher are the chances of making profits.

$$\text{MARGIN OF SAFETY} = \frac{\text{PROFIT}}{\text{PV RATIO}}$$

$$\text{MAR. OF SAFETY RATIO} = \frac{\text{ACTUAL SALES} - \text{BREAK EVEN SALES}}{\text{SALES}} \times 100$$

Q. 8) What is Contribution to Sales ratio or Profit – Volume ratio?

$$\text{PV RATIO} = \frac{\text{CONTRIBUTION}}{\text{SALES}} \times 100$$

Q. 9) What are the measures of improving Margin of Safety?

- i. Increasing the selling price provided the demand is inelastic so as to absorb the increased price.
- ii. Reduction in fixed expenses.
- iii. Reduction in variable expenses.
- iv. Increasing sales volume provided capacity is available.

Q. 10) CHARTS:

- I. **BREAK – EVEN CHART:** A Break – Even Chart records costs and revenue on the vertical axis and the level of activity on the horizontal axis. The Break – Even point is that point where the sales revenue line intersects the total cost line.
- II. **CONTRIBUTION BREAK – EVEN CHART:** It is not possible to use a break – even chart as described above to measure contribution. This chart is based on the conventional Break – Even Chart except for that it shows the variable cost line instead of the fixed cost line. Lines of total cost and sales revenue remain the same.
- III. **PROFIT VOLUME CHART:** It is similar to Break – Even Chart. In this chart, vertical axis represents profits and losses and the horizontal axis is drawn at zero profit or loss.

CHAPTER 14. BUDGETARY CONTROL

Q. 1) What is Budgetary Control? Explain its advantages and disadvantages?

The establishment of budgets relating the responsibilities of executives to the requirements of a policy and the continuous comparison of actual with budgeted results either to secure by individual action the objective of that policy or to provide a base for its revision.

Advantages:

- Ø It enables management to conduct its business activities in efficient & effective manner.
- Ø It is a powerful instrument used by business houses for the control of their expenditure.
- Ø It inculcates the feeling of cost consciousness among workers.

Disadvantages:

- Ø Budgets may or may not be true.
- Ø Budgets are considered as rigid documents.
- Ø Budgets cannot be executed automatically.

Q. 2) FIXED BUDGET V/S FLEXIBLE BUDGET?

Sr. No.	FIXED BUDGET	FLEXIBLE BUDGET
1	It does not change with actual volume of activity achieved.	It can be re-casted on the basis of activity level to be achieved.
2	It is rigid.	It is not rigid.
3	It operates on one level of activity.	It consists of various budgets for different levels of activity.

Q. 3) TYPES OF BUDGETS?

- I. **FUNCTIONAL BUDGETS:** Budgets which relate to the individual functions in an organization is known as Functional Budget.
- II. **MASTER BUDGET:** It is a consolidated summary of the various functional budgets. It serves as the basis upon which budgeted Profit & Loss a/c & forecasted Balance Sheet are built up.
- III. **BASIC BUDGET:** A budget which remains unaltered over a long period of time is called Basic Budget.
- IV. **CURRENT BUDGETS:** A budget which is established for use over a short period of time and is related to the current conditions is called as Current Budget.
- V. **SALES BUDGET:** Sales forecast is the commencement of budgeting and hence sales budget assumes primarily importance.
- VI. **PURCHASE BUDGET:** The production budget is the starting point for determining the estimated quantities of direct materials to be purchased.

