# CAINTER LEGENDS TELEGRAM CHANNEL

Click On Below Image To join our channel



LEGENDSWALE .COM

Where dreams come true

# CA INTERMEDIATE

COST & MANAGEMENT ACCOUNTING

# **QUICK REVISION BOOK**

By

CA. NAMIT ARORA SIR

This book is dedicated to my Brother

Mr. MANIK ARORA

# **INDEX**

| S. NO.   | CHAPTERS NAME                         | PAGE NO.    |
|----------|---------------------------------------|-------------|
| 1        | MATERIALS COST                        | 1.1 - 1.3   |
| 2        | EMPLOYEE COST                         | 2.1 - 2.3   |
| 3        | OVERHEADS ABSORPTION COSTING METHOD   | 3.1 - 3.6   |
| 4        | COST SHEET & UNIT COSTING             | 4.1 - 4.2   |
| <i>5</i> | JOB AND BATCH COSTING                 | 5.1 - 5.2   |
| 6        | ACTIVITY BASED COSTING                | 6.1 - 6.2   |
| 7        | DIRECT EXPENSES                       | 7.1 - 7.1   |
| 8        | SERVICE COSTING                       | 8.1 - 8.4   |
| 9        | PROCESS AND OPERATION COSTING         | 9.1 - 9.6   |
| 10       | JOINT PRODUCTS & BY PRODUCTS          | 10.1 - 10.4 |
| 11       | BUDGETS AND BUDGETARY CONTROL         | 11.1 - 11.2 |
| 12       | STANDARD COSTING OR VARIANCE ANALYSIS | 12.1 - 12.5 |
| 13       | MARGINAL COSTING                      | 13.1 - 13.4 |
| 14       | COST ACCOUNTING SYSTEM                | 14.1 - 14.4 |
| 15       | RECONCILIATION                        | 15.1 - 15.2 |
|          |                                       |             |

## **MATERIAL COST**

- 1. Re-order quantity (ROQ): Order size repeated by any business organization.
- 2. Ordering cost: Cost associated with placement of orders (handling, freight etc.).

Annual Ordering Cost =  $\frac{A}{ROQ} \times \mathbf{0}$ 

Here,

A = Annual requirement of raw material to be purchased in quantity

0 = Cost per order

Note: Number or orders should not be in decimals.

3. Carrying cost: Cost associated with holding of average raw material stock (storage, interest, obsolescence etc).

Annual Carrying Cost:

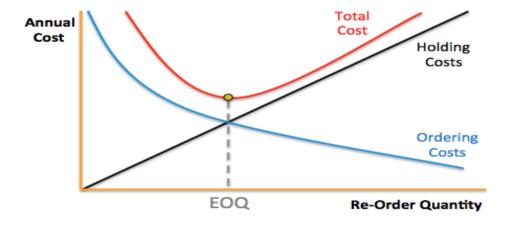
Alternative 1: When there is no Safety Stock =  $\frac{1}{2} \times ROQ \times C$ 

Alternative 2: When there is Safety Stock =  $\left(\frac{1}{2} \times ROQ \times C\right)$  + Safety Stock units × C

Here,

C = Carrying cost per unit per annum

4. Economic order quantity (EOQ): Order size (Unique ROQ) at which total of ordering and carrying cost will be lowest. Order size (Unique ROQ) at which total annual ordering cost equal to annual carrying cost.



Economic order quantity (EOQ) =  $\sqrt{\frac{2AC}{c}}$ 

Here,

A = Annual requirement of raw material to be purchased in quantity

0 = Cost per order

C = Carrying cost per unit per annum

5. Re-order Level/ Ordering Level/ Re-order Point:

Alternative 1 = Maximum usage × Maximum re-order period

Alternative 2 = Average usage × Average re-order period + Minimum stock/Safety stock

6. Minimum Stock Level = ROL - (Average usage × Average re-order period)

7.  $Maximum Stock Level = ROL + ROQ - (Minimum usage \times Minimum re-order period)$ 

8. Average Stock level:

Alternative 1 = ½ (Minimum stock level + Maximum stock level)

Alternative 2 = ½ of ROQ + Minimum stock level

9. Danger Stock Level:

Alternative 1 = Average usage × Emergency re-order period (preferred)

Alternative 2 = Minimum usage × Emergency re-order period

10. ABC analysis:

|                  | % Value    | % Quantity | Control |
|------------------|------------|------------|---------|
| $\boldsymbol{A}$ | <i>70%</i> | 10%        | High    |
| $\boldsymbol{B}$ | 20%        | 20%        | Medium  |
| <b>C</b>         | 10%        | <i>70%</i> | Low     |

#### 11. Valuation of Material:

## Statement Showing Cost Per Unit

| Particulars Particulars  | ₹     |
|--|-------|
| Purchase price/Invoice price/Listed Price                        | XXX   |
| Less: Trade or Quantity discount (× Cash discount)               | (XXX) |
| Less: Subsidy/grant/incentives from government                   | (XXX) |
| Add: Road tax/toll tax   | XXX   |
| Add: IGST/CGST/SGST (when ITC is not available)                  | XXX   |
| Add: Custom duty   | XXX   |
| Add: Insurance   | XXX   |
| Add: Commission/Brokerage on purchase                            | XXX   |
| Add: Freight inward  | XXX   |
| Add: Net cost of Containers/Drums or packing material            | XXX   |
| (when not returnable or returnable at low value)                 |       |
| Total cost   | XXX   |
| ÷ Number of Effective units                                      | ÷ XXX |
| (Total units – Normal shortage – Provision for further Shortage) |       |
| Cost per unit  | XXX   |

#### Notes:

- Cash discount, Indirect tax if ITC is available and demurrage, detention charges, penalty etc. do not form part of cost.
- GST is payable on Net purchase price (Listed price less Trade or Quantity discount)

## CHAPTER 1 MATERIAL COST

- Freight is distributed on the basis of weight among various materials.
- GST, Custom Duty and Insurance are distributed on the basis of value among various materials.

## 12. Normal Loss/Standard Loss/Unavoidable Loss:

- > Average/ standard loss of concern industry,
- Customer will suffer this loss due to increase in cost.

| Particulars Particulars | Quantity | Rate  | Value |
|-------------------------|----------|-------|-------|
| Purchase                | 100      | 10.00 | 1,000 |
| Less: Normal Loss       | (10)     | -     | -     |
| Total Cost              | 90       | 11.11 | 1,000 |

#### 13. Abnormal loss:

- > Loss over and above normal loss
- > Businessmen will suffer this loss by debiting it in Costing P/L and profit will decrese
- > No impact on cost per unit

| Particulars Particulars | Quantity | Rate  | Value |
|-------------------------|----------|-------|-------|
| Purchase                | 100      | 10.00 | 1,000 |
| Less: Abnormal Loss     | (10)     | 10.00 | (100) |
| Total Cost              | 90       | 10.00 | 900   |

- 14. Inventory Turnover Ratio (ITR) = Raw Materials Consumed ÷ Average Inventory
- 15. Inventory Holding Period (in days) = 365 ÷ ITR

#### 16. Stores ledger:

| Date | R                   | Receipts |       | Issues             |      |       | Balance  |      |       |
|------|---------------------|----------|-------|--------------------|------|-------|----------|------|-------|
|      | Quantity            | Rate     | Value | Quantity           | Rate | Value | Quantity | Rate | Value |
|      |                     |          |       |                    |      |       |          |      |       |
|      |                     |          |       | Return to supplier |      |       |          |      |       |
|      | Return<br>to stores |          |       |                    |      |       |          |      |       |
|      |                     |          |       | Shortage           |      |       |          |      |       |

#### Notes:

- > Transferred between two job or departments: No treatment in stores ledger
- Return to supplier: Issue side at the rate it received from supplier or latest purchase rate
- Return to stores: Receipt side at the rate of issue or recent issue rate when rate of issue is unknown
- ► Abnormal shortage: Issue side as per the method (transfer to Costing P/L)
- Normal shortage: Issue side only in quantity column
- Material consumed: Total value of issued material Material return to stores Abnormal shortage
   Return to supplier

## EMPLOYEE COST

- 1. Wages under Straight Time Rate System = Working hours × Time Rate per hour
- 2. Wages under Straight Piece Rate System = Number of units produced × Piece Rate
- 3. Wages under Piece Rate System with Guaranteed Time Wages:
  - Step 1: Calculate wages as per Piece Rate System
  - Step 2: Calculate wages as per Time Rate System
  - **Step 3:** Payment to worker (whichever is higher between Step 1 and Step 2)
- 4. Wages under Halsey system =  $(AH \times R) + 50\% (SH AH) \times R$

Here,

AH = Actual hours worked for actual production
SH = Standard hours for actual production

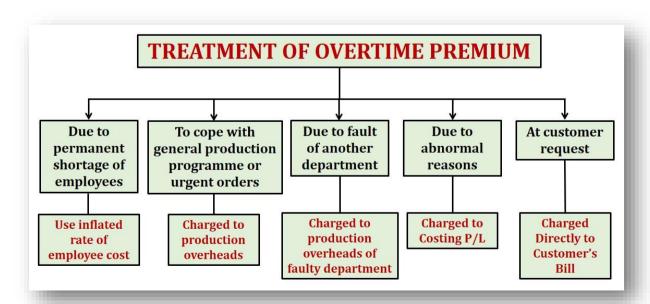
SH – AH = Time saved by the worker

R = Time rate

- 5. Wages under Rowan system =  $(AH \times R) + AH/SH (SH AH) \times R$
- 6. Effective hourly rate = Wages ÷ AH
- 7. Overtime: Working over and above normal working hours

Overtime premium: Payment in excess of normal wage rate

Overtime payment = Payment as per normal rate + Overtime premium



8. Idle time: Worker in factory without work but eligible for wages.

Normal idle time: It is the time which cannot be avoided or reduced in the normal course of business.

#### **Causes**

- The time lost between factory gate and the place of work,
- > The interval between one job and another,
- The setting up time for the machine,
- Normal rest time (fatigue), break for lunch etc.

#### **Treatment**

- Increase employee rate
- Charged to production overheads

Abnormal idle time: Apart from normal idle time, there may be factors which give rise to abnormal idle time

#### Causes

- > Idle time may also arise due to abnormal factors like lack of coordination
- > Power failure, breakdown of machines
- Non-availability of raw materials, strikes, lockouts, poor supervision, fire, flood etc.

#### **Treatment**

Transfer to costing P/L

## 9. Statement Showing Gross Wages:

| Particulars Particulars | Amount |
|-------------------------|--------|
| Basic Wages             | XXX    |
| Dearness Allowance      | XXX    |
| Basic plus D.A.         | XXX    |
| Bonus                   | XXX    |
| Various Allowances      | XXX    |
| Other Payments          | XXX    |
| Gross Wages             | XXX    |

## 10. Statement Showing Net Wages:

| Particulars                                     | Amount |
|---|--------|
| Gross Wages                                     | XXX    |
| Less: Employee's contribution to Provident Fund | (XXX)  |
| Less: Employee's contribution to Pension Fund   | (XXX)  |
| Less: Employee's contribution to E.S.I.         | (XXX)  |
| Less: T.D.S.                                    | (XXX)  |
| Less: Professional Tax                          | (XXX)  |
| Less: Loan Deduction                            | (XXX)  |
| Less: Any other Deduction                       | (XXX)  |
| Net Wages                                       | XXX    |

## 11. Statement Showing Employee Cost Per Hour:

| Particulars Particulars                                | Amount |
|--|--------|
| Gross Wages  | XXX    |
| Add: Employer's contribution to P.F.                   | XXX    |
| Add: Employer's contribution to E.S.I.                 | XXX    |
| Employee Cost  | XXX    |
| ÷ Effective Labour Hours                               | ÷XXX   |
| (Working Hours – Eligible Holidays – Normal Idle Time) |        |
| Employee Cost Per Hour                                 | XXX    |

Note: If nothing is specified in the question, contribution of employer towards Provident Fund, Pension Fund and E.S.I. equals to employee contribution.

