

## BASIC CONCEPTS

### BASIC CONCEPTS OF FORMULAE

#### BASIC CONCEPTS

##### Classification of Costs

##### 1. Nature of Element

- 1.1 **Material:** Cost of Material used in production
- 1.2 **Labour:** Cost of Workers
- 1.3 **Expenses:** Costs other than Material and Labour

##### 2. Traceability to Object

- 2.1 **Direct Costs:** Which can be allocated directly to the product
- 2.2 **Indirect Costs:** Which cannot be directly allocated to the product

##### 3. Functions

- 3.1 **Production Costs** Cost of whole process of Production
- 3.2 **Selling Costs:** Cost for creating demand of the product produced
- 3.3 **Distribution Costs:** Costs starting from packing of the product till reconditioning of empty products
- 3.4 **Administrative Costs:** Cost of formulating policy, controlling the organisation, costs not directly related to production
- 3.5 **Development Costs:** Development Costs for trial Run
- 3.6 **Pre- Production Costs:** Costs starting with implementation of decisions and ending with the commencement of the production process
- 3.7 **Conversion Costs:** Cost of transforming direct material into Finished Products
- 3.8 **Product Costs:** Costs necessary for production

##### 4. Variability

- 4.1 **Fixed Costs:** Cost which remains constant in total
- 4.2 **Variable Costs:** Costs which changes with production

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## Cost Accounting

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4.3 **Semi- Variable Costs:** Costs which are partly fixed and partly variable

### 5. Controllability

5.1 **Controllable Costs:** Costs which can be influenced by the action of a specific member of an undertaking

5.2 **Uncontrollable Costs:** Costs which can not be influenced by the action of a specific member.

### 6. Normality

6.1 **Normal Costs:** Costs which are expected to be incurred in normal routine

6.2 **Abnormal Costs:** Costs which are over and above normal costs

### 7. Decision Making

7.1 **Relevant Costs (Marginal Costs, Differential Costs, Opportunity Costs, Out of Pocket):** Costs which are relevant and useful for decision making

7.2 **Irrelevant Costs (Sunk costs, Committed costs, Fixed costs):** Costs which are not relevant or useful to decision making

### 8. Cash Outflow

8.1 **Explicit Costs:** Costs involving immediate payment of cash

8.2 **Implicit Costs:** Costs not involving immediate cash payment

### Types of Costing

1. **Uniform Costing:** Standardised principles and practices of costing are used by a number of different industries.
2. **Marginal Costing:** Only Variable Costs or costs directly linked are charged to the product or process
3. **Standard Costing:** Standard Costs are compared with actual costs, to determine variances
4. **Historical Costing:** Where costs are recorded after they have incurred
5. **Direct Costing:** Direct Costs are charged to the product or process, Indirect Costs are charged to the profit from the product or process.
6. **Absorption Costing:** All costs (variable and Fixed) are charged to the product or process

### Methods of Costing

1. **Job costing;** Where all costs can be directly charged to a specific job
2. **Batch Costing:** Where all costs can be directly charged to a group of products

## Basic Concepts

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(batch)

3. **Contract Costing:** Similar to Job costing, but in this case the job is larger than job costing.
4. **Single or Output Costing:** Cost ascertainment for a single product.
5. **Process Costing:** The cost of production at each stage is ascertained separately
6. **Operating Costing :** Ascertainment of Costs in cases where services are rendered
7. **Multiple Costing:** Combination of two or more methods of costing, used where the nature of the product is complex and method cannot be ascertained



## MATERIALS

### BASIC CONCEPTS AND FORMULAE

#### Basic Concepts

1. **Maximum Level:** It indicates the maximum figure of inventory quantity held in stock at any time.
2. **Minimum Level:** It indicates the lowest figure of inventory balance, which must be maintained in hand at all times, so that there is no stoppage of production due to non-availability of inventory.
3. **Re-order level:** This level lies between minimum and the maximum levels in such a way that before the material ordered is received into the stores, there is sufficient quantity on hand to cover both normal and abnormal consumption situations.
4. **Danger level:** It is the level at which normal issues of the raw material inventory are stopped and emergency issues are only made.
5. **ABC Analysis:** It is a system of inventory control. It exercises discriminating control over different items of stores classified on the basis of the investment involved. Items are classified into the following categories:
  - A Category: Quantity less than 10 % but value more than 70 %
  - B Category; Quantiy less than 20 % but value about 20 %
  - C Category: Quantity about 70 % but value less than 10%
6. **Two bin system:** Under this system each bin is divided into two parts - one, smaller part, should stock the quantity equal to the minimum stock or even the re-ordering level, and the other to keep the remaining quantity. Issues are made out of the larger part; but as soon as it becomes necessary to use quantity out of the smaller part of the bin, fresh order is placed.
7. **System of budgets:** The exact quantity of various types of inventories and the time when they would be required can be known by studying carefully production plans and production schedules. Based on this, inventories requirement budget can be prepared. Such a budget will discourage the unnecessary investment in inventories.
8. **Perpetual inventory:** Perpetual inventory represents a system of records maintained by the stores department. It in fact comprises: (i) Bin Cards, and (ii) Stores Ledger.

## Cost Accounting

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9. **Continuous stock verification:** Continuous stock taking means the physical checking of those records (which are maintained under perpetual inventory) with actual stock.
10. **Economic Order Quantity (EOQ):** It is the calculation of optimum level quantity which minimizes the total cost of Ordering and Delivery Cost and Carrying Cost.
11. **Review of slow and non-moving items:** Disposing of as early as possible slow moving items, in return with items needed for production to avoid unnecessary blockage of resources.
12. **Input output ratio :** Inventory control can also be exercised by the use of input output ratio analysis. Input-output ratio is the ratio of the quantity of input of material to production and the standard material content of the actual output.
13. **Inventory turnover ratio:** Computation of inventory turnover ratios for different items of material and comparison of the turnover rates provides a useful guidance for measuring inventory performance. High inventory turnover ratio indicates that the material in the question is a fast moving one. A low turnover ratio indicates over-investment and locking up of the working capital in inventories
14. **Valuation of Material Issues:** Several methods of pricing material issues have been evolved which are as follows:
  - a) **First-in First-out method:** The materials received first are to be issued first when material requisition is received. Materials left as closing stock will be at the price of latest purchases.
  - b) **Last-in First-out method:** The materials purchased last are to be issued first when material requisition is received. Closing stock is valued at the oldest stock price.
  - c) **Simple Average Method:**

$$\text{Material Issue Price} = \frac{\text{Total of unit price of each purchase}}{\text{Total Nos of Purchases}}$$
  - d) **Weighted Average Price Method:** This method gives due weightage to quantities purchased and the purchase price to determine the issue price.
 
$$\text{Weighted Average Price} = \frac{\text{Total Cost of Materials received}}{\text{Total Quantity purchased}}$$
15. **Various Material Losses**
  - a) **Wastage:** Portion of basic raw material lost in processing having no recoverable value
  - b) **Scrap:** The incidental material residue coming out of certain manufacturing operations having low recoverable value.

c) **Spoilage:** Goods damaged beyond rectification to be sold without further processing.

d) **Defectives:** Goods which can be rectified and turned out as good units by the application of additional labour or other services.

