

**CMA INTER**

**P8 COST**

**ACCOUNTING**

**CONCEPT DECODER**

**Crafted with  
Creativity,  
Designed for  
Success!**



**CA GANESH BHARADWAJ**



# Concept Decoder

Welcome to this 'One of a Kind' Concept Book on Cost Accounting for CMA Inter.

This book is your single source of Costing preparation as it is meticulously compiled to include all concepts, formulas & core theory areas distinctly — to ensure you have everything you need in one place. This will help you navigate through the subject with ease and help you decode all the concepts quickly. Hence the name 'Concept Decoder'

For the first time ever, I have incorporated a 'Doubt Busters" section where common doubts under respective concepts have been identified along with the possible solution to address it with a distinct colour background to boost your score. The best part is that I have personally improvised the presentation & structuring of the entire subject to enhance your learning experience, making it easy for you to crack your exams. This innovative approach will help you collate concepts faster and practice efficiently.

Study smarter, stay ahead, and ace your exams with confidence.  
Remember, a perfect 100/100 in Costing is soon a reality for you.

With Best Wishes,  
CA Ganesh Bharadwaj

## FOREWORD

In 1999-2000 my son and his group of ten friends who were pursuing the Chartered Accountancy course wanted me to coach them in Cost Accounting and Financial Management to which I agreed.

When they passed the Intermediate level of the course, they wanted me to teach Advanced Management Accounting and Strategic Financial Management for the Final level of the course. That was when my journey in coaching CA Intermediate and Final started.

Since then, I took more than 30 batches for Intermediate and Final students in small groups. To my satisfaction, I have a success rate of more than 90%.

I am satisfied that my students have been well placed in the industry. But to my surprise, I found that none of my students were interested in teaching. With this background, I got a call from Ganesh for an appointment. Ganesh was my student in CA Intermediate and Final level for the subjects Costing and Financial Management. He told me his desire to enter the teaching profession and wanted my views. Immediately I gave him the consent and gave some tips from my experience to start coaching students.

In Ganesh, I found an enterprising character and an urge to excel in whatever he does. As a student, he learned some finer points and asked pertinent questions. To his advantage, he has a command over technology and is tech-savvy. He keeps himself abreast of the latest technology and uses tech to his advantage.

Ganesh prepared this study material and wanted my views. A casual glance of this study material suggested the hard work and intelligence put in by him in preparing the study material. He has taken micro care in ensuring that this study material covers all the syllabus of the CMA curriculum. The chapters are arranged in logical order and the concepts are arranged well from basic fundamental level to high professional level. Also, he has grouped all the similar segments together which will help students to revise similar concepts in a short time span. This idea is definitely one of a kind!

With the well-prepared study material and well-motivated Ganesh, I am absolutely certain that the students will benefit from his coaching sessions. If followed sincerely there is no doubt that students can face the CMA exams with courage and determination.

I pray to my Guru to shower his blessings to Ganesh and reward him and his students for the hard work.

Love you all.  
V N Prabakar CA, CMA, CS

## PREFACE

It gives me immense pleasure to present this Concept Decoder Book on Cost Accounting designed specifically for students pursuing the **Intermediate level of CMA** course as per the New Syllabus.

As per the **learning objectives** prescribed on the subject by The Institute of Cost Accountants of India, a student at the Intermediate level is expected to develop a detailed understanding of the **fundamental concepts** associated with **cost** and **costing** under the framework suggested by **Cost Accounting Standards**, attain in-depth knowledge about **element-wise cost ascertainment** and attain adequate knowledge to apply **costing techniques** in **decision management** and appreciate **control** techniques for **cost optimization**.

This book contains a **rich collection** of **concepts, formulas & core theory** areas ranging from Easy to Difficult, that covers **100%** of the syllabus prescribed in **CMA Study Material**. An extensive and in-depth discussion on the concepts along with the background logics will be covered during the lectures thereby making sure that you **need not mug up even a single formula!**

I am forever grateful to my parents (**Shri Seetharaman & Smt Usha Seetharaman**) and my brother **Hari**, for their constant motivation and support in all walks of my life. Many thanks to my friends **Mohit** and **Srinivas** who have stood by me through thick and thin in various phases of my life no matter what. I sincerely thank & appreciate the efforts of my **student Bharathi**, who helped me in editing the contents of this book. Special thanks to **Ranganath and team** for their complete DTP support.

I dedicate this book to my Costing & FM guru **Shri CA V.N. Prabakar Sir** who not only inculcated me with interest in the subject but was also kind enough to write a foreword to this book.