## 12. Labour Turnover Rates:

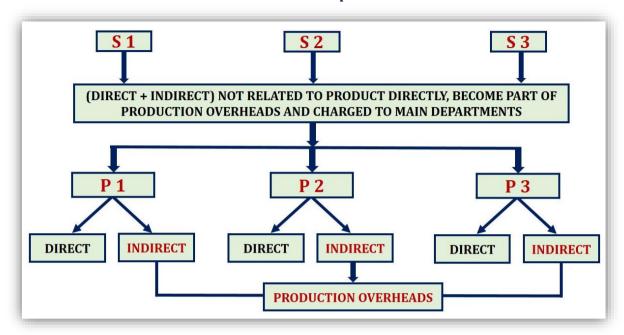
| Separation Method                   | = | $\frac{Number of separations}{Average workers} \times 100$                               |
|-------------------------------------|---|--|
| Replacement Method                  | = | $\frac{\textit{Number of replacements}}{\textit{Average workers}} \times \textbf{100}$   |
| New Accession Method                | = | $\frac{Number\ of\ new\ joinings}{Average\ workers}\times 100$                           |
| Accession Method                    | = | $\frac{\textit{Number of total joinings}}{\textit{Average workers}} \times \textbf{100}$ |
| Flux Method (alt 1)                 | = | $\frac{No.\ of\ separations + replacements}{Average\ workers} \times 100$                |
| Flux Method (alt 2)                 | = | $\frac{\textit{No. of separations} + accessions}{\textit{Average workers}} \times 100$   |
| Average Workers                     | = | $\frac{\textit{Opening workers} + \textit{Closing workers}}{2}$                          |
| 13. Equivalent Annual Turnover Rate | = | Employee Turnover Rate × 365/52/12   |

## 14. Statement Showing Profit Foregone on Account of Labour Turnover

| Particulars   | Amount |
|---|--------|
| Contribution foregone due to delay in filling the vacancies | XXX    |
| Contribution foregone due to unproductive training hours    | XXX    |
| (If these hours are excluded)                               |        |
| Settlement cost due to leaving                              | XXX    |
| Recruitment costs   | XXX    |
| Selection costs   | XXX    |
| Training costs  | XXX    |
| Profit Foregone   | XXX    |

## **OVERHEADS - ABSORPTION COSTING METHOD**

1. Production Overheads: All indirect cost related to production.



- 2. Types of Departments:
- Main/production departments: Product is produced in these departments.



Support/service departments: Product is not produced in these departments but these departments help to main departments.

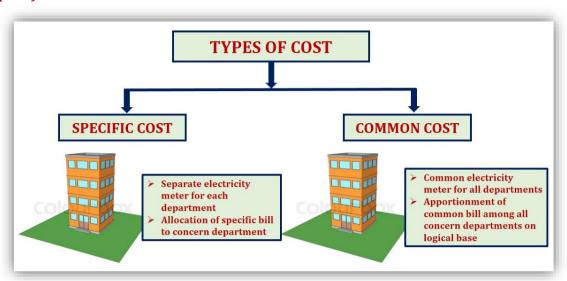
## <u>Canteen</u>



**Stortes** 



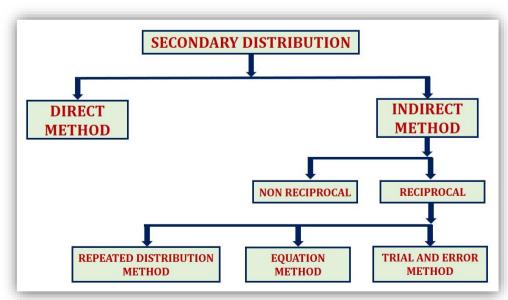
## 3. Types of Cost:



## 4. Statement Showing Primary Distribution:

| Particulars         | Basis      | Production dept. |     | Service dept. |           |
|---------------------|------------|------------------|-----|---------------|-----------|
| Particulars         | Dusis      | P1               | P2  | <i>S</i> 1    | <i>S2</i> |
| Specific Cost:      |            |                  |     |               |           |
| Direct material     | Allocation | No               | No  | Yes           | Yes       |
| Direct labour       | Allocation | <i>No</i>        | No  | Yes           | Yes       |
| Direct expenses     | Allocation | No               | No  | Yes           | Yes       |
| Indirect material   | Allocation | Yes              | Yes | Yes           | Yes       |
| Indirect labour     | Allocation | Yes              | Yes | Yes           | Yes       |
| Indirect expenses   | Allocation | Yes              | Yes | Yes           | Yes       |
| Other specific cost | Allocation | Yes              | Yes | Yes           | Yes       |
| Common Cost:        |            |                  |     |               |           |
| Rent                | Area       | Yes              | Yes | Yes           | Yes       |
| Insurance etc.      | Value      | Yes              | Yes | Yes           | Yes       |
| Total OH            |            | XXX              | XXX | XXX           | XXX       |

## 5. Secondary Distribution:



- 6. Direct Method: Under this method cost of service departments are directly apportioned to production departments. [Service departments are Bhai Bhai]
- 7. Non Reciprocal Method or Step Ladder Method or Step Down Method:
  - **Step 1:** Apportion expenses of largest service department [Big Brother] to all other departments (Production departments and service departments [Younger Brothers]).
  - Step 2: Apportion expenses (including expenses received from largest service departments) of second largest service department to all other departments (Production departments and service departments excluding largest service department [Big Brother]) and so on.
- 8. Reciprocal Method: Under this method we can distribute expenses by using:
  - Repeated Distribution Method or Continuous Allotment Method
  - > Simultaneous Equation Method
  - Trial and Error Method
- 9. Repeated Distribution Method:
  - **Step 1:** Apportion expenses of any service department to all other departments first (Production departments and service departments).
  - Step 2: Apportion expenses (including expenses received from service departments in step 1) of another service department to all other departments (Production departments and service departments including service department in step 1).
  - Step 3: Repeat the process until 100% apportionment (to finish the process of repeated distribution, apportion the expenses of last distribution directly to production departments when distribution amount is very less).
- 10. Simultaneous Equation Method:
  - Step 1: Calculate adjusted expenses of service departments with the help of equation.
  - Step 2: Apportion adjusted expenses.
- 11. Trial and Error Method:
  - Step 1: Calculate adjusted expenses of service departments with the help of repeated distribution.
  - Step 2: Apportion adjusted expenses.
- 12. Predetermined Absorption Rate =  $\frac{Budgeted \ Overheads}{Budgeted \ Recovery \ Base}$ 
  - Overheads absorption rate is also known as overheads charging rate, overheads application rate and overheads recovery rate.
- 13. Types of Recovery Base:
  - Direct Material Cost
  - Direct Employee Cost
  - > Prime Cost
  - Labour Hours
  - Machine Hours

**—** 

- Number of Physical Units
- Number of Orders or Jobs
- 14. Under or Over Absorption: Difference between absorbed overheads and actual overheads.

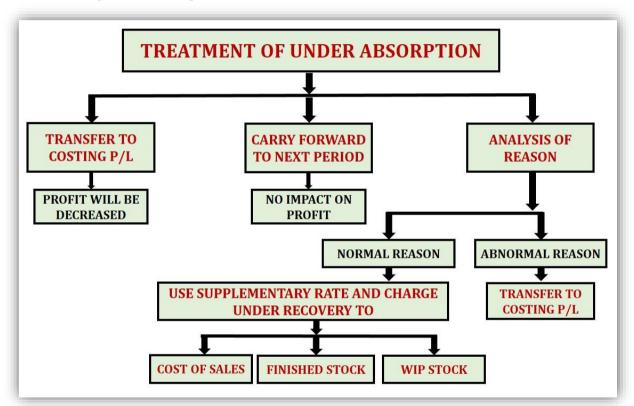
#### Situations:

- Absorbed OH > Actual OH
   Absorbed OH < Actual OH</li>
- 3. Absorbed OH = Actual OH

Over Absorption Under Absorption

**Equal Absorption** 

15. Treatment of Under Absorption:



- 16. Types of Recovery Rate:
  - Normal Rate or Actual Rate
- Actual Overheads
  Actual Recovery Base
  - Predetermined Overheads Rate
- Budgeted Overheads
  Budgeted Recovery Base
- Departmental Overheads Rate
- = Overheads of Concern Department
  Base of Concern Department

Blanket Overheads Rate

Total Overheads of Factory

Recovery Base for Factory

#### 17. Blanket Overheads Rate:

Blanket overhead rate refers to the computation of one single overhead rate for the whole

factory.

The use of blanket rate may be proper in certain factories producing only one major product in a continuous process or where the work performed in every department is fairly uniform or standardised.

## 18. Statement of Machine Hour Rate (MHR):

|            | Particulars                            | Amount      |
|------------|--|-------------|
| <i>(A)</i> | Standing Charges or Fixed Cost:        |             |
|            | Rent                                   | XXX         |
|            | Heat and light                         | XXX         |
|            | Forman's salary                        | XXX         |
|            | Depreciation (not related to activity) | XXX         |
|            | Wages                                  | XXX         |
|            | Bonus                                  | XXX         |
|            | Other fixed cost                       | XXX         |
|            | Total Standing Charges (A)             | XXX         |
| <b>(B)</b> | Running Expenses or Variable Cost:     |             |
|            | Repairs and maintenance                | XXX         |
|            | Consumable stores                      | XXX         |
|            | Power                                  | XXX         |
|            | Depreciation (related to activity)     | XXX         |
|            | Other variable cost                    | XXX         |
|            | Total Running Expenses (B)             | XXX         |
|            | Total Expenses(A+B)                    | XXX         |
|            | ÷ Effective Machine Hours              | ÷ <i>XX</i> |
|            | Machine Hour Rate (MHR)                | XXX         |

## 19. Machine Hours includes:

1. Running Hours Always Productive or Effective Machine Hours

2. Set up Hours As per question or assumption

3. Maintenance Hours Always Unproductive Hours



## **COST SHEET & UNIT COSTING**

- 1. Cost Sheet: A cost sheet or cost statement is a document which provides a detailed cost information (functional classification).
- 2. Proforma Cost Sheet:

| Raw Materials Purchased Add: Opening stock of Raw Materials Less: Closing stock of Raw Materials Add: Carriage Inward Less: Recovery From Sale of Scrap of Raw Materials Less: Cost of Abnormal Loss of Raw Materials Less: Cost of Abnormal Loss of Raw Materials  Direct Wages or Labour or Employee Cost: Wages and salaries Allowance and incentives Payment for overtime Bonus Employer's contribution in P.F, E.S.I. etc. Other benefits  Direct Expenses: Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  XXX  | Particulars Particulars                               | Total Cost |
|--|---|------------|
| Add: Opening stock of Raw Materials Less: Closing stock of Raw Materials Add: Carriage Inward Less: Recovery From Sale of Scrap of Raw Materials Less: Cost of Abnormal Loss of Raw Materials Less: Cost of Abnormal Loss of Raw Materials  Direct Wages or Labour or Employee Cost: Wages and salaries Allowance and incentives Payment for overtime Bonus Employer's contribution in P.F, E.S.I. etc. Other benefits  Direct Expenses: Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  **XXX** Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares | Direct Material Consumed:                             |            |
| Less: Closing stock of Raw Materials Add: Carriage Inward Less: Recovery From Sale of Scrap of Raw Materials Less: Cost of Abnormal Loss of Raw Materials  Direct Wages or Labour or Employee Cost: Wages and salaries Allowance and incentives Payment for overtime Bonus Employer's contribution in P.F, E.S.I. etc. Other benefits  Direct Expenses: Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares  | Raw Materials Purchased                               |            |
| Add: Carriage Inward Less: Recovery From Sale of Scrap of Raw Materials Less: Cost of Abnormal Loss of Raw Materials  Direct Wages or Labour or Employee Cost: Wages and salaries Allowance and incentives Payment for overtime Bonus Employer's contribution in P.F, E.S.I. etc. Other benefits  Direct Expenses: Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares   | Add: Opening stock of Raw Materials                   |            |
| Less: Recovery From Sale of Scrap of Raw Materials Less: Cost of Abnormal Loss of Raw Materials  Direct Wages or Labour or Employee Cost:  Wages and salaries Allowance and incentives Payment for overtime Bonus Employer's contribution in P.F, E.S.I. etc. Other benefits  Direct Expenses:  Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares  | Less: Closing stock of Raw Materials                  |            |
| Direct Wages or Labour or Employee Cost:  Wages and salaries Allowance and incentives Payment for overtime Bonus Employer's contribution in P.F, E.S.I. etc. Other benefits  Direct Expenses: Cost of utilities such as power & fuel, steam etc. Royalty paid/payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares   | Add: Carriage Inward                                  |            |
| Direct Wages or Labour or Employee Cost:  Wages and salaries Allowance and incentives Payment for overtime Bonus Employer's contribution in P.F, E.S.I. etc. Other benefits  Direct Expenses: Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  **XXX**  **XXX**  **Eactory/Works/Production/Manufacturing Overheads: Consumable stores and spares*   | Less: Recovery From Sale of Scrap of Raw Materials    |            |
| Wages and salaries Allowance and incentives Payment for overtime Bonus Employer's contribution in P.F, E.S.I. etc. Other benefits  Direct Expenses: Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  XXX  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares   | Less: Cost of Abnormal Loss of Raw Materials          |            |
| Allowance and incentives Payment for overtime Bonus Employer's contribution in P.F, E.S.I. etc. Other benefits  Direct Expenses: Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  XXX  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares  | Direct Wages or Labour or Employee Cost:              |            |
| Payment for overtime Bonus Employer's contribution in P.F, E.S.I. etc. Other benefits  Direct Expenses: Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  XXX  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares   | Wages and salaries                                    |            |
| Bonus Employer's contribution in P.F, E.S.I. etc. Other benefits  Direct Expenses: Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  XXX  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares  | Allowance and incentives                              |            |
| Bonus Employer's contribution in P.F, E.S.I. etc. Other benefits  Direct Expenses: Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  XXX  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares  | Payment for overtime                                  |            |
| Direct Expenses:  Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  XXX  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares   | Bonus   |            |
| Direct Expenses:  Cost of utilities such as power & fuel, steam etc.  Royalty paid/ payable for production or provision of service  Hire charges paid for hiring specific equipment  Fee for technical assistance and know-how  Amortised cost of moulds, patterns, patents etc.  Cost for product/ service specific design or drawing;  Cost of product/ service specific software  Consumable Material  Job Charges paid to job workers  Prime Cost  XXX  Factory/Works/Production/Manufacturing Overheads:  Consumable stores and spares  | Employer's contribution in P.F, E.S.I. etc.           |            |
| Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  XXX  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares   | Other benefits  |            |
| Cost of utilities such as power & fuel, steam etc. Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  XXX  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares   | Direct Expenses:                                      |            |
| Royalty paid/ payable for production or provision of service Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  XXX  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares  |   |            |
| Hire charges paid for hiring specific equipment Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  XXX  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares   |   |            |
| Fee for technical assistance and know-how Amortised cost of moulds, patterns, patents etc. Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  XXX  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares   |   |            |
| Cost for product/ service specific design or drawing; Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares   |   |            |
| Cost of product/ service specific software Consumable Material Job Charges paid to job workers  Prime Cost  XXX  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares  | Amortised cost of moulds, patterns, patents etc.      |            |
| Consumable Material Job Charges paid to job workers  Prime Cost  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares  | Cost for product/ service specific design or drawing; |            |
| Job Charges paid to job workers  Prime Cost  **Eactory/Works/Production/Manufacturing Overheads: Consumable stores and spares  | Cost of product/ service specific software            |            |
| Prime Cost  Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares  XXX  XXX   | Consumable Material                                   |            |
| Factory/Works/Production/Manufacturing Overheads: Consumable stores and spares   | Job Charges paid to job workers                       |            |
| Consumable stores and spares   | Prime Cost  | XXX        |
|  | Factory/Works/Production/Manufacturing Overheads:     |            |
| Depreciation of plant and machinery, factory building etc.   | Consumable stores and spares                          |            |
|  |   |            |
| Lease rent of production assets  | , .   |            |
| Repair and maintenance of plant and machinery, factory building etc.   |   |            |
| Indirect employees cost related with production activities   |   |            |
| Drawing and Designing department cost  |   |            |
| Insurance of plant and machinery, factory building, stock of RM & WIP etc.   |   |            |
| Amortized cost of jigs, fixtures, tooling etc.   |   |            |
| Service department cost such as Tool Room, Engineering & Maintenance, and  |   |            |
| Pollution Control etc.   |   |            |
| Carriage on material return  |   |            |
| Gross Works Cost/Factory Cost XXX  |   | XXX        |
| Add: Opening WIP   |   |            |
| Less: Closing WIP  Works/Factory Cost  XXX   |   | XXX        |
| Add: Quality Control Cost  | · · · ·   |            |