### Basic Formulas

1. Maximum Level = Reorder Level + Reordering Quantity – Minimum Consumption during the period required to obtain delivery.  
Or  
$$RL + RQ - MnC$$
Or  
Safety Stock + EOQ
2. Minimum Level = Reorder Level – (Normal usage per period × Average delivery time)
3. Average Stock Level = 
$$\frac{\text{Maximum Level} + \text{Minimum Level}}{2}$$
  
Minimum Level +  $\frac{1}{2}$  Reorder Quantity
4. Reorder Level = Maximum Reorder period × Maximum Usage  
= Normal Usage × (Minimum Stock Period + Average Delivery Time)  
= Safety Stock + Lead Time Consumption
5. Danger Level = Minimum Consumption × Emergency Delivery Time
6. 
$$EOQ = \sqrt{\frac{2 \times \text{Annual Consumption} \times \text{Buying cost per order}}{\text{Cost of carrying one unit of inventory for one year}}}$$
7. Ordering Cost = 
$$\frac{\text{Annual usage} \times \text{Fixed Cost per Order}}{\text{Quantity Ordered}}$$
8. Carrying Cost = 
$$\frac{\text{Quantity ordered}}{2} \times \text{Purchase Price for Inventory} \times \text{Carrying Cost expressed as \% of average inventory}$$
9. Inventory Turnover Ratio = 
$$\frac{\text{Material Consumed}}{\text{Average Inventory}}$$
10. Inventory Turnover Period =  $365 \div \text{Inventory Turnover Ratio}$

## Cost Accounting

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11. To decide whether discount on purchase of material should be availed or not, compare total inventory cost before discount and after discount. Total inventory cost will include ordering cost, carrying cost and purchase cost.

12. Safety Stock =  $\frac{\text{Annual Demand}}{365} \times (\text{Max. lead time} - \text{Normal / Average lead time})$

13. Total Inventory Cost = Ordering Cost + Carrying Cost + Purchase Cost

**Note:** For calculation of total inventory carrying cost, average inventory should be taken as half of EOQ. Average inventory cost is normally given as a percentage of cost per unit



### BASIC CONCEPTS AND FORMULAE

#### Basic Concepts

1. **Labour Cost:** Cost incurred for hiring of human resource of employees
2. **Direct Labour:** Any Labour Cost that is specifically incurred for or can be readily charged to or identified with a specific job, contract, work order or any other unit of cost.
3. **Idle Time:** The time for which the employer pays but obtains no direct benefit or for no productive purpose.
4. **Normal Idle Time:** Time which can not be avoided or reduced in the normal course of business. The cost of normal idle time should be charged to the cost of production.
5. **Abnormal Idle Time:** It arises on account of abnormal causes and should be charged to Costing Profit and Loss account.
6. **Time Keeping:** It refers to correct recording of the employee's attendance time
7. **Time Booking:** It is basically recording the details of work done and the time spent by workers on each job or process.
8. **Overtime:** Payment to workers, when a worker works beyond the normal working hours. Usually overtime has to be paid at double the rate of normal hours.
9. **Overtime Premium:** It's the amount of extra payment paid to a worker under overtime.
10. **Labour Turnover:** It is the rate of change in labour force during a specified period due to resignation, retirement and retrenchment. If the labour turnover is high, it's a sign of instability and may affect the profitability of the firm.
11. **Incentives:** It is the simulation for effort and effectiveness by offering monetary inducement or enhanced facilities.
12. **Time Rate System:** The amount of wages due to a worker is arrived at by multiplying the time worked by the appropriate time rate.
13. **Differential Time Rate:** Different hourly rates are fixed for different levels of efficiency. Upto a certain level a fixed rate is paid and based on the efficiency level the hourly rate increases gradually.



## Cost Accounting

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- 14. Straight Piece Work:** Payment is made on the basis of a fixed amount per unit of output irrespective of time taken. It is the number of units produced by the worker multiplied by rate per unit.
- 15. Differential Piece Rate:** For different level of output below and above the standard, different piece rates are applicable.
- 16. Wage Abstract:** A summary giving details of wages to be charged to individual jobs, workorders or processes for a specific period.

### Basic Formulas

The formulas for different wage payment and incentive systems are given below:

1 **Time Rate System**

Earnings = Hours worked × Rate per hour

2 **Straight Piece Rate System**

Earnings = Number of units × Piece rate per unit

3 **Differential piece Rate System**

3.1 **F.W. Taylor's System**

Efficiency	Payment
Less than 100%	83% of the normal piece rate or 80% of piece rate when below standard
Either 100% or more than 100%	125% of the normal piece rate or 120% of piece rate when at or above standard

3.2 **Merrick Differential Piece Rate System**

Efficiency	Payment
Up to 83 %	Ordinary piece rate
83% to 100%	110% of ordinary piece rate (10% above the ordinary piece rate)
Above 100%	120% or 130% of ordinary piece rate (20% to 30% of ordinary piece rate)

4 **Combination of Time and Piece Rate**

4.1 **Gantt Task and Bonus System**

Output	Payment
Output below standard	Guaranteed time rate
Output at standard	120% of time rate
Output above standard	120% of piece rate

#### 4.2 Emerson Efficiency System

Earning is calculated as follows :

Efficiency	Payment
Below 66-2/3%	No bonus, only guaranteed time rate is paid.
66-2/3% to 100%	Worker is paid by hourly rate for the time he actually worked plus in increase in bonus according to degree of efficiency on the basis of step bonus rates. Bonus rate can be up to 20%.
Above 100%	120% of time wage rate plus additional bonus of 1% for each 1% increase in efficiency.