EXTRAS

COST SHEET – FORMAT

<u>Particulars</u>	<u>Amount</u>	<u>Amount</u>
Opening Stock of Raw Material	***	
Add: Purchase of Raw materials	***	
Add: Purchase Expenses	***	
Less: Closing stock of Raw Materials	***	
Raw Materials Consumed	***	
Direct Wages (Labour)	***	
Direct Charges	***	
Prime cost (1)		***
Add :- Factory Over Heads:		
Factory Rent	***	
Factory Power	***	
Indirect Material	***	
Indirect Wages (Supervisor	***	
Salary)	***	
Drawing Office Salary	***	
Factory Insurance	***	
Factory Asset Depreciation	***	
Works cost Incurred		***
Add: Opening Stock of WIP	***	
Less: Closing Stock of WIP	***	
Works cost (2)		***
Add:- Administration Over Heads:-		
Office Rent	***	
Asset Depreciation	***	
General Charges	***	
Audit Fees	***	
Bank Charges	***	
Counting house Salary	***	
Other Office Expenses	***	
Cost of Production (3)		***
Add: Opening stock of Finished Goods	***	
Less: Closing stock of Finished Goods	***	
Cost of Goods Sold		***
Add:- Selling and Distribution OH:-		
Sales man Commission	***	
Sales man salary	***	
Traveling Expenses	***	
Advertisement	***	
Delivery man expenses	***	
Sales Tax	***	
Bad Debts	***	
Cost of Sales (5)		***
Profit (balancing figure)		***
Sales		***

MATERIAL

- 1) Reorder level = Maximum usage * Maximum lead time
= Minimum level + (Average usage * Average Lead time)
- 2) Minimum level = Reorder level – (Average usage * Average lead time)
- 3) Maximum level = Reorder level + Reorder quantity – (Minimum usage * Minimum lead time)
- 4) Average level = $\frac{\text{Minimum level} + \text{Maximum level}}{2}$
= Minimum level + $\frac{1}{2}$ Reorder quantity
- 5) Danger level (or) Safety stock level
= Minimum usage * Minimum lead time (preferred)
= Average usage * Average lead time
= Average usage * Lead time for emergency purposes
- 6) 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
- 7) Associated cost = Buying cost pa + Carrying cost pa
- 8) Under EOQ Buying cost = Carrying cost
- 9) Carrying Cost = Average inventory * Carrying cost per unit pa * Carrying cost %
= Average Inventory * Carrying cost per order pa
- 10) Average inventory = EOQ/2
- 11) Buying cost = Number of Orders * ordering cost
- 12) Number of Orders = Annual Demand / EOQ
- 13) Inventory Turnover (T.O) Ratio = $\frac{\text{Material consumed}}{\text{Average Inventory}}$

14) Inventory T.O Period = $\frac{365}{\text{Inventory Turn over Ratio}}$.

15) Safety stock = $\frac{\text{Annual Demand}}{365} * (\text{Maximum lead time} - \text{Average lead time})$

16) Total Inventory cost = Ordering cost + Carrying cost of inventory + Purchase cost

17) Input Output Ratio = $\frac{\text{Quantity of input of material to production}}{\text{Standard material content of actual output}}$

Remarks:-

1) High Inventory T.O Ratio indicates that the material in the question is fast moving

2) Low Inventory T.O Ratio indicates over investment and locking up of working Capital in inventories

3) Market price method:-

a) Replacement price method = Issues are valued as if it was purchased now at current market price

b) Realizable price method = Issues are valued at price if it is sold now

4) Notional price method:-

a) Standard price method = Materials are priced at pre determined rate (or) Standard rate

b) Inflated price method = The issue price is inflated to cover the losses incurred due to natural (or) climatic losses

5) Re use price method = When materials are returned (or) rejected it is valued at different price. There is no final procedure for this method.

ABC Analysis (or) Pareto Analysis: - In this materials are categorized into

<u>Particulars</u>	<u>Quantity</u>	<u>Value</u>
"A" – Important material	10%	70%
"B" – Neither important nor unimportant	20%	20%
"C" – UN Important	70%	10%

Accounting Treatment:-

- 1) Normal Wastage = It should be distributed over goods output increasing per unit cost
- 2) Abnormal Wastage= It will be charged to costing profit and loss a/c
- 3) Sale value of scrap is credited to costing profit and loss a/c as an abnormal gain.
- 4) Sale proceeds of the scrap can be deducted from material cost or factory overheads.
- 5) Sale proceeds of scrap may be credited to particular job.
- 6) Normal Defectives = cost of rectification of defectives should be charged to specific
- 7) Abnormal Defectives = this should be charged to costing profit and loss a/c
- 8) Cost of Normal spoilage is to borne by good units
- 9) Abnormal spoilage should be charged to costing profit and loss a/c