| Add: Research and Development Cost   |      |
|--|------|
| Add: Administrative Overheads (relating to production activity)                    |      |
| Less: Credit for recoveries/Scrap/By-Products                                      |      |
| Add: Packing Cost (Primary)  |      |
| Cost of Production   | XXX  |
| Add: Opening Finished Goods  | 1212 |
| Less: Closing Finished Goods   |      |
| Cost of Goods Sold   | XXX  |
| Add: Administrative OH (General/not related to production):                        | ΛΛΛ  |
| Depreciation and maintenance of, building, furniture etc. of corporate or          |      |
| general management.  |      |
| Salary of administrative employees, accountants, directors, secretaries etc.       |      |
| Rent, rates & taxes, insurance, lighting, office expenses etc.                     |      |
| Indirect materials- printing and stationery, office supplies etc.                  |      |
| Legal charges, audit fees, corporate office expenses like directors' sitting fees, |      |
| remuneration and commission, meeting expenses etc.                                 |      |
| Add: Selling Overheads:  |      |
| Salary and wages related with sales department and employees directly              |      |
| related with selling of goods.   |      |
| Rent, depreciation, maintenance and other cost related with sales                  |      |
| department.  |      |
| Cost of advertisement, maintenance of website for online sales, market             |      |
| research etc.  |      |
| Expenses for participation in Industrial exhibition                                |      |
| Add: Distribution Overheads:   |      |
| Salary and wages of employees engaged in distribution of goods.                    |      |
| Transportation and insurance costs related with distribution.                      |      |
| Depreciation, hire charges, maintenance and other operating costs related          |      |
| with distribution vehicles etc.  |      |
| Packing Cost (Secondary)   |      |
| Cost of Sales  | XXX  |
| Add: Profit  | XXX  |
| Sales  | XXX  |
|  |      |

#### Note:

- Abnormal Costs: Any abnormal cost, where it is material and quantifiable, shall not form part of cost of production or acquisition or supply of goods or provision of service. Examples of abnormal costs are:
  - (a) Cost pertaining to or arising out of a pandemic e.g. COVID-19
  - (b) Cost associated with employees due to sudden lockdown.
- Subsidy or Grant or Incentives: Any such type of payment received/ receivable are reduced from the cost objects to which such amount pertains.
- Penalty, Fine, Damages, and Demurrage: These types of expenses are not form part of cost.
- Interest, Cash Discount and Other Finance Costs: Interest, including any payment in the nature of interest for use of non- equity funds and incidental cost that an entity incurs in arranging those funds. Interest and finance charges are not included in cost of production.
- Income tax, Donations and Bad Debts: These items are not form part of cost.

## **JOB & BATCH COSTING**

## 1. Job Costing:

- In this method costs are collected and accumulated for specific jobs/work order
- > Each job is treated as a separate entity for the purpose of costing
- This method is used to ascertain cost and profit of each job and takes into account the cost of materials, employees and overhead etc.

## 2. Proforma Job Cost Sheet:

| Particulars Particulars   | Total Cost |
|---|------------|
| Direct Material Consumed  |            |
| Direct Wages or Labour or Employee Cost   |            |
| Direct Expenses   |            |
| Prime Cost  | XXX        |
| Factory/Works/Production/Manufacturing Overheads                                  |            |
| Add: Opening WIP (if any)   |            |
| Works/Factory Cost  | XXX        |
| Add: Administrative Overheads (relating to production activity)                   |            |
| Cost of Production/Cost of Goods Sold   | XXX        |
| Add: Administrative OH (General/not related to production) Add: Selling Overheads |            |
| Add: Distribution Overheads   |            |
| Cost of Sales   | XXX        |
| Add: Profit   | XXX        |
| Sales   | XXX        |

## 3. Valuation of Closing WIP:

| Particulars Particulars  | Total Cost |
|--|------------|
| Direct Material Consumed   |            |
|  |            |
| Direct Wages or Labour or Employee Cost                                    |            |
| Direct Expenses  |            |
|  |            |
| Prime Cost   | XXX        |
| Factory/Works/Production/Manufacturing Overheads Add: Opening WIP (if any) |            |
| Value of Closing WIP   | XXX        |

- 4. Batch Costing:
- > Batch costing is a type of specific order costing where articles are manufactured in predetermined lots, known as batch
- > This method is used to ascertain cost and profit of specific batch or units in specific batch
- 5. Economic Batch Quantity (EBQ):

$$EBQ \qquad \qquad = \qquad \qquad \sqrt{\frac{2DS}{c}}$$

Where,

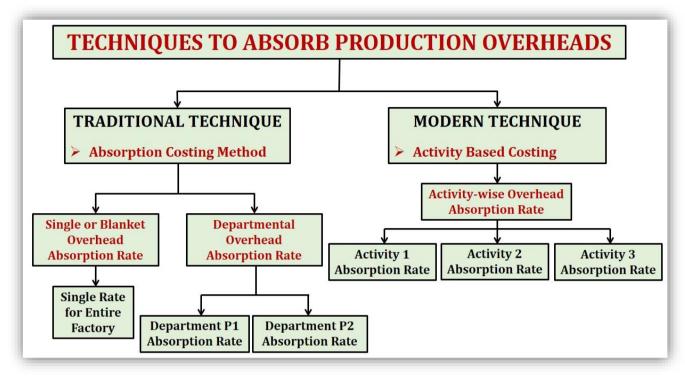
D = Annual demand for the product

S = Setting up cost per batch

C = Carrying cost per unit of production

## **ACTIVITY BASED COSTING**

1. Traditional Absorption Costing V/S Activity Based Costing:



- 2. Activity Based Costing: Activity Based Costing is an accounting methodology that assigns costs to activities rather than products or services. This enables resources & overhead costs to be more accurately assigned to products & services that consume them. ABC is a technique which involves identification of cost with each cost driving activity and making it as the basis for apportionment of costs over different cost objects/jobs/products/customers or services.
- 3. Activity: An event that incurs cost.

Like: Packing and forwarding, inspection and testing etc.

4. Cost Pool: It represents a group of various individual cost items. It consists of costs that have same cause and effect relationship or Group of various individual cost items related to any specific activity.

Like: Group of various cost items related to packing and forwarding.

- 5. Cost Driver: It is a factor that causes a change in the cost of an activity. There are two categories of cost driver:
  - a) Resource Cost Driver: It is a measure of the quantity of resources consumed by an activity. It is used to assign the cost of a resource to an activity or cost pool.
  - b) Activity Cost Driver: It is a measure of the frequency and intensity of demand, placed on activities by cost objects. It is used to assign activity costs to cost objects.
- 6. Cost Object: It is an item for which cost measurement is required e.g. a product or a customer.

## 7. Stages in Activity Based Costing (ABC):

- a) Identify the different activities within the organisation,
- b) Relate the overheads to the activities (creates 'Cost Pools' or 'Cost Buckets').
- c) Determine the activity cost drivers,
- d) Calculate activity cost driver rates for each activity,
- e) Absorb Overheads on the basis of Cost Driver rate.

## 8. Proforma Statement Showing Unit Cost and Total Cost Using ABC Method:

| Particulars Particulars                             | (₹) |
|---|-----|
| Direct Material Cost                                | XXX |
| Direct Labour Cost                                  | XXX |
| Direct Expenses                                     | XXX |
| Prime Cost  | XXX |
| Production Overhead:                                |     |
| Activity 1 say Material procurement @ XXX per order | XXX |
| Activity 2 say Maintenance @ XXX per hour           | XXX |
| Activity 3 say Set up @ per set                     | XXX |
| Total Cost  | XXX |
| ÷ Number of units                                   | XXX |
| Cost per unit                                       | XXX |

## 9. Proforma Statement Showing Determination of Cost Driver Rate:

| Activity Cost Pool              | Amount | Cost Driver       | Volume | Cost Driver Rate |
|---------------------------------|--------|-------------------|--------|------------------|
| Activity 1 Material procurement | XXX    | Material orders   | XXX    | XXX per order    |
| Activity 2 Maintenance          | XXX    | Maintenance hours | XXX    | XXX per hour     |
| Activity 3 Set up               | XXX    | No. of Set-ups    | XXX    | XXX per set-up   |
|                                 |        |                   |        |                  |



## **DIRECT EXPENSES**

- 1. Direct Expenses: Expenses other than direct material cost and direct employee cost, which are incurred to manufacture a product or for provision of service and can be directly traced in an economically feasible manner to a cost object. The following costs are examples for direct expenses:
- (a) Royalty paid/payable for production or provision of service;
- (b) Hire charges paid for hiring specific equipment;
- (c) Cost for product/service specific design or drawing;
- (d) Cost of product/service specific software;
- (e) Other expenses which are directly related with the production of goods or provision of service etc.
- 2. Measurement of Direct Expenses: The direct expenses are measured at invoice or agreed price net of rebate or discount but includes duties and taxes (for which input credit not available), commission and other directly attributable costs.

In case of sub-contracting, where goods are get manufactured by job workers independent of the principal entity, are measured at agreed price. Where the principal supplies some materials to the job workers, the value of such materials and other incidental expenses are added with the job charges paid to the job workers.

3. Treatment of Direct Expenses: Direct Expenses form part of the prime cost for the product or service to which it can be directly traceable and attributable. In case of lump-sum payment or onetime payment, the cost is amortised over the estimated production volume or benefit derived.

If the expenses incurred are of insignificant amount i.e. not material, it can be treated as part of overheads.

## **SERVICE COSTING**

- 1. Operating costing: This method is used to calculate cost and determine price of one service unit.
- 2. In CA intermediate ICAI covers following services:
  - > Transport service
  - > Hotel and lodges service
  - > Restaurant service
  - > Hospital service
  - **Educational institute**
  - Information technology (it) and it enabled services (ites)
  - > Toll plaza
  - > Financial institutes
  - > Insurance and
  - Power generation service.
- 3. Transport Service: Cost and fare per passenger-km. and ton-km (Bus, Taxi and Truck etc.)