#### 4.3 Bedaux Pont System

$$\text{Earnings} = \text{Hours worked} \times \text{Rate per hour} + \left( \frac{75}{100} \times \frac{\text{Bedaux pointssaved}}{60} \times \text{Rate per hour} \right)$$

#### 4.4 Haynes Manit Systems

This system is similar to Bedaux Point system. Instead of Bedaux points saved, 'MANIT' (Man-minutes) saved are measured for payment of bonus. Bonus is distributed as follows :

- 50% bonus to the workers
- 10% bonus to the supervisors
- 40% bonus to the employer

#### 4.5 Accelerated Premium System

In this system individual employer makes his own formula. The following formula may be used for a general idea of the scheme:

$$Y = 0.8 \times x^2$$

Where

y= wages

x= efficiency

### 5 Premium Bonus Plan

#### 5.1 Halsey Premium Plan

$$\text{Earnings} = \text{Hours worked} \times \text{Rate per hour} +$$

#### 5.2 Halsey-Weir Premium Plan

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$$\text{Earnings} = \text{Hours worked} \times \text{Rate per hour} + \left( \frac{30}{100} \times \text{Time saved} \times \text{Rate per hour} \right)$$

### 5.3 Rowan System

$$\text{Earnings} = \text{Hours worked} \times \text{Rate per hour} + \left( \frac{\text{Time saved}}{\text{Time allowed}} \times \text{Hours worked} \times \text{Rate per hour} \right)$$

### 5.4 Barth Sharing Plan

$$\text{Earnings} = \text{Rate per hour} \times \sqrt{\text{Standard hours} \times \text{Hours worked}}$$

### 5.5 Scanlon Plan

$$\text{Bonus Percentage} = \frac{\text{Average Annual Salaries and Wages}}{\text{Average Annual Sales Revenue}}$$

## 6 LABOUR TURNOVER RATE

$$6.1. \text{Separation Method} = \frac{\text{Number of separations during the period}}{\text{Average number of workers during the same period}} \times 100$$

$$6.2. \text{Replacement Method} = \frac{\text{Number of workers replace in a period}}{\text{Average number of workers during the same period}} \times 100$$

$$6.3. \text{Flux Method} = \frac{\text{No. of separations} + \text{No. of replacements}}{\text{Average number of workers during the same period}} \times 100$$



# OVERHEADS

## BASIC CONCEPTS AND FORMULAE

### Basic Concepts

1. **Overheads:** Overheads represent expenses that have been incurred in providing certain ancillary facilities or services which facilitate or make possible the carrying out of the production process; by themselves these services are not of any use.
2. **Types of the Overheads on the basis of function:**
  - *Factory or Manufacturing Overheads*
  - *Office and Administration Overheads*
  - *Selling and Distribution Overheads*
  - *Research and Development Overheads*
3. **Types of the Overheads on the basis of nature:**
  - *Fixed Overhead-* Expenses that are not affected by any variation in the volume of activity.
  - *Variable-* Expenses that change in proportion to the change in the volume of activity.
  - *Semi variable-* The expenses that do not change when there is a small change in the level of activity but change whenever there is a slightly big change or change in the same direction as change in the level of activity but not in the same proportion.
4. **Cost allocation-** The term 'allocation' refers to assignment or allotment of an entire item of cost to a particular cost center or cost unit.
5. **Cost apportionment-** Apportionment implies the allotment of proportions of items of cost to cost centres or departments.
6. **Re-apportionment-** The process of assigning service department overheads to production departments is called reassignment or re-apportionment.
7. **Absorption-** The process of recovering overheads of a department or any other cost center from its output is called recovery or absorption.

## Cost Accounting

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### 8. Methods used for re-apportionment of service department expenses over the production departments:

- *Direct re-distribution method*- Under this method service department costs are apportioned over the production departments only, ignoring the services rendered by one service department to the other.
- *Step Method or Non-reciprocal method*- This method gives cognizance to the service rendered by service department to another service department. The sequence here begins with the department that renders service to the maximum number of other service departments.
- *Reciprocal Service Method*- These methods are used when different service departments render services to each other, in addition to rendering services to production departments. In such cases various service departments have to share overheads of each other. The methods available for dealing with reciprocal services are
  - (a) Simultaneous equation method;
  - (b) Repeated distribution method;
  - (c) Trial and error method.

### 9. Methods for the Computation of the Overheads Rate :

- a) **Percentage of direct materials method**: Under this method, the cost of direct material consumed is the base for calculating the amount of overhead absorbed.
- b) **Percentage of prime cost method** This method is based on the fact that both materials as well as labour contribute in raising factory overheads. Hence, the total of the two i.e. Prime cost should be taken as base for absorbing the factory overhead.
- c) **Percentage of direct labour cost** : This method also fails to give full recognition to the element of the time which is of prime importance in the accounting for and treatment of manufacturing overhead expenses except in so far as the amount of wages is a product of the rate factor multiplied by the time factor.
- d) **Labour hour rate Method**: This method is an improvement on the percentage of direct wage basis, as it fully recognises the significance of the element of time in the incurring and absorption of manufacturing overhead expenses.
- e) **Machine hour rate method**: By the machine hour rate method, manufacturing overhead expenses are charged to production on the basis of number of hours machines are used on jobs or work orders.

**10. Types of Overhead Rates**

- a) **Normal rate:** This rate is calculated by dividing the actual overheads by actual base. It is also known as actual rate.
- b) **Pre-determined overhead rate:** This rate is determined in advance by estimating the amount of the overhead for the period in which it is to be used.
- c) **Blanket overhead rates-** Blanket overhead rate refers to the computation of one single overhead rate for the whole factory. It is to be distinguished from the departmental overhead rate which refers to a separator
- d) **Departmental overhead rate:** Where the product lines are varied or machinery is used to a varying degree in the different departments, that is, where conditions throughout the factory are not uniform, the use of departmental rates is to be preferred. ate for each individual cost centre or department.

**11. Methods of accounting of administrative overheads**

- Apportioning Administrative Overheads between Production and Sales Departments.
- Charging to Costing Profit and Loss Account.
- Treating Administrative Overheads as a separate addition to Cost of Production/Sales
- The basis which are generally used for apportionment are :
  - (i) Works cost
  - (ii) Sales value or quantity
  - (iii) Gross profit on sales
  - (iv) Quantity produced
  - (v) Conversion cost, etc.