Finally, none of this would have been a reality without the blessings of **Shri Kanchi Maha Periyava** and I bow down to the great lineage of gurus originating from **Shri Adi Shankaracharya**.

I wish the students the very best in all their future endeavors. As the famous verse from the Bhagavad Gita goes - **"Your right is for action alone, never for the results. Do not become the agent of the results of action. May you not have any inclination for inaction."**

So, give your best and leave the rest. Success will automatically follow.

With Best Wishes,  
CA Ganesh Bharadwaj

**"Work Hard in Silence. Let your success make all the noise."**

# SYLLABUS AS PER ICAI STUDY NOTE

| <b>SECTION A: INTRODUCTION TO COST ACCOUNTING</b>            |   | <b>40%</b> |
|--|---|------------|
| <b>Module 1: Introduction to Cost Accounting</b>             |   | <b>5%</b>  |
| 1.1  | Introduction  |            |
| 1.2  | Important Cost Accounting Terms                       |            |
| 1.3  | Elements of Cost                                      |            |
| 1.4  | Classification of Cost                                |            |
| 1.5  | Preparation of Cost Sheet and Ascertainment of Profit |            |
| <b>Module 2: Cost Ascertainment - Elements of Cost</b>       |   | <b>15%</b> |
| 2.1  | Material Costs  |            |
| 2.2  | Employee Costs  |            |
| 2.3  | Direct Expenses                                       |            |
| 2.4  | Overheads   |            |
| <b>Module 3: Cost Accounting Standards (CAS 1 to CAS 24)</b> |   | <b>10%</b> |
| <b>Module 4: Cost Book Keeping</b>                           |   | <b>10%</b> |
| 4.1  | Cost Book - Keeping                                   |            |
| 4.2  | Reconciliation of Costing and Financial Profit        |            |
| 4.3  | Integrated Accounting System                          |            |

| <b>SECTION B: METHODS OF COSTING</b> |   | <b>30%</b> |
|--------------------------------------|---|------------|
| <b>Module 5: Methods of Costing</b>  |   |            |
| 5.1                                  | Job Costing   |            |
| 5.2                                  | Batch Costing   |            |
| 5.3                                  | Contract Costing  |            |
| 5.4                                  | Process Costing - Normal and Abnormal Losses, Equivalent Production, Interprocess Profit, Joint and By Products |            |
| 5.5                                  | Operating Costing - Transport, Hotel and Healthcare   |            |

| <b>SECTION C: COST ACCOUNTING TECHNIQUES</b> |  | <b>30%</b> |
|--|--|------------|
| <b>Module 6: Cost Accounting Techniques</b>  |  |            |
| 6.1  | Marginal Costing                       |            |
| 6.2  | Standard Costing and Variance Analysis |            |
| 6.3  | Budget and Budgetary Control           |            |

# SYLLABUS MAPPING WITH ICAI STUDY NOTE

| CHAPTER No. | CHAPTER NAME  | ICAI STUDY NOTE REFERENCE |
|-------------|---|---------------------------|
| 1           | Basic Concepts  | NA                        |
| 2           | Preparation Of Cost Sheet And Ascertainment Of Profit | 1.5                       |
| 3           | Direct Expenses                                       | 2.3                       |
| 4           | Overheads   | 2.4                       |
| 5           | Cost Book Keeping                                     | Module 4 (Full)           |
| 6           | Job Costing   | 5.1                       |
| 7           | Batch Costing   | 5.2                       |
| 8           | Material Costs  | 2.1                       |
| 9           | Employee Costs  | 2.2                       |
| 10          | Process Costing                                       | 5.4 (Upto 5.4.4)          |
| 11          | Joint & By-Products                                   | 5.4 (From 5.4.4)          |
| 12          | Contract Costing                                      | 5.3                       |
| 13          | Operating Costing                                     | 5.5                       |
| 14          | Marginal Costing                                      | 6.1                       |
| 15          | Standard Costing and Variance Analysis                | 6.2                       |
| 16          | Budget & Budgetary Control                            | 6.3                       |
| 17          | Cost Accounting Standards                             | Module 3 (Full)           |
| 18          | Theories  | 1.1 - 1.4                 |