## Proforma Operating Cost Sheet for Transport Service

|            | Particulars Particulars                                   | Amount |
|------------|---|--------|
| <i>(A)</i> | Standing Charges or Fixed Cost:                           |        |
|            | Depreciation (life related to period, like: 5 years)      | XXX    |
|            | Insurance   | XXX    |
|            | License   | XXX    |
|            | Salary of manager, driver, conductor, cleaner etc.        | XXX    |
|            | Taxes   | XXX    |
|            |   | XXX    |
|            | Permit fee  | XXX    |
|            | Garage rent   |        |
|            | Stationery  | XXX    |
|            | Administration expenses, General overheads etc.           | XXX    |
|            | Any other fixed cost                                      | XXX    |
|            | Total (A)   | XXX    |
| (B)        | Running Charges or Variable Cost:                         |        |
|            | Diesel/petrol/CNG/Electricity for EV                      | XXX    |
|            | Lubricants, oil etc.                                      | XXX    |
|            | Depreciation (life related to activity, like: 50,000 kms) | XXX    |
|            | Commission  | XXX    |
|            | Any other variable cost                                   | XXX    |
|            | Total (B)   | XXX    |
| (C)        | Maintenance Charges or Semi Variable Cost:                |        |
|            | Repairs and maintenance                                   | VVV    |
|            | Tyres   | XXX    |
|            | Spares etc.   | XXX    |
|            | •   | XXX    |
|            | Total (C)   | XXX    |

| Total Operating Cost (A + B + C)              | XXX |
|---|-----|
| Add: profit                                   | XXX |
| Net Collections or Taking                     | XXX |
| Add: Indirect taxes (Passenger tax, GST etc.) | XXX |
|   |     |
| Gross Collections or Taking                   | XXX |
| ÷ Total passenger-kms or ton-kms              | XXX |
| Fare/Charges for Per Passenger-Km or Ton-Kms  | XXX |

#### Notes:

- a. Depreciation when life of asset is related with activity level (like: 50,000 kms) : Variable
- b. Depreciation when life of asset is not related with activity level : Fixed
- c. Tyres or battery 'replacement after 5 years'
  - Step 1: Calculate lifetime cost of replacement of tyres or battery (no replacement at the end of useful life of asset)
  - Step 2: Calculate amortization cost of tyres or battery for accounting period.
- d. Service cost at 'every completed 5,000 kms.'
  - Step 1: Calculate number of complete 5,000 kms during the accounting period.
  - **Step 2:** Calculate service cost = No of complete 5,000 kms. × Cost per service
- 4. Differential Fare: In case of different charges for different categories of service, concept of differential fare is applied on the basis of equivalent units of service.
- 5. Absolute ton-km or Weighted average ton-km =  $D1 \times W1 + D2 \times W2 + D3 \times W3...$
- 6. Commercial ton-km or Simple average ton-km = Total Distance × Average Weight
  - During the computation of average weight, zero weight is ignored while distance is considered.
- 7. Hotel and Lodge Service: Cost and fare per room day.
  - Total operating cost without any classification
- 8. Hospital Service: Cost and charges per patient day or per patient visit or X Ray, CT Scan etc.
  - Total operating cost is classified into fixed and variable cost
- 9. IT and IT Enabled Services (ITES): Cost and charges per Project.
  - Total operating cost without any classification
  - Generally overheads are absorbed on the basis of salary
- 10. Toll Plaza and Toll Roads: Cost of the project, Cost per km and toll charges per vehicle.
  - > Total operating cost without any classification
  - **BOT:** Build-Operate-Transfer
  - **Concession Period:** Period within which private organization can recover toll

- 11. Educational Institutes: Cost and fees per batch, per student.
  - Total operating cost without any classification
- 12. Insurance Service: Cost and charges per policy.

## Proforma Operating Cost Sheet for Insurance Service

| Particulars Particulars                               | Amount |
|---|--------|
| (a) Product Development, Marketing and Sales support: |        |
| Policy development cost                               | XXX    |
| Cost of marketing of the policy                       | XXX    |
| Sales support expenses                                | XXX    |
| Total (A)   | XXX    |
| (b) Operations:                                       |        |
| Policy issuance cost                                  | XXX    |
| Policy servicing cost                                 | XXX    |
| Claims management cost                                | XXX    |
| Total (B)   | XXX    |
| (c) IT Cost:  |        |
| IT cost   | XXX    |
| Total (C)   | XXX    |
| (d) Support functions:                                |        |
| Postage and logistics                                 | XXX    |
| Facilities cost                                       | XXX    |
| Employees cost  | XXX    |
| Office administration cost                            | XXX    |
| Total (D)   | XXX    |
| Total Cost $(A + B + C + D)$                          | XXX    |
| ÷ Number of Policies                                  | ÷ XXX  |
| Cost Per Policy                                       | XXX    |

- 13. Financial Institutions: Cost and fees per loan application, credit card etc.
  - Total operating cost without any classification
- 14. Power House Service: Cost and charges per KWH.
  - Total operating cost is classified into fixed and variable cost
- 15. Service Cost Unit: To compute the Service cost, it is necessary to understand the unit for which the cost is to be computed. All the costs incurred during a period are collected and analyzed and then expressed in terms of a cost per unit of service.
  - Operating cost per unit = Total cost ÷ Service units

## Service units can be classified as:

- Single service unit: Only one measurement unit is used to know the cost of service or operation.
- Composite service unit: Sometime two measurement units are combined together to know the cost of service or operation. These are called composite cost units. For example, a public transportation undertaking would measure the operating cost per passenger per kilometre.

Examples of Composite units are Ton-km., Quintal-km, Passenger-km., Patient-day etc.

| Service Industry               | Unit of Cost (examples)   |
|--------------------------------|---|
| Transport Services             | Passenger-km., (In public transportation)                         |
|                                | Quintal-km., or Ton-km. (In goods carriage)                       |
| Electricity Supply service     | Kilowatt-hour (KWH)   |
| Hospital                       | Patient per day, room per day or per bed, per operation etc.      |
| Canteen                        | Per item, per meal etc.   |
| Cinema                         | Per ticket  |
| Hotels                         | Guest Days or Room Days   |
| Bank or Financial Institutions | Per transaction, per statement, per application, per project etc. |
| Educational Institutes         | Per course, per student, per batch, per lecture etc.              |
| IT & ITES                      | Cost per project, per module etc.                                 |
| Insurance                      | Per policy, per claim etc.  |



CHAPTER 9

## **PROCESS & OPERATION COSTING**

1. Process Costing is a method of costing used in industries where the material has to pass through two or more processes for being converted into a final product. It is defined as "a method of Cost Accounting whereby costs are charged to processes or operations and averaged over units produced". A separate account for each process is opened and all expenditure pertaining to a process is charged to that process account. Such type of costing method is useful in the manufacturing of products like steel, paper, medicines, soaps, chemicals, rubber, vegetable oil, paints, varnish etc. where the production process is continuous and the output of one process becomes the input of the following process till completion.

#### 2. **Normal Process Account:**

- Step 1: Prepare separate process account by debiting all direct cost and apportionable and recoverable expenses.
- Step 2: Credited process account with normal loss units and their scrap value.
- **Step 3:** Calculate normal cost per unit (NCPU)
  - Total Cost Sale Vale of Normal Loss Units Total Units - Normal Loss Units
- Step 4: Valued actual output and abnormal gain or loss as per NCPU.
- Step 5: Prepare normal loss, abnormal loss, abnormal gain and profit and loss A/C.

## Proforma Process Account

| Particulars               | Units | ₹   | Particulars Particulars Particulars | Units | ₹   |
|---------------------------|-------|-----|-------------------------------------|-------|-----|
| To Process A/C (Previous) | XXX   | XXX | By Normal loss                      | XXX   | XXX |
| To Units introduced       | XXX   | XXX |                                     |       |     |
| To Sundry materials       |       | XXX | By Process A/C (Next) or            | XXX   | XXX |
| To Labour                 |       | XXX | Finished goods A/C or               |       |     |
| To Direct expenses        |       | XXX | Costing P/L A/C                     |       |     |
| To Indirect expenses      |       | XXX |                                     |       |     |
| To Abnormal Gain (If any) |       | XXX | By Abnormal loss (If any)           | XXX   | XXX |
|                           | XXX   | XXX | ]                                   | XXX   | XXX |

#### Proforma Normal Loss Account (Expected or Standard Loss/Kabadi wale ka A/c)

| Particulars        | Units | ₹   | <b>Particulars</b>   | Units | ₹   |
|--------------------|-------|-----|----------------------|-------|-----|
| To Process I A/C   | XXX   | XXX | By Cash A/C:         |       |     |
| To Process II A/C  | XXX   | XXX | Process I            | XXX   | XXX |
| To Process III A/C | XXX   | XXX | Process II           | XXX   | XXX |
|                    |       |     | Process III          | XXX   | XXX |
|                    |       |     | By Abnormal gain A/C | XXX   | XXX |
|                    | XXX   | XXX |                      | XXX   | XXX |

## Proforma Abnormal Loss Account (Unexpected Loss/Good units bani kabad)

| <b>Particulars</b> | Units | ₹   | <b>Particulars</b> | Units | ₹   |
|--------------------|-------|-----|--------------------|-------|-----|
| To Process I A/C   | XXX   | XXX | By Cash A/C:       |       |     |
| To Process II A/C  | XXX   | XXX | Process I          | XXX   | XXX |
|                    |       |     | Process II         | XXX   | XXX |
|                    |       |     |                    |       |     |
|                    |       |     | By Costing P/L A/C |       | XXX |
|                    | XXX   | XXX |                    | XXX   | XXX |

## Abnormal Gain Account (Unexpected Gain/ Kabad bana Good units)

| <b>Particulars</b> | Units | ₹   | <b>Particulars</b> | Units | ₹   |
|--------------------|-------|-----|--------------------|-------|-----|
| To Normal loss A/C | XXX   | XXX | By Process II A/C  | XXX   | XXX |
| ,                  |       |     | ,                  |       |     |
| To Costing P/L A/C |       | XXX |                    |       |     |
|                    | XXX   | XXX |                    | XXX   | XXX |

## Costing Profit And Loss Account

| Particulars  | Units | ₹                 | <b>Particulars</b>                   | Units | ₹          |
|--|-------|-------------------|--------------------------------------|-------|------------|
| To Process III A/C To Selling & Admin exps. To Abnormal loss A/C | XXX   | XXX<br>XXX<br>XXX | By Sales A/C<br>By Abnormal gain A/C | XXX   | XXX<br>XXX |
| To Profit (b.f.)   | XXX   | XXX<br>XXX        |                                      | XXX   | XXX        |

#### 3. Royalty on output or units produced:

Step 1: Debit royalty expense in process account on standard units to be produced.

Step2: Excess or Less payment of royalty expense is shown in Abnormal Gain or Loss account.

Step3: Actual payment of royalty is shown in Royalty A/c.

## 4. Process A/c with By Product:

Step 1: Credit Process A/c by NRV of By Product. (NRV = Sales Value - Selling Expenses - Further Cost)

Step2: Calculate NCPU =  $\frac{Total\ Cost - Sale\ Vale\ of\ Normal\ Loss\ Units - NRV\ of\ By\ Product}{Total\ Units - Normal\ Loss\ Units - By\ Product\ Units}$ 

5. Statement of Profit when process department sells a portion of output in market and transfer balance to next process department:

Situation 1: Process department is not a responsibility centre (Preferred as per ICAI):

- Transfer units to next process on the basis of NCPU
- Transfer units to Costing P/L A/c on the basis of NCPU
- Sale of units and profit are shown in Costing P/L A/c

## PROCESS & OPERATION COSTING



- Transfer units to next process on the basis of NCPU
- Sale of units and profit are shown in Process A/c
- > Transfer profit to Costing P/L A/c
- 6. Input Output Ratio =  $\frac{Input \ of \ Raw \ Materials \ in \ Process \ Department}{Output \ of \ Units \ completed \ from \ Process \ department} \times 100$
- 7. Equivalent Production (Closing WIP Only)

**Equivalent production:** This concept is used in case of WIP units in process.

- **Step 1:** Prepare process account as usual.
- **Step2:** Prepare statement of equivalent production.
- Step 3: Prepare statement of cost.

CHAPTER 9

- **Step 4:** Prepare statement of apportionment of cost or statement of evaluation (in case of abnormal gain or loss).
- **Step 5:** Do complete process account.