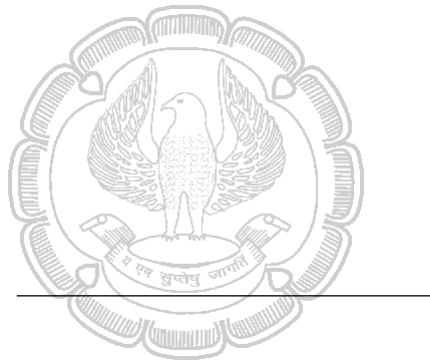
**Basic Formulas**

1. Overhead Absorption Rate or Overhead Recovery Rate =  $\frac{\text{Amount of overhead incurred}}{\text{Basis for absorption}}$
2. Predetermined Overhead Rate =  $\frac{\text{Budgeted overhead for the period}}{\text{Budgeted basis for the period}}$

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3. **Blanket Overhead Rate =**  
$$\frac{\text{Overhead cost for the entire factory for the period}}{\text{Base for the period (Total labour hours, total machine hours, etc.)}}$$
4. **Multiple Overhead Rate =** 
$$\frac{\text{Overhead allocated / apportioned to each Deptt.}}{\text{Corresponding base}}$$
5. **Variable portion in Semi-variable Overhead =** 
$$\frac{\text{Change in amount of expense}}{\text{Change in activity or quantity}}$$
6. Direct cost of service departments should be apportioned to production departments, as it is also indirect cost for production departments.



## NON-INTEGRATED ACCOUNTS

### BASIC CONCEPTS AND FORMULAE

#### Basic Concepts

1. **Cost Control Accounts:** These are accounts maintained for the purpose of exercising control over the costing ledgers and also to complete the double entry in cost accounts.
2. **Integral System of Accounting:** A system of accounting where both costing and financial transactions are recorded in the same set of books.
3. **Non- Integral System of Accounting:** A system of accounting where two sets of books are maintained- (i) for costing transactions; and (ii) for financial transactions
4. **Reconciliation:** In the Non-Integral System of Accounting, since the cost and financial accounts are kept separately, it is imperative that those should be reconciled, otherwise the cost accounts would not be reliable. The reason for differences in the cost & financial accounts can be of purely financial nature( Income and expenses) and notional nature

#### Basic Formula

1. **Format of Reconciliation Statement**

#### RECONCILIATION STATEMENT

(When Profit as per Cost Accounts is taken as a starting point)

Particulars	Rs.
A. Profit as per Cost Accounts	.....
B. Add. Items having the effect of higher profit in financial accounts:	
(a) Over-absorption of Factory Overhead/Office & Adm. Overheads / Selling & Distribution Overheads in Cost Accounts	.....
(b) Over-valuation of Opening Stock of Raw Material / work-in-progress / Finished goods in Cost Accounts	.....



## Cost Accounting

(c)	Under-valuation of Closing Stock of Raw Material / Work-in-progress / Finished Goods in Cost Accounts	.....	
(d)	Incomes excluded from Cost Accounts : (e.g.) Interest & Dividend on Investments	.....	
	Rent received	.....	
	Transfer Fees received	.....	.....
C.	Less: Items having the effect of lower profit in financial accounts:		
(a)	Under-absorption of Factory Overhead/Office & Adm. Overheads / Selling & Distribution Overheads in Cost Accounts	.....	
(b)	Under-valuation of Opening Stock of Raw Material / work-in-progress / Finished goods in Cost Accounts	.....	
(c)	Over-valuation of Closing Stock of Raw Material / Work-in-progress / Finished Goods in Cost Accounts	.....	
(d)	Expenses excluded from Cost Accounts : (e.g.) Bad Debts written off	.....	
	Preliminary Expenses / Discount on Issue written off	.....	
	Legal Charges	.....	(.....)
D.	Profit as per Financial Accounts (A + B – C)		.....

**Note:** In case of 'Loss', the amount shall appear as a minus item.

**Note:** When profit as per cost account is calculated from profit as per financial accounts, then items which are added above will be deducted and vice-versa.

## JOB COSTING & BATCH COSTING

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### BASIC CONCEPTS AND FORMULAE

#### Basic Concepts

1. **Job Costing** : According to this method costs are collected and accumulated according to jobs, contracts, products or work orders. Each job or unit of production is treated as a separate entity for the purpose of costing. Job costing is carried out for the purpose of ascertaining cost of each job and takes into account the cost of materials, labour and overhead etc

#### Meaning of spoiled and defective work under job costing:-

Spoiled :- Produced units can not be rectified.

Defective:- Units can be rectified with some additional cost.

2. **Batch Costing**: This is a form of job costing. Under job costing, executed job is used as a cost unit, whereas under batch costing, a lot of similar units which comprises the batch may be used as a cost unit for ascertaining cost. In the case of batch costing separate cost sheets are maintained for each batch of products by assigning a batch number.
3. **Economic Batch Quantity**: There is one particular batch size for which both set up and carrying costs are minimum. This size is known as economic or optimum batch quantity.

## CONTRACT COSTING

### BASIC CONCEPTS AND FORMULAE

#### Basic Concepts

1. **Contract costing:-** Contract or terminal costing, as it is termed, is one form of application of the principles of job costing. In fact a bigger job is referred to as a contract. Contract costing is usually adopted by building contractors engaged in the task of executing Civil Contracts.
2. **Sub-Contract :** Sub-contract costs are also debited to the Contract Account.
3. **Extra work :** The extra work amount payable by the contractee should be added to the contract price. If extra work is *substantial*, it is better to treat it as a separate contract. If it is *not substantial*, expenses incurred should be debited to the contract account as “Cost of Extra work”.
4. **Cost of work certified :** All building contractors received payments periodically known as “running payment” on the basis of the architect’s or surveyor’s certificates. But payments are not equal to the value of the work certified, a small percentage of the amount due is retained as security for any defective work which may be discovered later within the guarantee period.
5. **Work uncertified :** It represents the cost of the work which has been carried out by the contractor but has not been certified by the contractee’s architect. It is always shown at cost price.
6. **Retention money :** A contractor does not receive full payment of the work certified by the surveyor. Contractee retains some amount (say 10% to 20%) to be paid, after sometime, when it is ensured that there is no fault in the work carried out by contractor.
7. **Work-in-progress:** In Contract Accounts, the value of the work-in-progress consists of (i) the cost of work completed, both certified and uncertified; (ii) the cost of work not yet completed; and (iii) the amount of profit taken as credit. In the Balance Sheet, the work-in-progress is usually shown under two heads, viz., certified and uncertified.
8. **Notional profit :** It represents the difference between the value of work certified and cost of work certified.

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9. **Estimated profit** : It is the excess of the contract price over the estimated total cost of the contract.
10. **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.
14. **Operating Costing**: It is a method of ascertaining costs of providing or operating a service. This method of costing is applied by those undertakings which provide services rather than production of commodities.
15. **Multiple Costing**: It refers to the method of costing followed by a business wherein a large variety of articles are produced, each differing from the other both in regard to material required and process of manufacture. In such cases, cost of each article is computed separately by using, generally, two or more methods of costing.