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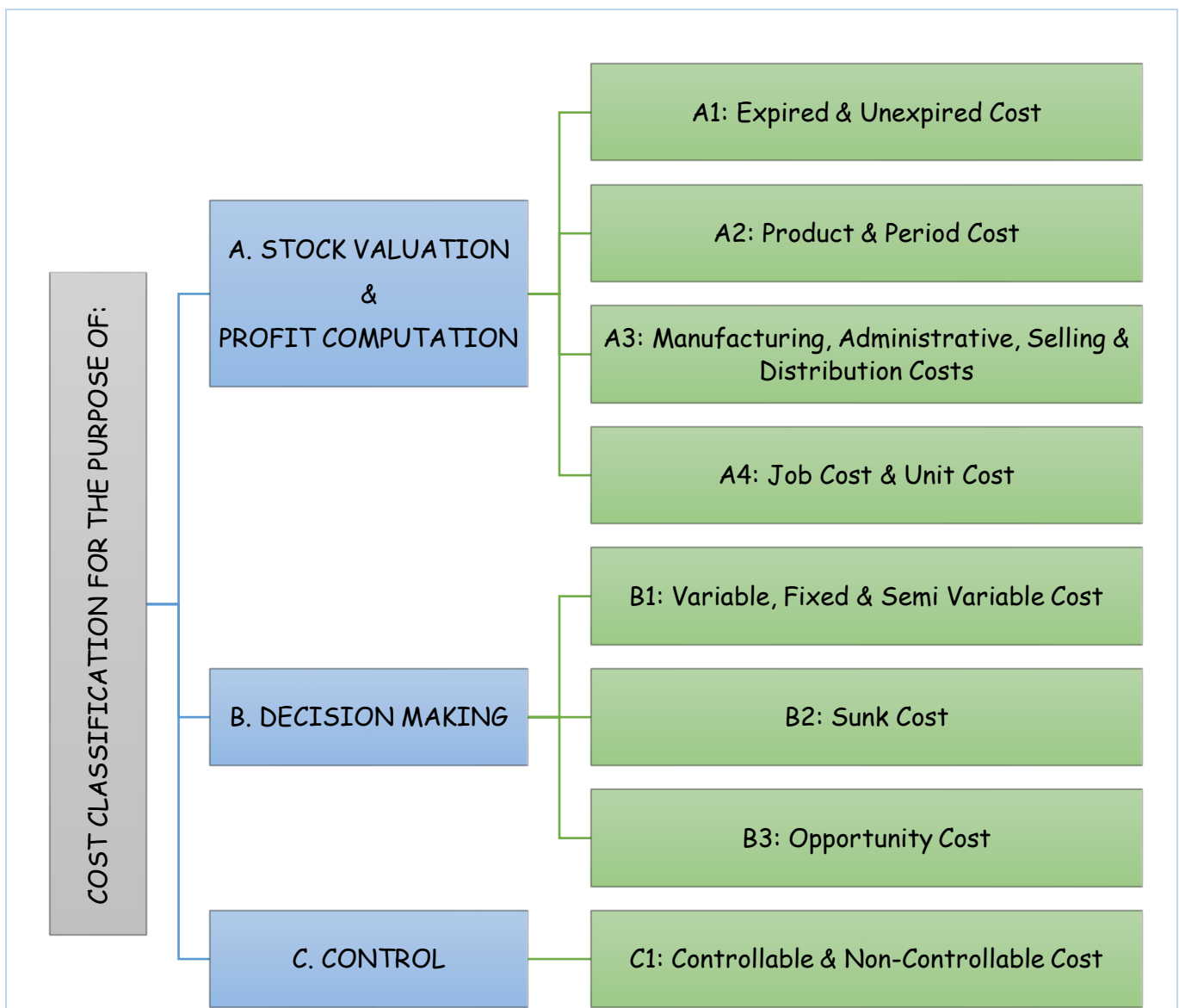


## CHAPTER 01: BASIC CONCEPTS

### 1. What is Cost?

- ✓ Cost means resources **sacrificed** for the purpose of carrying on **business/profession** which can be quantified in **monetary terms**.
- ✓ It should be noted that there are three key terms in the above definition:
  - **Sacrifice** of Resources
  - Relating to **Business/Profession**
  - Quantifiable in **Monetary Terms**

### 2. Cost Classification



**Note:**

The above **Cost Classification** & this **entire chapter** is crafted from the **faculty's own perspective** and creative approach to **enhance** the **understanding** and to **simplify** the complex concepts covered in the **subject** and hence may not be present as such in **ICAI Study Material**.