EXTRA FORMULAS ON MATERIAL COSTING

1) ECONOMIC ORDER QUANTITY (EOQ) OR REORDER QUANTITY (ROQ)

It represents the quantity of material which should be purchased each time. These quantities are economical from the angle of the storages & ordering cost.

$$EOQ = \sqrt{\frac{2AB}{CS}}$$

Where

A = Annual Consumption of Qty

B = Buying cost OR cost of placing one order.

CS = Cost of storing one unit of material for one year.

If the cost of the Investment is given then such cost also will be part of CS

Note: - Whenever Discount Factor given in a problem. These Formulas will not be applied for calculating EOQ.

2) Reorder Period OR Delivery Period OR Lead Time:-

It represent the time gap involves between placement of order & Actual Receiving of the Delivery. Such Period is again divided into Maximum Period, Minimum Period, and Average Period & Emergency Period.

3) Reorder Level (ROL):-

It represents that level of stock of which fresh quantity of material should be purchased. The Purchased Quantity will be EOQ.

ROL is calculated as follows:

A]

$$\text{MADIUM USAGE X MAXIMUM DELIVERY PERIOD}$$

B]

$$\text{Normal Usage OR Avg Usage X [Minimum Stock Period + Avg Delivery Period]}$$

C]

$$\text{Safety Stock Quantity + Lead time Consumption Quantity}$$

4) Maximum Stock Level

It represents minimum Qty of stock which should be maintained by Organisation.

$$\text{ROL + ROQ - [Minimum Usage x Minimum Delivery Period]}$$

5) Minimum Stock Level:-

It represents Minimum Qty of stock which should be maintained by Organisation

$$\text{ROL} - [\text{Normal Usage} \times \text{Avg Delivery Period}]$$

6) Average Stock Level:-

It represents on an average how much stock quantity should be maintained.

$$\frac{1}{2} \times [\text{Minimum Stock Level} + \text{Manimum Stock Level}]$$

7) Danger Level:-

It represents that Level of stock below which production will stop.

$$\text{Average Consumption} \times \text{Emergency Delivery Period}$$

8) Material Inventory Turnover Ratio:-

$$\frac{\text{Yearly Consumption Qty}}{\left[\frac{\text{Opening Stock Qty} + \text{Closing Stock Qty}}{2} \right]}$$

9) Material Inventory Period:-

It represents the period of one Consumption Cycle.

$$\frac{365}{\text{Turnover Ratio}} = \text{Ans in Days}$$

LABOUR COST CONTROL

1) Time Rate System

Basic wages: - Hours worked X Rate per hour

Bonus:-

Time Allowed	xx
Time Taken	(xx)
Time Saved	xx

2) Halsey System:-

Bonus = 50% of time saved x Time rate

3) Rowan system:-

Bonus = Time saved/Time allowed x Basic Wages

4) Piece rate system of labour Calculation :-

In this Approach wages are paid according to Quantity produced by the workers.

Amount of Wages [Normal Wages] = Actual Quantity Produced X Std Labour Rate P.u

However efficient workers should be given some incentives & therefore following Approaches will be developed by Orthodox Cost Accountant.

[1] Taylor Approach:-

Level of Efficiency	Remuneration
Less than 100%	83% of Std Piece rate
$\geq 100\%$	120% of Std Piece rate

[2] Merrick Approach:-

Level of Efficiency	Remuneration
Upto 83 1/3% OR 83.33%	Std Piece rate
Above 83 1/3% OR 83.33% but Upto 100%	110% of Std Piece rate
Above 100%	130% of Std Piece rate

[3] Gantt Task

This Approach is combination of Time rate system & Piece rate system.