### Basic Formulas

1. When work on contract has not reasonably advanced, no profit is taken into account. In practice, no profit is calculated when work certified is less than  $\frac{1}{4}$ <sup>th</sup> but less than  $\frac{1}{2}$  of the contract price.
2. When work certified is more than  $\frac{1}{4}$ <sup>th</sup> but less than  $\frac{1}{2}$  of the contract price, following formula is used to determine the figures of profit to be credited to profit and loss account:

$$\frac{1}{3} \times \text{Notional profit} \times \frac{\text{Cash received}}{\text{Work certified}}$$

3. When work certified is more than  $\frac{1}{2}$  of the contract price, but it is still not in the final stage, following formula is used to determine the figure of profit to be credited to profit and loss account:

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

4. When the contract is almost complete, an estimate total profit is determined by deducting aggregate of cost to date and estimated additional expenditure from contract price. A portion of this estimated total profit is credited to profit and loss account. The figure to be credited to profit and loss account is ascertained by adopting any of the following formulae:

$$4.1 \quad \text{Estimated total profit} \times \frac{\text{Work certified}}{\text{Contract price}}$$

$$4.2 \quad \text{Estimated total profit} \times \frac{\text{Cash received}}{\text{Contract price}}$$

$$4.3 \text{ Estimated total profit} \times \frac{\text{Cash of Work to date}}{\text{Estimated total cost}}$$

$$4.4 \text{ Estimated total profit} \times \frac{\text{Cost of Work to date}}{\text{Estimated total cost}} \times \frac{\text{Cash received}}{\text{Work certified}}$$

5. **Profits on incomplete contracts**

“.... The overriding principle being that there can be no attributable profit until the outcome of a contract can reasonably be foreseen. Of the profit which in the light of all the circumstances can be foreseen with a reasonable degree of certainty to arise on completion of the contract there should be regarded as earned to date only that part which prudently reflects the amount of work performed to date. The method used for taking up such profits needs to be consistently applied.”

6. The computation of escalation claim is based on wording of escalation clause. Normally it is calculated on stipulated quantity of material and labour hours based on price and rate differential.

7. **Work certified and consequent payment:**

Work certified and consequent payment may be dealt with in the following manner:

7.1 The amount of work certified can be debited to contractee's account. On receipt of money from contractee, his personal account will be credited and cash or bank account, as the cause may be will be debited.

At the time of balance sheet preparation, Contractee's Account will be shown on the 'Assets side' as debtors.

7.3 Under the second method (it is more common than the first, students are advised to follow this method only) the amount of work certified is debited to work-in-progress account and credited to contract account. The work-in-progress should be shown on the assets side after deduction of cash received. Next year work-in-progress account will be debited to contract account.

## OPERATING COSTING

### BASIC CONCEPTS AND FORMULAE

#### Basic Concepts

1. **Operating Costing:** It is a method of ascertaining costs of providing or operating a service. This method of costing is applied by those undertakings which provide services rather than production of commodities.
2. **Cost units:**

Transport service	–	Passenger km., quintal km., or tonne km.
Supply service	–	Kw hr., Cubic metre, per kg., per litre.
Hospital	–	Patient per day, room per day or per bed, per operation etc.
Canteen	–	Per item, per meal etc.
Cinema	–	Per ticket.

Composite units i.e. tonnes kms., quintal kms. etc. may be computed in two ways.
- 3.. **Multiple Costing:** It refers to the method of costing followed by a business wherein a large variety of articles are produced, each differing from the other both in regard to material required and process of manufacture. In such cases, cost of each article is computed separately by using, generally, two or more methods of costing.

#### Basic Formulas

1. **Absolute (weighted average) tonnes-kms:**  
Absolute tonnes-kms., are the sum total of tonnes-kms., arrived at by multiplying various distances by respective load quantities carried.
2. **Commercial (simple average) tonnes-kms :**  
Commercial tonnes-kms., are arrived at by multiplying total distance kms., by average load quantity.

## PROCESS & OPERATION COSTING

### BASIC CONCEPTS AND FORMULAE

#### Basic Concepts

1. **Process Costing:-** Used in industries where the material has to pass through two or more processes for being converted into a final product.
2. **Operation Costing:-** It is the refinement of process costing. It is concerned with the determination of the cost of each operation rather than the process.

#### Treatment of Losses in process costing:-

- (i) **Normal process loss** - The cost of normal process loss is absorbed by good units produced under the process. The amount realised by the sale of normal process loss units should be credited to the process account.
- (ii) **Abnormal process loss** - The total cost of abnormal process loss is credited to the process account from which it arise. the total cost of abnormal process loss is debited to costing profit and loss account.
- (iii) **Abnormal gain**- The process account under which abnormal gain arises is debited with the abnormal gain and credited to Abnormal gain account which will be closed by transferring to the Costing Profit and loss account.

#### 3. Equivalent production units:

This concept use in the industries where manufacturing is a continuous activity. Converting partly finished units into equivalent finished units.

4. **Equivalent production means** converting the incomplete production units into their equivalent completed units.

$$\text{Equivalent completed units} = \{\text{Actual number of units in the process of manufacture}\} \times \{\text{Percentage of work completed}\}$$

5. **Valuation of work-in-progress** : there are three methods for the valuation of work-in-progress which are as follows:

- (i) First-in-First Out (FIFO) method. Under this method the units completed and transferred include completed units of opening work-in-progress and subsequently introduced units. Proportionate cost to complete the opening work-in-progress and

## Cost Accounting

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that to process the completely processed units during the period are derived separately. The cost of opening work-in-progress is added to the proportionate cost incurred on completing the same to get the complete cost of such units. In this method the closing stock of Work in progress is valued at current cost.

- (ii) Last-in-First Out (LIFO) method. According to this method units lastly entering in the process are the first to be completed. This assumption has a different impact on the costs of the completed units and the closing inventory of work-in-progress. The completed units will be shown at their current cost and the closing inventory of work-in-progress will continue to appear at the cost of the opening inventory of work-in-progress.
- (iii) Average Cost method (or weighted average cost method). Under this method, the cost of opening work-in-progress and cost of the current period are aggregated and the aggregate cost is divided by output in terms of completed units. The equivalent production in this case consists of work-load already contained in opening work-in-process and work-load of current period.

### 6. Inter-Process Profits

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.





# JOINT PRODUCTS & BY PRODUCTS

## BASIC CONCEPTS AND FORMULAE

### Basic Concepts

#### 1. Joint Products and By-Products

- (i) **Joint Products** - Two or more products of equal importance, produced, simultaneously from the same process, with each having a significant relative sale value are known as joint products.
- (ii) **Co-Products** - Two or more products which are contemporary but do not emerge necessarily from the same material in the same process.
- (iii) **By-Products** - "products recovered from material discarded in a main process, or from the production of some major products"

#### 2. Method of apportioning joint cost over joint products:

The commonly used methods for apportioning total process costs upto the point of separation over the joint products are as follows :

- (i) Physical unit method
- (ii) Average unit cost method
- (iii) Survey method
- (iv) Contribution margin method
- (v) Market value method :
  - (a) At the point of separation
  - (b) After further processing
  - (c) Net realisable value.