### 3. Cost Classification under Stock Valuation & Profit Computation

✓ For the purpose of Stock Valuation & Profit Computation, cost can be classified as

A1: **Expired Cost** & **Unexpired Cost**

A2: **Product Cost** & **Period Cost**

A3: **Manufacturing, Administrative, Selling & Distribution Costs**

A4: **Job Cost** & **Unit Cost**

#### A1: Expired Cost & Unexpired Cost

- ✓ **Expired Costs** are those costs which are **charged** against **revenue**.
- ✓ **Unexpired Costs** are those **costs** which are **carried forward** to the next **accounting period** through **stocks**.

#### A2: Product Cost & Period Cost

- ✓ **Product Costs** are those costs which are considered for **Stock Valuation**.
- ✓ **Period Costs** are those costs which are **not** considered for **Stock Valuation** and **expire** fully in the **current** period.

#### A3: Manufacturing, Administrative, Selling & Distribution Costs

- ✓ **Manufacturing Costs** are those **costs** that are incurred from the **purchase** of Raw **Materials** till the **primary packing** of Finished Goods. In other words, **Manufacturing Costs** are all the **costs** that are incurred inside the **factory** and comprise **Material Costs**, **Labour costs** & **Production Overheads**.
- ✓ **Administrative Costs** are those costs that are incurred in respect of activities **relating** to the **general management** and **administration** of an entity.
- ✓ **Selling Costs** are the expenses related to the **sale** of **products** or **services** and include all indirect expenses incurred in **selling** the products or services.
- ✓ **Distribution Costs** are the costs incurred in **handling** a product or service from the time it is ready for **dispatch** or **delivery** until it reaches the ultimate **consumer**.

#### A4: Job Cost & Unit Cost

- ✓ **Job Costing** is the **system** that **traces** costs to **specific jobs**, contracts, or lots of goods where costs are ascertained on an **individual** basis.
- ✓ **Unit Costing** is the system that collects costs incurred in a particular **period** to produce goods, the per unit cost of which is **ascertained** on an **average** basis.

#### 4. Cost Classification under Decision Making

- ✓ For the purpose of **Decision Making**, cost can be classified as

B1: **Variable**, Fixed & **Semi Variable Cost**

B2: **Sunk Cost**

B3: **Opportunity Cost**

B1: Variable, Fixed & Semi Variable Cost

- ✓ **Variable Costs** are costs that vary with a **measure of activity**. Variable Costs are costs which tend to **directly** vary with the **volume** of activity.
- ✓ **Fixed Costs** are costs which do not vary with the change in the **volume of activity**. They remain constant irrespective of the volume level.
- ✓ **Semi-Variable Costs** are costs containing **both fixed** and **variable** components which get partly affected by a change in the level of activity

B2: Sunk Cost

- ✓ These are **costs** that have been **irreversibly** incurred or **committed** and **cannot**, therefore, be considered relevant to a **decision**. Sunk costs may also be termed **irrecoverable** costs.

B3: Opportunity Cost

- ✓ It is the value of the best **alternative** course of action that was not chosen. In other words, it is what could have been **accomplished** with the **resources** used in the course of action if they were employed in the next best alternative. It represents opportunities for gone.

#### 5. Cost Classification under Control

- ✓ For the purpose of **Control**, cost can be classified as

C1: **Controllable & Non-Controllable Cost**

C1: Controllable & Non-Controllable Cost

- ✓ **Controllable Costs** are those **costs** which are subject to **direct control** at some level of managerial supervision.
- ✓ **Non-controllable Costs** are those costs which are **not subject** to control at any **level** of managerial supervision.

## CHAPTER 2: PREPARATION OF COST SHEET AND ASCERTAINMENT OF PROFIT

### 1. Introduction

- ✓ **Cost sheet**, also referred as **statement** of cost, is a statement that shows the **various components** of **total cost** for a **product** and shows previous data for comparison. The selling price (after adding certain **percentage** of **profit** to the cost) can be **deduced** for a **product** based on the **cost sheet**.
- ✓ It is **depiction** of the cost **accumulation** process of a **single output** based on a single **cost unit**. An estimated cost sheet is prepared based on **estimated cost** just before the **production** begins.