### **Proforma Statement of Equivalent Production**

| Particulars                  | Units | Materials Materials |       | Labour |       | Overhead |       |
|------------------------------|-------|---------------------|-------|--------|-------|----------|-------|
| Purticulars                  | Units | %                   | E.U.  | %      | E.U.  | %        | E.U.  |
| Units introduced:            |       |                     |       |        |       |          |       |
| Normal loss                  | XXX   | -                   | -     | -      | -     | -        | -     |
| Units completed              | XXX   | XX                  | XXX   | XX     | XXX   | XX       | XXX   |
| Closing WIP                  | XXX   | XX                  | XXX   | XX     | XXX   | XX       | XXX   |
| Abnormal loss (If any)       | XXX   | XX                  | XXX   | XX     | XXX   | XX       | XXX   |
| Less: Abnormal gain (If any) | (XXX) | XX                  | (XXX) | XX     | (XXX) | XX       | (XXX) |
|                              |       |                     |       |        |       |          |       |
| Total                        | XXX   | -                   | XXX   | -      | XXX   | -        | XXX   |

100%

## If nothing is specified in the question:

% of completion of Abnormal loss units

| > | % of completion of WIP units: |             |
|---|-------------------------------|-------------|
|   | Materials                     | 100%        |
|   | Labour                        | <i>50%</i>  |
|   | Overheads                     | <b>50</b> % |
| > | % of material components      | 100%        |

## Always:

| $\triangleright$ | % of completion of Finished goods                       | 100% |
|------------------|---|------|
|                  | % of completion of Abnormal gain                        | 100% |
|                  | % of completion of Normal loss                          | 0%   |
| $\triangleright$ | % of completion of units received from previous process | 100% |

## Proforma Statement of Cost

| Elements  | Cost                                    | Eq. Units | Cost per unit |  |  |  |
|-----------|---|-----------|---------------|--|--|--|
| Materials | XXX (Net of Scrap of Normal Loss Units) | XXX       | XXX           |  |  |  |
| Labour    | XXX                                     | XXX       | XXX           |  |  |  |
| Overheads | XXX                                     | XXX       | XXX           |  |  |  |
|           | Total Cost Per Unit                     |           |               |  |  |  |

Sale value of scrap of normal loss units is deducted from the cost of materials 1 in case of two materials

## **Proforma Statement of Evaluation**

| Particulars        | Elements  | Equivalent units | Cost per unit | Total (₹) |
|--------------------|-----------|------------------|---------------|-----------|
| 1. Units completed | Materials | XXX              | XXX           | XXX       |
|                    | Labour    | XXX              | XXX           | XXX       |
|                    | Overhead  | XXX              | XXX           | XXX       |
|                    |           |                  |               | XXX       |
|                    |           |                  |               |           |
| 2. Closing WIP     | Materials | XXX              | XXX           | XXX       |
|                    | Labour    | XXX              | XXX           | XXX       |
|                    | Overhead  | XXX              | XXX           | XXX       |
|                    |           |                  |               | XXX       |
|                    |           |                  |               |           |
| 3. Abnormal loss   | Materials | XXX              | XXX           | XXX       |
|                    | Labour    | XXX              | XXX           | XXX       |
|                    | Overheads | XXX              | XXX           | XXX       |
|                    |           |                  |               | XXX       |
|                    |           |                  |               |           |
| 4. Abnormal gain   | Materials | XXX              | XXX           | XXX       |
|                    | Labour    | XXX              | XXX           | XXX       |
|                    | Overheads | XXX              | XXX           | XXX       |
|                    |           |                  |               | XXX       |

- If any item of cost is directly related to completed units then cost of such items should be directly added to valuation of completed units (Like: Packing material cost related to completed units).
- 8. Opening WIP with FIFO method:
- Step 1: Prepare process account as usual.
- **Step2:** Prepare statement of equivalent production
  - First convert opening WIP units into units completed (Show balance work only)
  - Convert current units into balance completed units, closing WIP, normal loss, abnormal loss or abnormal gain
- Step 3: Prepare statement of cost (ignore cost of opening WIP).
- Step 4: Prepare statement of apportionment of cost or statement of evaluation (Add cost of opening WIP directly to value of completed units).
- **Step 5:** Do complete process account.



## Proforma Statement of Equivalent Production (FIFO Method)

| Dantianlana                                     | Unito    | Materials |          | Labour  |          | Overhead |          |
|---|----------|-----------|----------|---------|----------|----------|----------|
| Particulars                                     | Units    | %         | E.U.     | %       | E.U.     | %        | E.U.     |
| Opening units used for:<br>Completed units      | XXX      | XX        | XXX      | XX      | XXX      | XX       | XXX      |
| Current units used for: Balance completed units | XXX      | XX        | XXX      | XX      | XXX      | XX       | XXX      |
| Normal loss                                     | -<br>vvv | XX        | ·<br>vvv | -<br>vv | -<br>VVV | -<br>vv  | -<br>VVV |
| Closing WIP                                     | XXX      |           | XXX      | XX      | XXX      | XX       | XXX      |
| Abnormal loss (If any)                          | XXX      | XX        | XXX      | XX      | XXX      | XX       | XXX      |
| Less: Abnormal gain (If any)                    | (XXX)    | XX        | (XXX)    | XX      | (XXX)    | XX       | (XXX)    |
| Total   | XXX      | -         | XXX      | -       | XXX      | -        | XXX      |

## Proforma Statement of Cost

| Elements  | Cost (Ignore cost of opening WIP)                  | Eq. Units | Cost per unit |
|-----------|--|-----------|---------------|
| Materials | Current Material Cost - Scrap of Normal Loss Units | XXX       | XXX           |
| Labour    | Current Labour Cost                                | XXX       | XXX           |
| Overheads | Current Overheads Cost                             | XXX       | XXX           |
|           | XXX  |           |               |

## **Proforma Statement of Evaluation**

| <b>Particulars</b>       | Elements  | <b>Equivalent units</b> | Cost per unit | Total (₹) |
|--------------------------|-----------|-------------------------|---------------|-----------|
| 1. Units completed       | Materials | XXX                     | XXX           | XXX       |
|                          | Labour    | XXX                     | XXX           | XXX       |
|                          | Overhead  | XXX                     | XXX           | XXX       |
| Add: Cost of Opening WIP |           |                         |               | XXX       |
|                          |           |                         |               | XXX       |
| 2. Closing WIP           | Materials | XXX                     | XXX           | XXX       |
|                          | Labour    | XXX                     | XXX           | XXX       |
|                          | Overhead  | XXX                     | XXX           | XXX       |
|                          |           |                         |               | XXX       |
| 3. Abnormal loss         | Materials | XXX                     | XXX           | XXX       |
|                          | Labour    | XXX                     | XXX           | XXX       |
|                          | Overheads | XXX                     | XXX           | XXX       |
|                          |           |                         |               | XXX       |
| 4. Abnormal gain         | Materials | XXX                     | XXX           | XXX       |
|                          | Labour    | XXX                     | XXX           | XXX       |
|                          | Overheads | XXX                     | XXX           | XXX       |
|                          |           |                         |               | XXX       |

## 9. Opening WIP with Average method:

- **Step 1:** Prepare process account as usual.
- Step2: Prepare statement of equivalent production (considering total work).
- Step 3: Prepare statement of cost (add cost of opening WIP to current period cost element wise).
- Step 4: Prepare statement of apportionment of cost or statement of evaluation.
- **Step 5:** Do complete process account.

## Proforma Statement of Equivalent Production (Average Method)

| Particulars                  | Units | Materials |       | Labour |       | Overhead |       |
|------------------------------|-------|-----------|-------|--------|-------|----------|-------|
| Furticulars                  | Units | %         | E.U.  | %      | E.U.  | %        | E.U.  |
| Normal loss                  | XXX   | -         | -     | -      | -     | -        | -     |
| Units completed              | XXX   | XX        | XXX   | XX     | XXX   | XX       | XXX   |
| Closing WIP                  | XXX   | XX        | XXX   | XX     | XXX   | XX       | XXX   |
| Abnormal loss (If any)       | XXX   | XX        | XXX   | XX     | XXX   | XX       | XXX   |
| Less: Abnormal gain (If any) | (XXX) | XX        | (XXX) | XX     | (XXX) | XX       | (XXX) |
| Total                        | XXX   | -         | XXX   | -      | XXX   | -        | XXX   |

## Proforma Statement of Cost

| Elements                        | Total Cost (Current Cost + Cost of opening WIP) | Eq. Units | Cost per unit |
|---------------------------------|---|-----------|---------------|
| Materials                       | Current + Opening - Scrap of Normal Loss Units  | XXX       | XXX           |
| Labour                          | Current + Opening                               | XXX       | XXX           |
| Overheads Current + Opening XXX |   | XXX       |               |
| Total Cost Per Unit             |   |           | XXX           |

## **Proforma Statement of Evaluation**

| Particulars        | Elements  | Equivalent units | Cost per unit | Total (₹) |
|--------------------|-----------|------------------|---------------|-----------|
| 1. Units completed | Materials | XXX              | XXX           | XXX       |
|                    | Labour    | XXX              | XXX           | XXX       |
|                    | Overhead  | XXX              | XXX           | XXX       |
|                    |           |                  |               | XXX       |
| 2. Closing WIP     | Materials | XXX              | XXX           | XXX       |
| 3                  | Labour    | XXX              | XXX           | XXX       |
|                    | Overhead  | XXX              | XXX           | XXX       |
|                    |           |                  |               | XXX       |
| 3. Abnormal loss   | Materials | XXX              | XXX           | XXX       |
| or marios          | Labour    | XXX              | XXX           | XXX       |
|                    | Overheads | XXX              | XXX           | XXX       |
|                    | overneuas | 7444             | ****          | XXX       |
|                    |           |                  |               |           |
| 4. Abnormal gain   | Materials | XXX              | XXX           | XXX       |
|                    | Labour    | XXX              | XXX           | XXX       |
|                    | Overheads | XXX              | XXX           | XXX       |
|                    |           |                  |               | XXX       |

*Note:* If nothing is specified in respect of method of valuation then:

If % of opening WIP is given
: Use FIFO Method

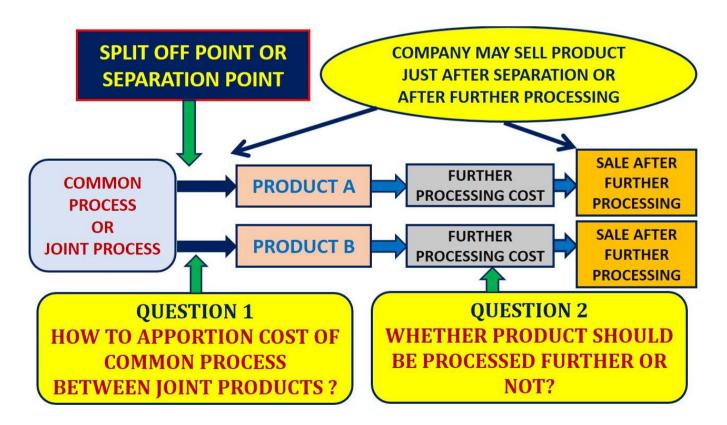
▶ If % of opening WIP is not given : Use Weighted Average Method

## 10. Inter Process Profit:

- Process department transfers its output to next process department on cost plus profit basis.
- Profit earned by each process department is used to evaluate performance of concern process department

## **JOINT PRODUCTS & BY PRODUCTS**

- 1. 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. For example, in the oil industry, gasoline, fuel oil, lubricants, paraffin, coal tar, asphalt and kerosene are all produced from crude petroleum. These are known as joint products.
- 2. By-Products: These are defined as "products recovered from material discarded in a main process, or from the production of some major products, where the material value is to be considered at the time of severance from the main product." Thus by-products emerge as a result of processing operation of another product or they are produced from the scrap or waste of materials of a process. In short a by-product is a secondary or subsidiary product which emanates as a result of manufacture of the main product. For example glycerin obtained in the manufacture of soap.
- 3. Co Products: Co-products may be defined as two or more products which are contemporary but do not emerge necessarily from the same material in the same process. For instance, wheat and gram produced in two separate farms with separate processing of cultivation are the co-products.
- 4. Understanding of Chapter:



- 5. Methods of apportionment of joint cost:
- Physical unit method: Apportionment of joint cost on the basis of physical units or output at split off point.

# Statement Showing Apportionment of Joint Cost (Physical Units Method)

| Particulars Particulars                    | Product A | Product B |
|--|-----------|-----------|
| Physical units or output at split of point | XXX       | XXX       |
| Joint Cost in proportion of Physical units | XXX       | XXX       |

Average unit cost method: Apportionment of joint cost on the basis of average cost per unit.

Step 1: Calculate Average unit cost

Average unit cost =  $\frac{Total\ Joint\ Cost}{Total\ Units\ at\ Separation\ Point}$ 

Step 2: Apportion joint cost on the basis of average unit cost

Market value at separation point method: Apportionment of joint cost on the basis of market value at separation point net of selling expenses at split off point (if any) of total output of products.

# Statement Showing Apportionment of Joint Cost (Market Value at Separation Point Method)

| Particulars Particulars  | Product A    | Product B    |
|--|--------------|--------------|
| Market value at separation point of total output at separation point  Less: Selling expenses at separation point | XXX<br>(XXX) | XXX<br>(XXX) |
| Net Market value at separation point   | XXX          | XXX          |
| Joint Cost in proportion of Net MV at separation point   | XXX          | XXX          |

Market value after further processing method: Apportionment of joint cost on the basis of market value after further processing of total output of products.