Level of Efficiency	Remuneration
< 100%	Time Wages
100%	120% of Time wages
> 100%	120% of SPR

[4] Emerson's Efficiency System:-

Level of Efficiency	Remuneration
Upto 2/3rd of STD Output	Time Wages
Upto 2/3rd to 100% of STD Output	Bonus Varies (As per?) 0.01 to 20% (MAX)
Above 100%	20% of Basic Wages + 1% for each % Increased

Barth System : -

Earning = Hourly Rate x $\sqrt{\text{STD Hours} \times \text{Hours Worked}}$

Point Scheme / Badeux System:-

Level of Efficiency	Remuneration
Below Std	Time Wages
Above 100% i.e If time saved	75% of Time saved

5) Single Piece Rate = (Rate per Hour/ Output per Hour) x Rs.../Unit

6) Labour Hour Rate =
$$\frac{\text{Cost To Company}}{\text{Expected No of Hours excluding Normal Idle Time}}$$

7) Labour Cost of Job = Hours Worked on Job x Labour Hour Rate

8) Productivity Index =
$$\frac{\text{Time Allowed} - \text{NIT}}{\text{Time Taken}}$$

*NIT = Normal Idle Time

OVER HEADS

Reapportionment of service department expenses over production department:-

1) Direct redistribution method:

- Service department costs are divided over production department.
- Ignore service rendered by one dept. to another

2) Step method of secondary distribution (or) Non reciprocal method:

- Service department which serves largest number of service department is divided first and go on.

3) Reciprocal service method:

i) Simultaneous equation method (or) Algebraic method

- Equation is formed between service departments and is solved to find the amount due.

ii) Repeated distribution method:

- Service department cost separated repeatedly till figure of service dept. is exhausted or too small.

iii) Trial and Error method:

- Cost of service department is apportioned among them repeatedly till the amount is negligible and the total is divided among production department.

Treatment of Over/Under absorption of overheads:-

i) If under absorbed and over absorbed overheads are of small value then it should be transferred to costing profit and loss a/c

ii) If under and over absorption occurs due to wrong estimates then cost of product manufactured should be adjusted accordingly.

iii) If the same accrued due to same abnormal reasons the same should be transferred to costing profit & loss a/c

Apportionment of overhead expenses – Basis

a) Stores service expenses = Value of materials consumed

b) Factory rent = Floor area

c) Municipal rent, rates and taxes = floor area

d) Insurance on Building and machinery = Insurable value

- | | |
|--|-------------------------|
| e) Welfare department expenses |
Number of employees |
| f) Supervision | |
| g) Amenities to employee's | |
| h) Employees liability for insurance | |
| j) Lighting power = Plug point | |
| k) Stores over heads = Direct material | |
| l) General over heads = Direct wages | |

Reapportionment of service department cost to production department:-

- 1) Maintenance dept. = Hours worked for each dept.
- 2) Pay roll and time keeping = Total labour (or) machine hours (or) Number of employees in each department
- 3) Employment (or) Personnel department = Rate of labour T.O (or) No. of employees of each department
- 4) Stores Keeping department = No. of requisitions (or) value of materials of each department
- 5) Purchase department = No. of purchase orders value of materials of each department
- 6) Welfare, ambulance, canteen, service, recreation room expenses = No. of employees in each department.
- 7) Building service department = Relative area each dept.
- 8) Internal transport service (or) overhead crane service = weight, value graded product handled, weight and distance traveled.
- 9) Transport department = Crane hours, truck hours, truck mileage, Number of packages.
- 10) Power house (electric power cost) = Housing power, horse power machine hours, No. of electric points etc.
- 11) Power house = Floor area, cubic content

PROCESS COSTING

Format of process a/c

Particulars	Unit	Rate	Rs.	Particulars	Unit	Rate	Rs.
To Direct material				By Normal Loss			
To Direct Labour				By Units transferred to other process			
To Indirect material				By Abnormal loss (B/F)			
To Other Expenses							
To Abnormal gain(B/F)							
Total				Total			