#### 3. Methods of apportioning joint cost over by-products :

- (a) **Market value or value on realisation**- The realisation on the disposal of the by-product may be deducted from the total cost of production so as to arrive at the cost of the main product.
- (b) **Standard cost in technical estimates**- The standard may be determined by averaging costs 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 the by-product or by adopting some other consistent basis.

## Cost Accounting

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This method may be adopted where the by-product is not saleable in the condition in which it emerges or comparative prices of similar products are not available.

- (c) **Comparative price**- Value of the by-product is ascertained with reference to the price of a similar or an alternative material.
- (d) **Re-use basis**- The value put on the by-product should be same as that of the materials introduced into the process.

### 4. Treatment of By-Product Cost in Cost-Accounting

#### (i) When they are of small total value:

1. The sales value of the by-products may be credited to the Profit and Loss Account and no credit be given in the Cost Accounts. The credit to the Profit and Loss Account here is treated either as miscellaneous income or as additional sales revenue.
2. The sale proceeds of the by-product may be treated as deductions from the total costs. The sale proceeds in fact should be deducted either from the production cost or from the cost of sales.

(ii) **When the by-products are of considerable total value** - The joint costs may be divided over joint products and by-products by using relative market values ; physical output method (at the point of split off) or ultimate selling prices (if sold).

(iii) **Where they require further processing** -The net realisable value of the by-product at the split-off point may be arrived at by subtracting the further processing cost from the realisable value of by-products.

If total sales value of by-products at split-off point is small, it may be treated as per the provisions discussed above under (i).

In the contrary case, the amount realised from the sale of by-products will be considerable and thus it may be treated as discussed under (ii).

## STANDARD COSTING

### BASIC CONCEPTS AND FORMULAE

#### Basic Concepts

1. **Standard Costing** : A technique which uses standards for costs and revenues for the purposes of control through variance analysis.
2. **Standard Price** : A predetermined price fixed on the basis of a specification of a product or service and of all factors affecting that price.
3. **Standard Time** : The total time in which task should be completed at standard performance.
4. **Variance** : A divergence from the predetermined rates, expressed ultimately in money value, generally used in standard costing and budgetary control systems.
5. **Variance Analysis** : The analysis of variances arising in standard costing system into their constituent parts.
6. **Revision Variance** : It is the difference between the original standard cost and the revised standard cost of actual production.
7. **Basic Standard** : A standard fixed for a fairly long period.
8. **Current Standard** : A standard fixed for a short period.
9. **Estimated Cost** : An estimate of what the cost is likely to be during a given period of time.
10. **Ideal Cost** : A cost which should be incurred during a period under ideal conditions.

#### Basic Formulas

##### 1. Material Variance

- 1.1 **Material costs variance** = (Standard quantity x Standard Price) – (Actual quantity x Actual price)

$$MCV = (SQ \times SP) - (AQ \times AP)$$

- 1.2 **Material price variance** = Actual quantity x (Standard price – Actual price)

$$MPV = AQ \times (SP - AP)$$

- 1.3 **Material usage variance** = Standard price (Standard quantity – Actual quantity)

$$MUV = SP \times (SQ - AQ)$$

## Cost Accounting

Check:

**1.4 Material cost variance** = Material usage variance + Material price variance

$$\text{MCV} = \text{MUV} + \text{MPV}$$

Classification of Material Usage Variance

Material usage variance is further sub-divided into:

- i) Material mix variance
- ii) Material yield variance. (Or Material sub-usage variance)

**1.5 Material mix variance** = (Revised standard quantity – Actual quantity) × Standard price

$$\text{MMV} = (\text{RSQ} - \text{AQ}) \times \text{SP}$$

Where

Revised standard quantity =

$$\frac{\text{Standard quantity of one material}}{\text{Total of standard quantities of all materials}} \times \text{Total of actual quantities of all materials}$$

**1.6 Material revised usage variance** = (Standard quantity – Revised standard quantity) × Standard price

$$\text{MRUV} = (\text{SQ} - \text{RSQ}) \times \text{SP}$$

**1.7 Material yield variance** = (Actual yield – Standard yield) × Standard output price

$$\text{MYV} = (\text{AY} - \text{SY}) \times \text{SOP}$$

Check:

**Material usage variance** = Material mix variance + Material yield variance

$$\text{MUV} = \text{MMV} + \text{MYV}$$

Or

**1.8 Material usage variance** = Material mix variance + Material revised usage variance

$$\text{MUV} = \text{MMV} + \text{MRUV}$$

Note: Material revised usage variance is also known as material sub – usage variance.

In each case there will be only one variance either material yield or material revised usage variance.

## 2. Labour Variance

**2.1 Labour Cost variance** = (Std. hours for actual output × Std. rate per hour) – (Actual hours × Actual rate per hour)

$$\text{LCV} = (\text{SH} \times \text{SR}) - (\text{AH} \times \text{AR})$$

**2.2 Labour rate variance** = Actual time (Std. rate – Actual rate)

$$\text{LRV} = \text{AH} \times (\text{SR} - \text{AR})$$

### 11.2

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**2.3 Labour efficiency (or time) variance** = Std. rate (Std. hours for actual output – Actual hours)

$$\text{LEV} = \text{SR} \times (\text{SH} - \text{AH})$$

Check:

**2.4 Labour cost variance** = Labour efficiency variance + Labour rate variance

$$\text{LCV} = \text{LEV} + \text{LRV}$$

Classification of Labour Efficiency Variance

Labour efficiency variance is further divided into the following variances:

- (i) Idle time variance
- (ii) Labour mix variance
- (iii) Labour yield variance (or Labour revised-efficiency variance)

**2.5 Idle time variance** = Idle hours x Standard rate

$$\text{ITV} = \text{IH} \times \text{SR}$$

**2.6 Labour mix variance** = (Revised std. hours – Actual hours) x Standard rate

$$\text{LMV} = (\text{RSH} - \text{AH}) \times \text{SR}$$

**2.7 Labour revised efficiency variance** = (Std. hours for actual output – Revised std. hours) x Standard rate

$$\text{LREV} = (\text{SH} - \text{RSH}) \times \text{SR}$$

**2.8 Labour yield variance** = (Actual yield – Std. yield from actual input) x Std. labour cost per unit of output

$$\text{LYV} = (\text{AY} - \text{SY}) \times \text{SLC}$$

Check:

**Labour efficiency variance** = Idle time variance + Labour mix variance + Labour yield variance (or labour revised efficiency variance)

$$\text{LEV} = \text{ITV} + \text{LMV} + \text{LYV} \text{ (or LREV)}$$

### 3. Overhead Variance

**Basic terms used in the computation of overhead variance**

$$\text{Standard overhead rate (per hour)} = \frac{\text{Budgeted overhead}}{\text{Budgeted hours}}$$

Or

$$\text{Standard overhead rate (per unit)} = \frac{\text{Budgeted Overhead}}{\text{Budgeted output in units}}$$

Note: Separate overhead rates will be computed for fixed and variable overheads.