# Statement Showing Apportionment of Joint Cost (Market Value After Further Processing Method)

| Particulars Particulars  | Product A | Product B |
|--|-----------|-----------|
| Market value after further processing of total output after further processing | XXX       | XXX       |
| Joint Cost in proportion of MV after further processing                        | XXX       | XXX       |

## CHAPTER 10 JOINT PRODUCTS & BY PRODUCTS

- Net realisable value (NRV) method/ NRV at split off point method: Apportionment of joint cost on the basis of net realisable value at split off point of total output of products.
  - NRV = Sale value after further processing further processing cost selling expenses after further processing if any

## Statement Showing Apportionment of Joint Cost (NRV Method)

| Particulars  | Product A             | Product B       |
|--|-----------------------|-----------------|
| Market value after further processing of total output after further processing  Less: Further processing cost  Less: Selling expenses after further processing | XXX<br>(XXX)<br>(XXX) | XXX (XXX) (XXX) |
| Net Realizable Value   | XXX                   | XXX             |
| Joint Cost in proportion of NRV  | XXX                   | XXX             |

**Contribution margin method:** 

Step 1: Apportionment of variable joint cost on the basis of physical units.

Step 2: Apportionment of fixed joint cost on the basis of contribution.

*Note: Fixed cost will not be apportioned to product having zero or negative contribution.* 

# Statement Showing Apportionment of Joint Cost (Contribution Margin Method)

| Particulars Particulars                                   | Product A    | Product B    |
|---|--------------|--------------|
| Physical units or output                                  | XXX          | XXX          |
| Variable Joint Cost in proportion of Physical units       | XXX          | XXX          |
| Market value of total output  Less: Variable joint cost   | XXX<br>(XXX) | XXX<br>(XXX) |
| Contribution  | XXX          | XXX          |
| Fixed Joint Cost in proportion of Positive contribution   | XXX          | XXX          |
| Total Joint Cost (Variable joint Cost + Fixed Joint Cost) | XXX          | XXX          |

#### > Reverse cost method:

# Statement Showing Apportionment of Joint Cost (Reverse Cost Method)

| Particulars Particulars   | Product A | Product B |
|---|-----------|-----------|
| Sale value after further processing of total output after further | XXX       | XXX       |
| processing  |           |           |
| Less: Profit  | (XXX)     | (XXX)     |
| Less: Selling expenses after further processing                   | (XXX)     | (XXX)     |
| Less: Further cost  | (XXX)     | (XXX)     |
| Joint Cost  | XXX       | XXX       |

Note: If total joint cost mismatched with apportioned joint cost then apportion actual joint cost in proportion of apportioned mismatched joint cost.

Constant gross margin method:

Step 1: First calculate constant percentage of profit:

Percentage of Profit =  $\frac{Total\ Profit}{Total\ Sales} \times 100$ 

Step 2: Use reverse cost method to find out joint cost of each product.

6. Further Processing Decision: Decision in respect of further processing of any product

Incremental Revenue (IR) = Sale value of total output after further processing - Sale

value of total output at separation Point

Incremental Cost (IC) = Further processing cost + Selling expenses after further

processing - Selling expenses at split off point

| Situation  | Further Processing Decision |  |
|------------|-----------------------------|--|
| 1. IR > IC | Yes                         |  |
| 2. IR = IC | Indifferent                 |  |
| 3. IR < IC | No                          |  |

#### 7. Treatment of by product:

Situation 1: By product has commercial use: treat it as joint product.

#### How to trace:

- When joint cost is also apportioned to by-product
- > When By-product also earns profit

Situation 2: By product don't have commercial use:

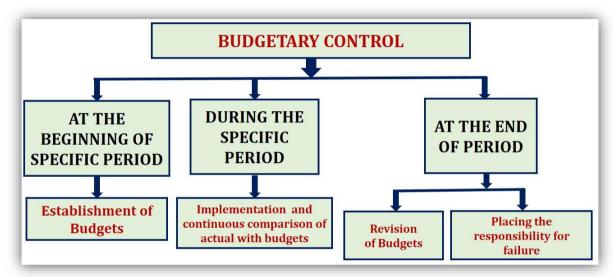
- **Step 1:** Deduct sale value or NRV of by-product from the joint cost.
- Step 2: Apportion net joint cost among remaining main products.



CHAPTER 11

#### **BUDGETS & BUDGETARY CONTROL**

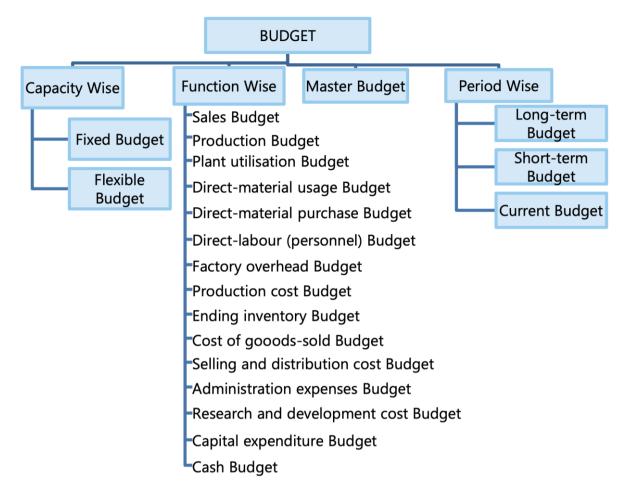
- 1. Budget: A budget is an instrument of management used as an aid in the planning, programming and control of business activity. The Chartered Institute of Management Accountants (CIMA) UK defines budget as "A financial and/or quantitative statement, prepared and approved prior to a defined period of time of the policy to be pursued during that period for the purpose of attaining a given objective. It may include income, expenditure and employment of capital" The budget is a blue- print of the projected plan of action expressed in quantitative terms for a specified period of time.
- 2. Budgetary Control: It is the system of management control and accounting in which all the operations are forecasted and planned in advance to the extent possible and the actual results compared with the forecasted and planned results.



3. Difference between Fixed and Flexible budget:

| S.N. | Fixed Budget  | Flexible Budget  |
|------|---|--|
| 1    | It does not change with actual volume of activity achieved. Thus it is rigid.   | It can be re-casted on the basis of activity level to be achieved. Thus it is not rigid.   |
| 2    | It operates on one level of activity and under one set of conditions.   | It consists of various budgets for different level of activity.  |
| 3    | If the budgeted and actual activity levels differ significantly, then cost ascertainment and price fixation do not give a correct picture.                  | It facilitates the cost ascertainment and price fixation at different levels of activity.  |
| 4    | If the budgeted and actual activity levels differ significantly, then the aspects like cost ascertainment and price fixation do not give a correct picture. | Flexible budgeting at different levels of activity facilitates the ascertainment of cost, fixation of selling price and tendering of quotations. |
| 5    | Comparisons of actual and budgeted targets are meaningless particularly when there is difference between two levels.  | It provided meaningful basis of comparison of actual and budgeted targets.   |

#### 4. Types of Budget:



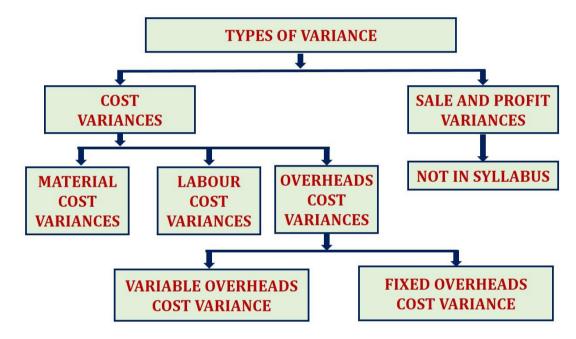
#### 5. Zero Based Budgeting (ZBB):

- > Zero-based Budgeting (ZBB) is defined as a method of budgeting which requires each cost element to be specifically justified, though the activities to which the budget relates are not being undertaken for the first time. The cost of each activity has to be justified and without justification, the budget allowance is zero.
- > ZBB is an activity based budgeting system where budgets are prepared for each activities rather than functional department.
- In case of corporate entities, ZBB is best suited for discretionary costs like research and development cost, training programmes, advertisement etc.
- 6. Performance Budgeting (PB): Performance budgeting requires fixing of the responsibility of each executive in organisation and the continuous appraisal of his performance. It is, therefore, considered to be synonymous with responsibility accounting. A performance budget is one which presents the purposes and objectives for which funds are required.
- 7. Variable Cost Per Unit =  $\frac{\triangle in \ Cost}{\triangle in \ Units}$
- 8. Fixed Cost = Total Cost Variable Cost

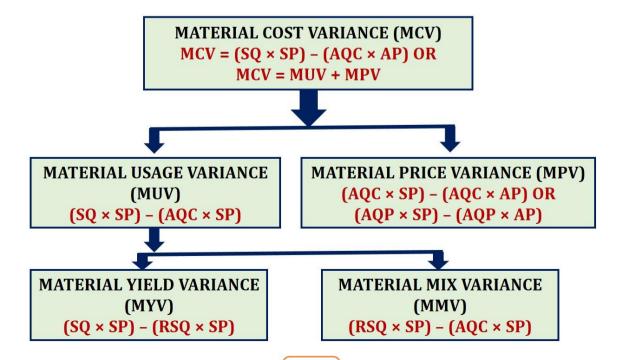


#### STANDARD COSTING

- 1. Standard Costing: Standard costing is a method of cost and management accounting which starts with setting of standards and ends with reporting of variances to management for taking corrective actions. The Official Terminology of CIMA, London defines standard costing as "Control technique that reports variances by comparing actual costs to pre-set standards so facilitating action through management by exception."
- 2. Cost Variance: Difference between actual cost and standard cost to produce actual output.
- 3. Types of Variance:



4. Material Variances:



#### Here,

SQ (Standard Quantity): Standard quantity of raw material consumption to produce actual output.

AQP (Actual Quantity Purchased): Actual quantity of raw materials purchased.

AQC (Actual Quantity Consumed): Actual quantity of raw materials consumed to produce actual output.

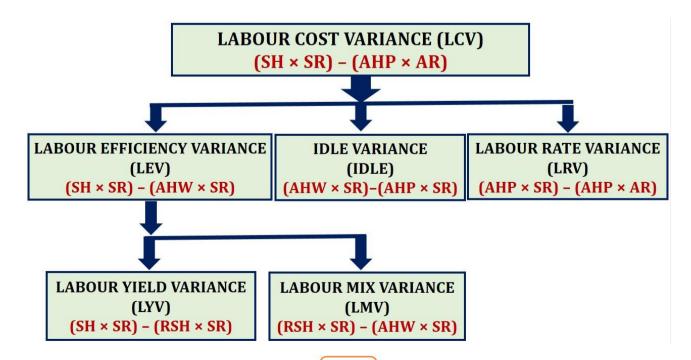
RSQ (Revised Standard Quantity): Actual quantity of raw materials consumed in standard proportion.

SP (Standard Price): Standard purchase price of raw materials.

AP (Actual Price): Actual purchase price of raw materials.

#### 5. Labour Variances:

(Based on purchase)



#### CHAPTER 12 STANDARD COSTING



(b) Labour Efficiency Variance = 
$$(SH \times SR) - (AHW \times SR)$$
 or  $LYV + LMV$ 

(c) Labour Yield Variance = 
$$(SH \times SR) - (RSH \times SR)$$
 or  $LEV - LMV$ 

(d) Labour Mix/Gang Variance = 
$$(RSH \times SR) - (AHW \times SR)$$
 or  $LEV - LYV$ 

(e) Labour Idle Variance = 
$$(AHW \times SR) - (AHP \times SR)$$
 or  $LCV - LEV - LRV$ 

(f) Labour Rate Variance = 
$$(AHP \times SR) - (AHP \times AR)$$
 or  $LCV - LEV - Idle$ 

Here,

SH (Standard Hours): Standard hours to produce actual output.

AHP (Actual Hour Paid): Actual labour hours paid.

AHW (Actual Hours Worked): Actual labour hours worked to produce actual output.

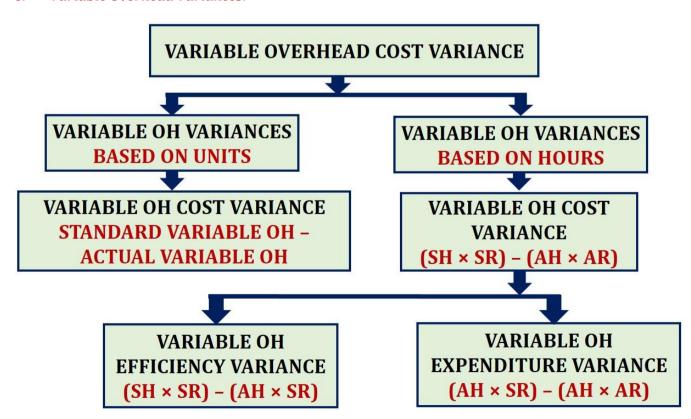
AHW = AHP (actual hours paid) - Abnormal idle time hours

RSH (Revised Standard Hours): Actual labour hours worked in standard proportion.

SR (Standard Rate): Standard wage rate.

AR (Actual Rate): Actual wage rate.