Format of Abnormal loss

Particulars	Unit	Rs.	Particulars	Unit	Rs.
To Process a/c			By Sale of wasted units		
			By costing P & L a/c		
Total			Total		

Format of Abnormal gain a/c

Particulars	Units	Rs.	Particulars	Units	Rs.
To Normal Loss a/c			By Process a/c (names of different process)		
To costing P&La/c					
Total			Total		

1) To **find the cost per unit** for valuation of units to be trans. to next process and also for abnormal, loss or gain = $\frac{\text{Total process cost} - \text{Salvage value of normal spoilage}}{\text{Total units introduced} - \text{Normal loss in units}}$

2) To **find abnormal loss (or) gain** (all in units):

= Units from previous process + fresh units introduced – Normal loss – units transferred to next process (If the result is positive then abnormal loss. If negative then abnormal gain)

4) **Various statements to be prepared while WIP is given:**

- i) Statement of equivalent production
- ii) Statement of cost
- iii) Statement of apportionment of cost
- iv) Process cost a/c

5) **FIFO Method:** In these method total units transferred to next process includes full opening stock units and the closing stock includes the units introduced during the process. In this method the cost incurred during the process is assumed as to be used

- a) First to complete the units already in process
- b) Then to complete the newly introduced units
- c) For the work done to bring closing inventory to given state of completion

6) **LIFO Method:** Cost incurred in process is used for:

- a) First to complete newly introduced units
- b) Then to complete units already in process in this method closing stock is divided into two:
 - i) Units which represent opening stock but lie at the end of the period
 - ii) Newly introduced units in closing stock.

7) **Average Method:** In this method

- a) No distinction is made between opening stock and newly introduced material.
- b) In finding cost per unit, cost incurred for opening stock is also to be added with current cost.(This addition is not done in LIFO & FIFO method as cost incurred in that process is only taken)

8) **Weighted average method:** This method is only used when varied product in processed through a single process. General procedure is adopted here.

- a) Statement of weighted average production should be prepared. Under this statement output of each product is expressed in terms of points.
- b) Cost of each type of product is computed on basis of Points.

OPERATION COSTING

Service costing is “A cost accounting method concerned with establishing the costs of services rendered”. Service costing is also applied within a manufacturing setting.

The Differences between Product Costing and Service Costing

- There may be very few, if any, materials to worry about
- Overheads will comprise the most significant portion of any costs of which, labour costs may well comprise as much as 70%

No.	Enterprise	Cost per unit
1.	Railways or bus companies	Per passenger-kilometer
2.	Hospital	Per patient/day, per bed/day
3.	Canteen	Meals served , cups of tea
4.	Water supply service	Per 1000 gallons
5.	Boiler House	1000 kg of steam
6.	Goods Transport	Per tonne km, quintal km
7.	Electricity Boards	Per kilowatt – hours
8.	Road maintenance department	Per mile or road maintenance
9.	Bricks	One thousand
10.	Hotel	Per room/day

In this various terms such as **passenger km, quintal km, tonne km**, these are all known as composite units and are **computed in 2 ways**:

- Absolute (weighted average): (e.g.) tones km** - Multiplying total distance by respective load quantity.
- Commercial (simple average): (e.g.) tone Km**– Multiplying total distance by average load quantity

Operating Costing

1) Absolute Tonne Km & Commercial Tonne Km:-

Ex:- A truck starts with a load of 10 tonnes of goods from station p. It unloads 4 tonnes at station Q and rest of the goods at station R. It reaches back directly to station P after getting reloaded with 8 tonnes of goods at station R. The distance between P to Q, Q to R and from R to P is 40 kms, 60 kms and 80 kms respectively.

Compute Question?