Basic calculations before the computation of overhead variances:

## Cost Accounting

The following basic calculation should be made before computing variances.

(i) **When overhead rate per hour is used:**

(a) **Standard hours for actual output (SHAO)**

$$\text{SHAO} = \frac{\text{Budgeted hours}}{\text{Budgeted output}} \times \text{Actual output}$$

(b) **Absorbed (or Recovered) overhead** = Std. hours for actual output × Std. overhead rate per hour

(c) **Standard overhead** = Actual hours × Std. overhead rate per hour

(d) **Budgeted overhead** = Budgeted hours × Std. overhead rate per hour

(e) **Actual overhead** = Actual hours × Actual overhead rate per hour

(ii) **When overhead rate per unit is used**

(a) **Standard output for actual hours (SOAH)**

$$\text{SOAH} = \frac{\text{Budgeted output (in units)}}{\text{Budgeted hours}} \times \text{Actual hours}$$

(b) **Absorbed overhead** = Actual output × Std. overhead rate per unit

(c) **Standard overhead** = Std. output for actual time × Std. overhead rate per unit

(d) **Budgeted overhead** = Budgeted output × Std. overhead rate per unit

(e) **Actual overhead** = Actual output × Actual overhead rate per unit

**Overhead cost variance** = Absorbed overhead – Actual overhead

$$\text{OCV} = (\text{Std. hours for actual output} \times \text{Std. overhead rate}) - \text{Actual overhead}$$

Overhead cost variance is divided into two categories:

(i) Variable overhead (VO) variances

(ii) Fixed overhead (FO) variances

### 3.1 Variable Overhead (VO) Variances

$$\begin{aligned} \text{V. O. cost variance} &= (\text{Absorbed variable overhead} - \text{Actual variable overhead}) \\ &= (\text{Std. hours for actual output} \times \text{Std. variable overhead Rate}) \\ &\quad - \text{Actual overhead cost} \end{aligned}$$

This variance is sub-divided into the following two variances:

(a) Variable overhead expenditure variance or spending variance or budget variance

(b) Variable overhead efficiency variance

### 3.2 V. O. expenditure variance = (Standard variable overhead – Actual variable overhead)

$$= (\text{Actual hours} \times \text{Std. variable overhead rate}) - \text{Actual overhead cost}$$

$$3.3 \text{ V.O. efficiency variance} = (\text{Absorbed variable overhead} - \text{Standard variable overhead}) \\ = (\text{Std. hours for actual output} - \text{Actual hours}) \times \text{Std. variable overhead rate}$$

Check:

$$\text{V. O. cost variance} = \text{V.O. expenditure variance} + \text{V. O. efficiency variance}$$

#### Fixed Overhead (FO) Variances

$$3.4 \text{ F.O cost variance} = (\text{Absorbed overhead} - \text{Actual overhead}) \\ = (\text{Std. hours for actual output} \times \text{Std. fixed overhead rate}) - \text{Actual fixed overhead}$$

Fixed overhead cost variance is further divided into the following two variances:

- (a) Fixed overhead expenditure variance
- (b) Fixed overhead volume variance

$$3.5 \text{ F.O. expenditure variance} = (\text{Budgeted fixed overhead} - \text{Actual fixed overhead}) \\ = (\text{Budgeted hours} \times \text{Std. fixed overhead rate}) - \text{Actual fixed overhead}$$

$$3.6 \text{ F.O volume variance} = (\text{Absorbed overhead} - \text{Budgeted overhead}) \\ = (\text{Std. hours for actual output} - \text{Budgeted hours}) \times \text{Std. fixed overhead rate}$$

Check:

$$\text{F.O. cost variance} = \text{F.O. expenditure variance} + \text{F.O. volume variance}$$

Fixed overhead volume variance is further divided into the following variances:

- (a) Efficiency variance
- (b) Capacity variance
- (c) Calendar variance

$$3.7 \text{ Efficiency variance} = (\text{Absorbed fixed overhead} - \text{Standard fixed overhead}) \\ = (\text{Std. hours for actual output} - \text{Actual hours}) \times \text{Std. fixed overhead rate}$$

$$3.8 \text{ Capacity variance} = (\text{Standard fixed overhead} - \text{Budgeted overhead}) \\ = (\text{Actual hours} - \text{Budgeted hours}) \times \text{Std. fixed overhead rate}$$

$$3.9 \text{ Calendar variance} = (\text{Actual No. of working days} - \text{Std. No. of working days}) \times \text{Std. fixed rate per day}$$

$$\text{Or} \quad = (\text{Revised budgeted hours} - \text{Budgeted hours}) \times \text{Std. fixed rate per hour}$$

Where,

$$\text{Revised budgeted hours} = \frac{\text{Budgeted hours} \times \text{Actual days}}{\text{Budgeted days}}$$

Note: When calendar variance is computed, there will be a modification in the capacity variance. In that case revised capacity variance will be calculated and the formula is:

## Cost Accounting

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Revised capacity variance = (Actual hours – Revised budgeted hours) × Std. fixed rate per hour

Check:

F. O. volume variance = Efficiency Variance + Capacity variance + Calendar variance

### 4 Ratio Analyses

$$4.1. \text{ Efficiency Ratio} = \frac{\text{Output expressed in terms of s standard hours}}{\text{Actual hours worked for producing that output}} \times 100$$

$$4.2. \text{ Activity Ratio} = \frac{\text{Actual output in s standard hours}}{\text{Budgeted output in S standard hours}} \times 100$$

Activity Ratio = Capacity Ratio × Efficiency Ratio

$$4.3. \text{ Calendar Ratio} = \frac{\text{Actual number of working days in a period}}{\text{Number of working days in related budget period}} \times 100$$

$$4.4. \text{ Actual Capacity Usage Ratio} = \frac{\text{Actual hours worked}}{\text{Maximum possible hours in a period}} \times 100$$

$$4.5. \text{ Actual Usage of Budgeted Capacity Ratio} = \frac{\text{Actual working hours}}{\text{Budgeted hours}} \times 100$$

$$4.6. \text{ Standard Capacity Usage Ratio} = \frac{\text{Budgeted hours}}{\text{Maximum possible No. of working hours in budget period}} \times 100$$