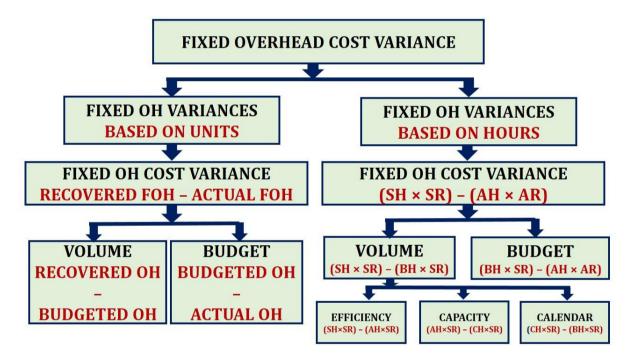
#### 6. Variable Overhead Variances:



- (a) Variable OH Cost Variance = Standard Variable OH Actual Variable OH
- We cannot calculate Variable OH Efficiency variance and Variable OH Expenditure variance on the basis of units.

#### Method 2: Variable Overhead Variance based on hours:

- (a) Variable OH Cost Variance =  $(SH \times SR) (AH \times AR)$
- (b) Variable OH Efficiency Variance =  $(SH \times SR) (AH \times SR)$
- (c) Variable OH Expenditure/Budget Variance =  $(AH \times SR) (AH \times AR)$
- 6. Fixed Overhead Variances:



#### Method 1: Fixed Overhead Variance based on units:

- (a) Fixed OH Cost Variance = Absorbed/Recovered Fixed OH Actual Fixed OH
- (b) Fixed OH Expenditure Variance = Budgeted Fixed OH Actual Fixed OH
- (c) Fixed OH Volume Variance = Absorbed/Recovered Fixed OH Budgeted Fixed OH
- We cannot calculate Fixed OH Efficiency variance, Fixed OH Capacity variance and Fixed OH Calendar variance on the basis of units.
- Here Fixed overheads are recovered on the basis of units.

#### Method 2: Fixed Overhead Variance based on hours:

- (a) Fixed OH Cost Variance =  $(SH \times SR) (AH \times AR)$
- (b) Fixed OH Expenditure/Budget Variance =  $(BH \times SR) (AH \times AR)$
- (c) Fixed OH Volume Variance =  $(SH \times SR) (BH \times SR)$
- (d) Fixed OH Efficiency Variance =  $(SH \times SR) (AH \times SR)$
- (e) Fixed OH Capacity Variance =  $(AH \times SR) (CH \times SR)$
- (f) Fixed OH Calendar Variance =  $(CH \times SR) (BH \times SR)$

Here,

SH (Standard Hours): Standard hours to produce actual output.

AH (Actual Hours): Actual hours to produce actual output.

BH (Budgeted Hours): Budgeted hours or Estimated hours.

CH (Calendar Hours): Standard working hours for actual working days.

SR (Standard Rate): Standard rate or recovery rate of Fixed OH on the basis of time.

**SR** = Budgeted Fixed OH ÷ Budgeted Hours

AR (Actual Rate): Actual wage rate.

( $SH \times SR$ ): Absorbed or recovered fixed overheads.

(BH × SR): Budgeted fixed overheads.

(AH × AR): Actual fixed overheads.

#### 7. Various Budget Ratios:

- (a) Efficiency Ratio =  $\frac{\text{Standard Hours}}{\text{Actual Hours}} \times 100$
- (b) Activity Ratio =  $\frac{\text{Standard Hours}}{\text{Budgeted Hours}} \times 100$
- (c) Calendar Ratio =  $\frac{\text{Available Working Days}}{\text{Budgeted Working Days}} \times 100$
- (d) Standard Capacity Usage Ratio =  $\frac{\text{Budgeted Hours}}{\text{Maximum Possible Hours in Budget}} \times 100$
- (e) Actual Capacity Usage Ratio =  $\frac{\text{Actual Hours Worked}}{\text{Max. Possible working Hours in a Period}} \times 100$
- (f) Actual Usage of Budgeted Capacity Ratio =  $\frac{\text{Actual Working Hours}}{\text{Budgeted Hours}} \times 100$

#### **MARGINAL COSTING**

- 1. Marginal Cost Equation: C = F + P
- 2. Contribution: It is the balance amount of sales after deduction of variable cost which is used to recover fixed cost and provide profit.

Contribution = Sales - Variable cost

3. Contribution ratio or Profit Volume ratio (PV ratio):

**Profit volume ratio** =  $\frac{\text{Contribution}}{\text{Sales}} \times 100$ 

**Profit volume ratio** = 100 - Variable cost ratio

**Profit volume ratio** =  $\frac{\text{Fixed Cost}}{\text{BEP Sales}} \times 100$ 

**Profit volume ratio** =  $\frac{\text{Profit}}{\text{MOS Sales}} \times 100$ 

- 4. Break Even Point (BEP):
  - **Level of sales at which company is in situation of no profit and no loss**
  - Level of sales at which contribution and fixed cost are same

BEP Sales = Variable cost + Fixed cost + Profit

**BEP Sales in units** =  $\frac{\text{Fixed Cost}}{\text{Contribution Per Unit}}$ 

BEP Sales in units = BEP Sales in amount ÷ Sale price per unit

BEP Sales in units = Total Sales in units - MOS Sales in units

BEP Sales (in amount) =  $\frac{\text{Fixed Cost}}{\text{PV Ratio}} \times 100$ 

BEP Sales (in amount) = BEP Sales in units × Sale price per unit

BEP Sales (in amount) = Total Sales in amount – MOS Sales in amount

- 5. Margin of Safety (MOS):
  - Level of sales over and above BEP sales
  - Level of sales at which contribution and profit are same

MOS Sales = Variable cost + Fixed cost + Profit

| MOS Sales in units  | _ | Profit                       |
|---------------------|---|------------------------------|
| MOS Sules III units | _ | <b>Contribution Per Unit</b> |

$$MOS Sales (in amount) = \frac{Profit}{PV Ratio}$$

#### 6. Profit Planning:

Target sales in units = 
$$\frac{\text{Fixed Cost+Profit}}{\text{Contribution Per Unit}}$$

Target sales in amount = 
$$\frac{\text{Fixed Cost} + \text{Profit}}{\text{PV Ratio}}$$

#### 7. PV Ratio and Variable Cost Ratio under two periods data:

Variable Cost ratio = 
$$\frac{\text{Change in Total Cost}}{\text{Change in Sales}} \times 100$$

**Profit Volume ratio** = 
$$\frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100$$

Variable cost per unit = 
$$\frac{\text{Change in Total Cost}}{\text{Change in Sales Units}}$$

Contribution per unit = 
$$\frac{\text{Change in Profit}}{\text{Change in Sales Units}}$$

#### 8. Sales Mix or Multiple products:

- ➤ Use Composite/Average contribution per unit or PV ratio
- **▶** Use Composite/Average contribution per unit or PV ratio to solve the problems

#### 9. Merger of Plants:

Step 1: Calculate total Sales, Variable Cost, Fixed Cost and P/V Ratio of merged plant at 100% Capacity.

**Step 2:** Solve the problem with P/V Ratio calculated in Step 1.

#### CHAPTER 13 MARGINAL COSTING

#### 10. Key Factor or Limiting Factor:

- Anything which limits the activity of an entity
- The factor is a key to determine the level of sale and production, thus it is also known as key factor.

#### Example of key factor or limiting factor:

- Men (employees),
- Materials (raw material or supplies),
- Machine (capacity),
- Money (availability of fund or budget)
- > Demand for the product etc.

#### Step 1: Calculate Contribution per key factor unit.

- Step 2: Give rank to all products on the basis of contribution per key factor unit.
- Step 3: Prepare statement of optimum product mix on the basis of rank in step 2.
- Step 4: Prepare statement showing optimum contribution or profit.
- 11. Shut Down Point:

Shut down point < Avoidable Fixed Cost – Reopening Cost
Contribution per unit or PV Ratio

12. Indifference Point or Cost Indifference Point or Cost BEP:

Indifference point =  $\frac{\text{Difference in Fixed Cost}}{\text{Difference in Variable Cost Per unit}}$ 

Situation Expected activity < Indifference point Expected activity = Indifference point Suggestion
Select option having lower fixed cost
Select any option

Expected activity > Indifference point Select option having lower variable cost per unit

#### 13. Income Statement Under Absorption Costing:

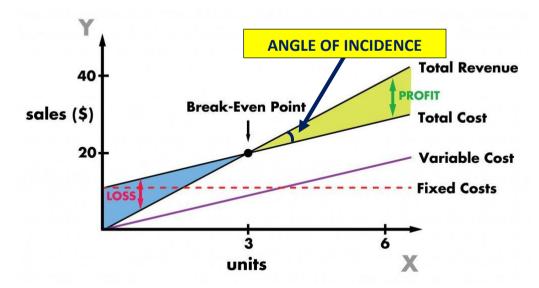
| Particulars Particulars  | ₹     |
|--|-------|
| Sales  | XXX   |
| Production costs:  |       |
| Variable (Actual)  | XXX   |
| Fixed (Recovered)  | XXX   |
| Cost of Production   | XXX   |
| Add: Opening stock (Opening Units @ standard rate of cost of production) | XXX   |
| Less: Closing stock (Closing Units @ current rate of cost of production) | (XXX) |
| Cost of Goods Sold   | XXX   |
| Add: Under absorbed fixed production overhead (If any)                   | XXX   |

| Less: Over absorbed fixed production overhead (If any) | (XXX) |
|--|-------|
| Add: Variable administrative and selling costs         | XXX   |
| Add: Fixed administrative and selling costs            | XXX   |
|  |       |
| Total Cost   | XXX   |
| Profit (Sales – Total Cost)                            | XXX   |

#### 14. Income Statement Under Marginal Costing:

| Particulars Particulars   | ₹     |
|---|-------|
| Sales   | XXX   |
| Production costs:   |       |
| Variable (Actual)   | XXX   |
| Variable Cost of Production   | XXX   |
| Add: Opening stock (Opening Units @ standard rate of variable COP)                | XXX   |
| Less: Closing stock (Closing Units @ current rate of variable cost of production) | (XXX) |
| Variable Cost of Goods Sold   | XXX   |
| Add: Variable administrative and selling costs                                    | XXX   |
| Variable Cost of Sales  | XXX   |
| Contribution (Sales – Variable Cost of sales)                                     | XXX   |
| Less: Fixed cost (all)  | (XXX) |
| Profit (Contribution – Fixed Cost)  | XXX   |

# 15. BEP and Angle of Incidence Graph:



# **COST ACCOUNTING SYSTEM**

1. Cost Accounting System:



- 2. Integrated Accounting System: in this system only one set of books of account is maintained to records transactions related to cost account and financial account.
- 3. Accounting in Integrated System:

Store Ledger Control A/C

| Particulars Particulars Particulars | ₹             | Particulars            | ₹             |
|-------------------------------------|---------------|------------------------|---------------|
| To Balance b/d                      | Opening Stock | By Purchase Return A/c | Return        |
| To Cash/Bank/Supplier A/c           | Purchase      | By WIP A/c             | Direct Mat.   |
| To WIP A/c                          | Return        | By Production OH A/c   | Indirect Mat. |
|                                     |               | By Production OH A/c   | Normal Loss   |
|                                     |               | By Costing P/L A/c     | Abnormal Loss |
|                                     |               | By Balance c/d         | Closing Stock |
|                                     | -             |                        | -             |

Wages Control A/C

| By Production OH A/c In By Production OH A/c N | <b>Particulars</b> | ₹          | Particulars Particulars | ₹  |
|--|--------------------|------------|-------------------------|--|
| by costing 1/LA/c Abi                          | To Bank A/c        | Wages Paid | By Production OH A/c    | Direct Labour<br>Ind. Labour<br>Normal Idle<br>Abnormal Idle |

Production Overhead Control A/C

| <b>Particulars</b>  | ₹           | Particulars Particulars | ₹         |
|---------------------|-------------|-------------------------|-----------|
| To Bank A/c         | OH Incurred | By WIP A/c              | Recovered |
| To Depreciation A/c | Dep.        | By Costing P/L A/c      | Under     |
| To Store A/c        | Ind. M + NL | or                      | Recovery  |
| To Wages A/c        | Ind. L + NL | By Balance c/d          |           |
|                     | -           |                         | -         |

Work-In-Progress A/C

| <b>Particulars</b>   | ₹           | Particulars           | ₹           |
|----------------------|-------------|-----------------------|-------------|
| To Balance b/d       | Opening WIP | By Finished Goods A/c | Completed   |
| To Stores A/c        | Direct Mat. | By Balance c/d        | Closing WIP |
| To Wages A/c         | Direct Lab. |                       |             |
| To Production OH A/c | Recovered   |                       |             |
|                      | -           |                       | -           |

Administration Overhead A/C

| <b>Particulars</b> | ₹           | <b>Particulars</b>  | ₹  |
|--------------------|-------------|---|--|
| To Bank A/c        | OH Incurred | By Finished Goods A/c By Cost of Sales A/c By Costing P/L A/c | Prod. Related<br>General<br>Under Recovery |
|                    | -           |   | -  |

Finished Goods Control A/C

| Particulars Particulars Particulars | ₹            | <b>Particulars</b>   | ₹          |
|-------------------------------------|--------------|----------------------|------------|
| To Balance c/d                      | Opening FG   | By Cost of sales A/c | COGS       |
| To Work-in-process A/c              | Completed    | By Balance c/d       | Closing FG |
| To Administration OH A/c            | Prod Related |                      |            |
|                                     | -            |                      | -          |

Selling and Distribution Overhead A/C

| coming the bish is about 6 ver house 17 c |             |   |                             |
|---|-------------|---|-----------------------------|
| <b>Particulars</b>                        | ₹           | <b>Particulars</b>                      | ₹                           |
| To Bank A/c                               | OH Incurred | By Cost of Sales A/c By Costing P/L A/c | Recovered<br>Under Recovery |
|   | -           |   | -                           |

Cost of Sales A/C

| <b>Particulars</b>       | ₹       | Particulars  | ₹     |
|--------------------------|---------|--------------|-------|
| To Finished Good A/c     | COGS    | By Sales A/c | Sales |
| To Administration OH A/c | General |              |       |
| To Selling OH A/c        | S & D   |              |       |
| To Costing P/L A/c       | Profit  |              |       |
|                          | -       |              | -     |

Costing Profit & Loss A/C

| Particulars              | ₹              | Particulars               | ₹             |  |
|--------------------------|----------------|---------------------------|---------------|--|
| To Stores A/c            | Abnormal Loss  | By Cost of Sales A/c      | Profit        |  |
| To Wages A/c             | Abnormal Loss  | By Abnormal Gain and Over | Abnormal Gain |  |
| To Production OH A/c     | Under Recovery | Recovery                  |               |  |
| To Administration OH A/c | Under Recovery | _                         |               |  |
| To Selling OH A/c        | Under Recovery |                           |               |  |
| To Net Profit            | Net Profit     |                           |               |  |
|                          | -              |                           | -             |  |

- 4. Non Integrated Accounting System: in this system two sets of books of accounts are maintained to records transactions related to cost account and financial account.
- 5. Accounting in Non-integrated System:
- In case of non-integrated accounting system cost records only recognize nominal account (material cost, labour cost, overheads etc.)