ANS: Absolute Tonne Km

$$\begin{aligned} &= 10 \text{ Tonnes} \times 40 \text{ Kms} + 6 \text{ Tonnes} \times 60 \text{ Kms} + 8 \text{ Tonnes} \times 80 \text{ Kms} \\ &= 1400 \text{ Tonnes Km} \end{aligned}$$

$$\begin{aligned} \text{Commercial Tonne Km} &= \text{Average Load} \times \text{Total Km totaled} \\ &= \{(10+6+8) / 3 \text{ Tonnes}\} \times 180 \text{ kms} \\ &= 1440 \text{ Tonnes Km} \end{aligned}$$

Operating cost sheet:-

	Particulars	Total cost	Cost per km
A	<u>Standing charges :-</u> License fees Insurance Premium Road tax Garage rent Driver's wages Attendant-cum-cleaner's wages Salaries and wages of other staff		
	Total		
B	<u>Running charges :-</u> Repairs and maintenance Cost of fuel (diesel, petrol etc.) Lubricants, grease and oil Cost of tires, tubes and other spare parts Depreciation		
	Total		
C	Total charges [(A) + (B)]		

CONTRACT COSTING

Contract costing is “A form of specific order costing; attribution of costs to individual contracts”.

A contract cost is “Aggregated costs of a single contract; usually applies to major long term contracts rather than short term jobs”.

Format:-

Particulars	Rs.	Particulars	Rs.
To Materials		By materials returned	**
a. Purchased directly	**	By Material sold (cost price)	**
b. Issue from site	**		
c. Supplied by contractee	**		
To Wages and salaries	**	By WIP	
To Other direct Expenses	**	Work certified	**
To Sub-contractor fees	**	Work Uncertified	**
To Plant & Machinery (purchase price/Book value)	**	By Materials at site	**
To Indirect expenditure (apportioned share of overheads)	**	By Plant and machinery(WDV)	**
To Notional profit (Surplus)	**		
Total		Total	**

Profit of Incomplete contract:-

1) When % of completion is less than or equal to 25% then full Notional profit is transferred to reserve.

2) When % of completion is above 25% but less than 50% following amount should be credited to profit & loss a/c = $\frac{1}{3} \times \text{Notional Profit} \times \{\text{Cash received} / \text{Work certified}\}$

3) When % of completion is more than or equal to 50% then the amount transferred to profit is =

$\frac{2}{3} \times \text{Notional Profit} \times \{\text{Cash received} / \text{Work certified}\}$

[Balance is transferred to reserve a/c]

% of completion = $\{\text{Work certified} / \text{Contract price}\} \times 100$

4) When the contract is almost complete the amount credited to profit & loss a/c is

- a) Estimated total profit * {Work certified / Contract price}
- b) Estimated total profit * {Cash received / Contract price}
- c) Estimated total profit * {Cost of work done / Estimated total profit}
- d) Estimated total profit*{Cost of work done*Cash received
Estimated total cost * Work certified}

5) Work-In-Progress is shown in Balance Sheet as follows:-

EXTRACT OF BALANCE SHEET

Liabilities	(RS)	Asset	(Rs)
Profit & loss a/c (will include) Profit on contract (Specify the contract number) Less : Loss on contract (Specify the contract number) Sundry creditors (will include) Wages accrued Direct expenses accrued Any other expenses (Specify)		Work-in-progress Value or work certified Cost of work uncertified Less :- Reserve for unrealized profit Less :- Amount received from contractee	

MARGINAL COSTING

Statement of profit:-

Particulars	Amount
Sales	***
Less:- Variable cost	***
Contribution	***
Less:- Fixed cost	***
Profit	***