## MARGINAL COSTING

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### BASIC CONCEPTS AND FORMULAE

#### Basic Concepts

1. **Absorption Costing:** a method of costing by which all direct cost and applicable overheads are charged to products or cost centers for finding out the total cost of production. Absorbed cost includes production cost as well as administrative and other cost.
2. **Break even chart:** A mathematical or graphical representation, showing approximate profit or loss of an enterprise at different levels of activity within a limited range.
3. **Break Even Point:** This is the level of activity there is neither a profit nor a loss.
4. **Cash Break Even Point:** It is the level of activity where there is neither a cash profit nor a cash loss.
5. **Cost Breakeven Point:** It is the level of activity where the total cost under two alternatives are the same. It is also known as Cost indifference point.
6. **Differential Costing:** It is a technique used in the preparation of adhoc information in which only cost and income differences in between alternative courses of action are taken into consideration.
7. **Direct Costing:** This is a principle under which all costs which are directed related are charged to products, processes, operations or services, of which they form an integral part.
8. **Marginal contribution:** This is the difference between selling price and variable cost of production.
9. **Marginal Cost:** This is the variable cost of one unit of product or a service.
10. **Marginal Costing:** It is a principle whereby variable cost are charged to cost units and fixed cost attributable to the relevant period is written off in full against contribution for that period.
11. **Profit Volume Chart:** It is a diagram showing the expected relationship between costs, revenue at various volumes with profit being the residual.
12. **Profit Volume ratio:** It is the ratio establishing the relationship between the contribution and the sales value.
13. **Margin of Safety:** This is the difference between the expected level of sales and the break even sales

## Cost Accounting

### Basic Formulas

1.  $S - V = F + P$

By multiplying and dividing L.H.S. by S

2.  $\frac{S(S - V)}{S} = F + P$

3.  $S \times \text{P/V Ratio} = F + P$  or Contribution ( $\because \text{P/V Ratio} = \frac{S - V}{S}$ )

4.  $**\text{BES} \times \text{P/V Ratio} = F$  ( $\because$  at BEP profit is zero)

5.  $\text{BES} = \frac{F}{\text{P/V Ratio}}$

6.  $\text{P/V Ratio} = \frac{F}{\text{BES}}$

7.  $S \times \text{P/V Ratio} = \text{Contribution}$  (Refer to iii)

8.  $\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}}$

9.  $(\text{BES} + \text{MS}) \times \text{P/V Ratio} = \text{contribution}$  (Total sales = BES + MS)

10.  $(\text{BES} \times \text{P/V Ratio}) + (\text{MS} \times \text{P/V Ratio}) = F + P$

By deducting  $(\text{BES} \times \text{P/V Ratio})$  from L.H.S. and F from R.H.S. in x we get :

11.  $***\text{M.S.} \times \text{P/V Ratio} = P$

12.  $\text{P/V Ratio} = \frac{\text{Change in profit}}{\text{Change in sales}}$

13.  $\text{P/V Ratio} = \frac{\text{Change in contribution}}{\text{Change in sales}}$

14.  $\text{Profitability} = \frac{\text{Contribution}}{\text{Key factor}}$

15.  $\text{Margin of Safety} = \text{Total sales} - \text{BES.}$

16.  $\text{BES} = \text{Total sales} - \text{MS}$

17.  $\text{Margin of safety ratio} = \frac{\text{Total sales} - \text{BES}}{\text{Total sales}}$

\* S = Sales, V = Variable Cost, F = Fixed Cost, P = Profit

\*\* BES = Break Even Sales, P/V Ratio = Profit Volume Ratio

\*\*\*M.S = Margin of Safety

## CHAPTER 13

# BUDGETS AND BUDGETARY CONTROL

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### BASIC CONCEPTS AND FORMULAS

#### Basic Concepts

1. **Budget:** It is statement of an estimated performance to be achieved in given time, expressed in currency value or quantity or both.
2. **Budget Centre:** A section of an organization for which separate budget can be prepared and control exercised.
3. **Budgetary Control:** Guiding and regulating activities with a view to attaining predetermined objectives, effectively and efficiently.
4. **Budget Manual:** The Budget manual is a schedule, document or booklet which shows, in written forms the budgeting organisation and procedures.
5. **Budget Period:** The period of time for which a budget is prepared and used. It may be a year, quarter or a month.
6. **Components Of Budgetary Control System :**
  1. **Physical budgets**

Those budgets which contain information in terms of physical units about sales, production etc. for example, quantity of sales, quantity of production, inventories, and manpower budgets are physical budgets.
  2. **Cost budgets**

Budgets which provide cost information in respect of manufacturing, selling, administration etc. for example, manufacturing costs, selling costs, administration cost, and research and development cost budgets are cost budgets.
  3. **Profit budgets**

A budget which enables in the ascertainment of profit, for example, sales budget, profit and loss budget, etc.
  4. **Financial budgets**

A budget which facilitates in ascertaining the financial position of a concern, for example, cash budgets, capital expenditure budget, budgeted balance sheet etc.

## Cost Accounting

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7. Objectives of budgeting are Planning, Directing and Controlling
8. **Functional budgets** - Budgets which relate to the individual functions in an organisation are known as Functional Budgets. For example, purchase budget; sales budget; production budget; plant-utilisation budget and cash budget.
9. **Master budget** - It is a consolidated summary of the various functional budgets. It serves as the basis upon which budgeted P & L A/c and forecasted Balance Sheet are built up.
10. **Long-term budgets** - The budgets which are prepared for periods longer than a year are called long-term budgets. Such budgets are helpful in business forecasting and forward planning. Capital expenditure budget and Research and Development budget are examples of long-term budgets.
11. **Short-term budgets** - Budgets which are prepared for periods less than a year are known as short-term budgets. Cash budget is an example of short-term budget. Such types of budgets are prepared in cases where a specific action has to be immediately taken to bring any variation under control, as in cash budgets.
12. **Basic budgets** - A budget which remains unaltered over a long period of time is called basic budget.
13. **Current budgets** - A budget which is established for use over a short period of time and is related to the current conditions is called current budget.
14. **Fixed budget** –  
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”.
15. **Flexible budget** -  
According to Chartered Institute of Management Accountants of England, “a flexible budget is defined as a budget which, by recognizing the difference between fixed, semi-variable and variable costs is designed to change in relation to the level of activity attained.”