- For all transactions related to real account (bank, cash, assets etc.) and personal account (debtors, creditors, capital etc.) Cost record use a representative account viz.:
  - > Cost Ledger Control A/C (CLC) or
  - Nominal Ledger Control A/C (NLC) or
  - General Ledger Adjustment A/C (GLA)

Store Ledger Control A/C

| Particulars Particulars | ₹             | Particulars Particulars | ₹             |
|-------------------------|---------------|-------------------------|---------------|
| To Balance b/d          | Opening Stock | By CLC                  | Return        |
| To CLC A/c              | Purchase      | By WIP A/c              | Direct Mat.   |
| To WIP A/c              | Return to     | By Production OH A/c    | Indirect Mat. |
|                         | stores        | By Production OH A/c    | Normal Loss   |
|                         |               | By Costing P/L A/c      | Abnormal Loss |
|                         |               | By Balance c/d          | Closing Stock |
|                         | -             |                         | -             |

Wages Control A/C

| <b>Particulars</b> | ₹          | <b>Particulars</b>   | ₹             |
|--------------------|------------|----------------------|---------------|
| To CLC A/c         | Wages Paid | By WIP A/c           | Direct Lab.   |
|                    |            | By Production OH A/c | Indirect Lab. |
|                    |            | By Production OH A/c | Normal Idle   |
|                    |            | By Costing P/L A/c   | Abnormal Idle |
|                    | -          |                      | -             |

Production Overhead Control A/C

| <b>Particulars</b> | ₹           | <b>Particulars</b>    | ₹         |
|--------------------|-------------|-----------------------|-----------|
| To CLC A/c         | OH Incurred | By WIP A/c            | Recovered |
| To Store A/c       | Ind. M + NL | By Costing P/L A/c or | Under     |
| To Wages A/c       | Ind. L + NL | By Balance c/d        | Recovery  |
|                    |             |                       |           |
|                    | -           |                       | -         |

Work-In-Progress A/C

| <b>Particulars</b>   | ₹           | Particulars           | ₹           |
|----------------------|-------------|-----------------------|-------------|
| To Balance b/d       | Opening WIP | By Finished Goods A/c | Completed   |
| To Stores A/c        | Direct Mat. | By Balance c/d        | Closing WIP |
| To Wages A/c         | Direct Lab. |                       |             |
| To Production OH A/c | Recovered   |                       |             |
|                      | •           |                       | -           |

Administration Overhead A/C

| Particulars Particulars | ₹           | Particulars Particulars Particulars     | ₹                         |
|-------------------------|-------------|---|---------------------------|
| To CLC A/c              | OH Incurred | By Finished Goods A/c                   | Prod. Related             |
|                         |             | By Cost of Sales A/c By Costing P/L A/c | General<br>Under Recovery |
|                         | -           |   | -                         |

Finished Goods Control A/C

| <b>Particulars</b>       | ₹            | <b>Particulars</b>   | ₹          |
|--------------------------|--------------|----------------------|------------|
| To Balance c/d           | Opening FG   | By Cost of sales A/c | COGS       |
| To Work-in-process A/c   | Completed    | By Balance c/d       | Closing FG |
| To Administration OH A/c | Prod Related |                      |            |
|                          | -            |                      | -          |

Selling and Distribution Overhead A/C

| 9 = 9 9            |             |                      |                |  |
|--------------------|-------------|----------------------|----------------|--|
| <b>Particulars</b> | ₹           | <b>Particulars</b>   | ₹              |  |
| To CLC A/c         | OH Incurred | By Cost of Sales A/c | Recovered      |  |
|                    |             | By Costing P/L A/c   | Under Recovery |  |
|                    | -           |                      | -              |  |

Cost of Sales A/C

| <b>Particulars</b>       | ₹             | <b>Particulars</b> | ₹     |
|--------------------------|---------------|--------------------|-------|
| To Finished Good A/c     | COGS          | By CLC A/c         | Sales |
| To Administration OH A/c | General       |                    |       |
| To Selling OH A/c        | S & D         |                    |       |
| To Costing P/L A/c       | <b>Profit</b> |                    |       |
|                          | -             |                    | -     |

Costina Profit & Loss A/C

| D                                   | <b>=</b>       | Don't and and             | <b>=</b>      |
|-------------------------------------|----------------|---------------------------|---------------|
| Particulars Particulars Particulars | 7              | Particulars               | 7             |
| To Stores A/c                       | Abnormal Loss  | By Cost of Sales A/c      | Profit        |
| To Wages A/c                        | Abnormal Loss  | By Abnormal Gain and Over | Abnormal Gain |
| To Production OH A/c                | Under Recovery | Recovery                  |               |
| To Administration OH A/c            | Under Recovery |                           |               |
| To Selling OH A/c                   | Under Recovery |                           |               |
| To CLC A/c                          | Net Profit     |                           |               |
|                                     | -              |                           | -             |

Cost Ledger Control A/C

| <b>Particulars</b>   | ₹       | Particulars Particulars | ₹           |
|----------------------|---------|-------------------------|-------------|
| To Stores A/c        | Return  | By Balance b/d          | Opening Bal |
| To Cost of Sales A/c | Sales   | By Stores A/c           | Purchase    |
| To Balance c/d       | Closing | By Wages A/c            | Wages Paid  |
|                      | Balance | By Production OH A/c    | OH Incurred |
|                      |         | By Admin OH A/c         | OH Incurred |
|                      |         | By Selling OH A/c       | OH Incurred |
|                      |         | By Costing P/L A/c      | Net Profit  |
|                      | -       |                         | -           |

#### **Notes:**

- There is no posting in stores ledger for Material transferred between Jobs or Batches.
- Normal loss of material and normal idle time is to be transferred to Production Overheads A/C.
- Administrative overheads is treated as related to production in case of absence of information.
- Shortage in material can be treated as (i) normal loss (preferred), (ii) abnormal loss.
- Inventory audit raw material loss is abnormal loss.
- In case of absence of information solve the problem by using non-integrated method.
- > If question asked to prepare reconciliation and there is no additional item then underover recovery of overhead is carried forward to prepare reconciliation.

# **RECONCILIATION**

- 1. Reconciliation: In case of non-integrated accounting system, we have to reconcile profit between two sets of books of account.
  - Step 1: Prepare financial profit and loss account
  - Step 2: Prepare cost sheet or costing profit and loss account
  - Step 3: Prepare reconciliation statement or memorandum reconciliation account

2. Proforma Reconciliation Statement

|       | Particulars Particulars                                       | Amount | Amount |
|-------|---|--------|--------|
|       | Profit/(Loss) as per Cost Books                               |        | XXX    |
| Add:  | Opening stock overstated or over-valued in cost               | XXX    |        |
| nuu.  | Closing stock understated or under-valued in cost             | XXX    |        |
|       | Depreciation over recovered                                   | XXX    |        |
|       | Factory overheads over recovered                              | XXX    |        |
|       | Administration expenses over recovered                        | XXX    |        |
|       | Selling and distribution overheads over recovered             | XXX    |        |
|       | Interest received or Bank interest credited                   | XXX    |        |
|       | Rent received   | XXX    |        |
|       | Commission received   | XXX    |        |
|       | Dividend received   | XXX    |        |
|       | Stores adjustment (credit in financial book)                  | XXX    |        |
|       | Transfer fees (credit in financial book)                      | XXX    |        |
|       | Profit on sale of fixed assets or investment                  | XXX    |        |
|       | Other abnormal gain   | XXX    |        |
|       | Notional rent, salary, depreciation or interest in cost       | XXX    | XXX    |
|       |   |        |        |
| Less: | Opening stock understated or under-valued in cost             | XXX    |        |
|       | Closing stock overstated or over-valued in cost               | XXX    |        |
|       | Depreciation under recovered                                  | XXX    |        |
|       | Factory overheads under recovered                             | XXX    |        |
|       | Administration expenses under recovered                       | XXX    |        |
|       | Selling and distribution overheads under recovered            | XXX    |        |
|       | Interest paid   | XXX    |        |
|       | Dividend paid   | XXX    |        |
|       | Income tax  | XXX    |        |
|       | Stores adjustment (debit in financial book)                   | XXX    |        |
|       | Bad debts or provision for doubtful debt                      | XXX    |        |
|       | Goodwill written off  | XXX    |        |
|       | Preliminary expenses/under writing commission etc written off | XXX    |        |
|       | Expenses of share transfer office                             | XXX    |        |
|       | Obsolescence loss   | XXX    |        |
|       | Loss on sale of fixed assets or investment                    | XXX    |        |
|       | Other abnormal loss   | XXX    |        |
|       | Fine, penalty, donation etc.                                  | XXX    | (XXX)  |
|       |   |        |        |
|       | Profit/(Loss) as per Financial Books                          |        | XXX    |

#### 3. Reasons of Difference between Cost and Financial Accounts:

#### 1. Items included in the financial accounts but not in cost accounts (purely financial items):

- Expenses and discounts on issue of shares, debentures etc.
- > Other capital losses i.e., loss by fire not covered by insurance etc.
- Losses on the sales of fixed assets and investments
- Profits on the sale of fixed assets and investments
- Fictitious assets written off (Preliminary expenses written off etc.)
- Goodwill written off
- Donations, subscriptions etc.
- Fine, penalties etc.
- Expenses of the company's share transfer office, if any
- > Transfer fee received
- Interest received on bank deposits, loans and investments
- Commission received
- Dividends received
- > Rent received
- **Bad debts, provision for bad debts**
- > Cash discount
- Interest on loans or bank mortgages or debenture etc.
- > Income tax
- Dividend paid
- Transfer to reserve etc.

#### 2. Items included in cost accounts only (notional expenses):

- Charges in lieu of rent where premises are owned (Notional Rent)
- Interest on capital at notional figure though not incurred (Notional Interest)
- Salary for the proprietor at notional figure though not incurred (Notional Salary)
- Notional depreciation on the assets fully depreciated for which book value is nil

#### 3. Items whose treatment is different in the two sets of accounts:

- Difference in methods of valuation of stock
- > Difference in methods of depreciation etc.
- Difference in treatment of overheads (under-over absorption carry forward method)

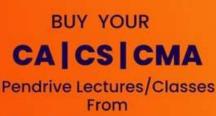
# CAINTER LEGENDS TELEGRAM CHANNEL

Click On Below Image To join our channel



LEGENDSWALE .COM

Where dreams come true







✓ Test Series











# CA|CS|CMA

Why Pick Us?

- **Lowest Price Guarantee**
- **After Sales Support**
- Instant Order Process Time

Make Your Own Combo & Get **Additional Discounts** 



+91 93343 38610



legendswale@gmail.com







































Many More

# LEGENDSWALE .COM

Where dreams come true



# where dreams come true

Video Lecture of Your Favourite Faculty at one place 9334338610,6200409787



SINGHAL JINDAL



BORANA



KANSTIYA



KANDOI











LOWEST

















And Many More CA SURBHI BANSAL

**CA SANJAY SARAF** 

**Our Speciality** 

- Instant Order Process
- Best after Sales Support
- **Lowest Price Guaranteed**
- All Faculties Available
  - Complete Guidance
  - Free & Fast Delivery
- Trusted By 3 Lakhs + Students For more info:

: 9334338610

hatsapp: 62

<u>www.legendswale.com</u>