- 1) Sales = Total cost + Profit = Variable cost + Fixed cost + Profit
- 2) Total Cost = Variable cost + Fixed cost
- 3) Variable cost = It changes directly in proportion with volume
- 4) Variable cost Ratio = { Variable cost / Sales } * 100
- 5) Sales – Variable cost = Fixed cost + Profit
- 6) Contribution = Sales * P/V Ratio
- 7) Profit Volume Ratio [P/V Ratio]:-
 - { Contribution / Sales } * 100
 - { Contribution per unit / Sales per unit } * 100
 - { Change in profit / Change in sales } * 100
 - { Change in contribution / Change in sales } * 100
- 8) Break Even Point [BEP]:-
 - Fixed cost / Contribution per unit [in units]
 - Fixed cost / P/V Ratio [in value] (or) $\frac{\text{Fixed Cost} * \text{Sales value per unit}}{(\text{Sales} - \text{Variable cost per unit})}$
- 9) Margin of safety [MOP]
 - Actual sales – Break even sales
 - Net profit / P/V Ratio
 - Profit / Contribution per unit [In units]
- 10) Sales unit at Desired profit = { Fixed cost + Desired profit } / Cont. per unit
- 11) Sales value for Desired Profit = { Fixed cost + Desired profit } / P/V Ratio
- 12) At BEP Contribution = Fixed cost

$$13) \text{ Variable cost Ratio} = \frac{\text{Change in total cost}}{\text{Change in total sales}} * 100$$

14) Indifference Point = Point at which two Product sales result in same amount of profit

$$= \frac{\text{Change in fixed cost}}{\text{Change in variable cost per unit}} \quad (\text{in units})$$

$$= \frac{\text{Change in fixed cost}}{\text{Change in contribution per unit}} \quad (\text{in units})$$

$$= \frac{\text{Change in Fixed cost}}{\text{Change in P/Ratio}} \quad (\text{in Rs.})$$

$$= \frac{\text{Change in Fixed cost}}{\text{Change in Variable cost ratio}} \quad (\text{in Rs.})$$

15) Shut down point = Point at which each of division or product can be closed

$$= \frac{\text{Maximum (or) Specific (or) Available fixed cost}}{\text{P/V Ratio (or) Contribution per unit}}$$

If sales are less than shut down point then that product is to shut down.

Note:-

1) When comparison of profitability of two products if P/V Ratio of one product is greater than P/V Ratio of other Product then it is more profitable.

2) In case of Indifference point if Sales > Indifference point --- Select option with higher fixed cost (or) select option with lower fixed cost.

Reconciliation:-

Reconciliation statement is prepared to reconcile the actual profit with the budgeted profit

Particulars	Favorable	Unfavorable	(Rs)
Budgeted Profit :			
Add Favorable variances			
Less Unfavorable variances			
Sales Variances : Sales price variance Sales mix variance Sales quantity variance			
Cost variance :-			
Material : Cost variance Usage variance Mix variance			
Labour : Rate variance Mix variance Efficiency variance Idle time variance			
Fixed overhead variance : Expenditure variance Efficiency variance			
Fixed overhead variance : Expenditure variance Efficiency variance Capacity variance Calendar variance			

Partial Plan Vs Single Plan:-

Partial Plan	Single Plan
Material price variance is computed at the point of CONSUMPTION	Material price variance is computed at the point of PURCHASE
Stocks are valued at ACTUAL COST	Stocks are valued at STANDARD COST
FIFO, LIFO etc does matter	FIFO, LIFO etc does not matter

****** By default ICAI Follows Partial Plan ******

Budgetary Control

Budget Ratios:-

1) **Capacity usage Ratio**
= $\frac{\text{Budgeted Hours}}{\text{Maximum possible working hours in budget period}} \times 100$

2) **Standard Capacity Employed Ratio**
= $\frac{\text{Actual Hours Worked}}{\text{Budgeted Hrs.}} \times 100$

3) **Level of Activity Ratio**
= $\frac{\text{Standard Hours for Actual Production}}{\text{Standard Hours for Budgeted Production}} \times 100$

4) **Efficiency Ratio**
= $\frac{\text{Standard Hours for Actual Production}}{\text{Actual Hours}} \times 100$

5) **Calendar Ratio**
= $\frac{\text{Actual Working days}}{\text{Budgeted working days}} \times 100$