### 2. Format of Cost Sheet

| Cost Sheet |  |       |       |
|------------|--|-------|-------|
|            | Particulars                                  | ₹     | ₹     |
| 01         | Opening Stock of Raw Materials               | XXX   |       |
| 02         | Purchase of Raw Material                     | XXX   |       |
| 03         | Less: Closing Stock of Raw Material          | (XXX) |       |
| 04         | Add: Direct Charges related to Raw Materials | XXX   |       |
| 05         | Raw Material Consumed (1 + 2 - 3 + 4)        |       | XXX   |
| 06         | Direct Labour                                |       | XXX   |
| 07         | Direct Expenses                              |       | XXX   |
| 08         | Prime Cost (5 + 6 + 7)                       |       | XXX   |
| 09         | Production Overheads                         |       | XXX   |
| 10         | Works (Factory) Cost (8 + 9)                 |       | XXX   |
| 11         | Opening Work in Progress                     |       | XXX   |
| 12         | Less: Closing Work in Progress               |       | (XXX) |
| 13         | Adjusted Works (Factory) Cost (11 + 12)      |       | XXX   |
| 14         | Administrative Overheads                     |       | XXX   |
| 15         | Cost of Production (COP) (13 + 14)           |       | XXX   |
| 16         | Opening Finished Goods                       |       | XXX   |
| 17         | Less: Closing Finished Goods                 |       | (XXX) |
| 18         | Cost of Goods Sold (COGS) (15 + 16 - 17)     |       | XXX   |

|    |   |  |     |
|----|---|--|-----|
| 19 | Selling and Distribution Overheads                    |  | XXX |
| 20 | Cost of Sales (COS) (18 + 19)                         |  | XXX |
| 21 | Profit (as a percentage of cost of sales or of sales) |  | XXX |
| 22 | Sales   |  | XXX |

## Note

It is **imperative** to note that **cost of goods sold** is the costs **assigned** to the **units sold**. Whereas **cost of sales** is the total of production costs assigned to units **sold** plus **selling** and **distribution** expenses. It is interesting to note that as per paragraph 13 (c) of AS 2, **administrative cost** do **not** form **part** of **cost of production**

## 3. Cost Heads in a Cost Sheet

- ✓ The costs as **classified** on the basis of **functions** are grouped into the following cost heads in a cost sheet:
  - **Prime** cost
  - Cost of **Production**
  - Cost of **Goods Sold**
  - Cost of **Sales**

### A. Direct Material Cost

- ✓ It is the cost of **direct material consumed**.
- ✓ Few examples of items to be added in the cost of raw material:
  - **Freight** inwards;
  - **Insurance** and other expenditure directly attributable to procurement;
  - **Trade discounts** or rebates (to be deducted);
  - Duties & **Taxes** (if input tax credit is not available/ availed) etc.

#### Doubt Busters:

Cash Discount is treated as a non-operating expense and hence should not be considered for calculations.

### B. Direct Employee (Labour) Cost

- ✓ It is the **total of payment** made to the employees who are **engaged** in the **production** of **goods** and **provision** of **services**.
- ✓ **Employee cost** is also known as **labour cost**; it includes the following:
  - **Wages** and **salary**;
  - **Allowances** and **incentives**;
  - **Payment** for **overtimes**;
  - **Bonus/ ex-gratia**;
  - **Employer's contribution** to **welfare funds** such as **PF**

- **Other benefits** (medical, leave with pay, free or subsidised food, leave travel concession and provisions for retirement benefits) etc.

## C. 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:
  - **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;
  - **Other expenses** which are directly related with the **production** of goods or **provision** of service.

## D. Production Overheads

- ✓ It is also known as **works/production/ manufacturing** Overheads.
- ✓ It includes the following indirect costs
  - **Consumable stores** and spares;
  - **Depreciation of plant** and **machinery**, factory building etc.
  - **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 raw material & WIP etc.
  - **Amortized cost** of jigs, fixtures, tooling etc.
  - **Service department** cost such as Tool Room, Engineering & Maintenance, Pollution Control etc.

## F. Administrative Overheads

- ✓ It is the **cost** related with **general administration** of the **entity** and includes the following:
  - **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.

Doubt Busters:

Bank Charges is treated as AOH.

### G. Selling Overheads

- ✓ It is the **cost** related with **sale** of **products** or **services** and includes the following **costs**:
  - **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.
  - **Packing Cost** (secondary): **Packing material** that enables to store, transport, inform the customer, promote and otherwise make the **product marketable**.

## 4. Treatment of Various Items of Cost in Cost Sheet

### Cost Accountancy

- ✓ Subsidy/Grant/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 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. These charges are **not included** in cost of production.

Doubt Busters:

Conversion Cost = Direct Labour + Direct Expenses + Production Overheads

## 5. Valuation of Closing FG under Different Methods

### I. FIFO Method (Opening Stock will be sold first)

|                         |  |
|-------------------------|--|
| Cost of Production      | ₹ 10,00,000 (10000 units)                                |
| Sold                    | 11000 units  |
| Opening Stock           | ₹ 10,00,000 (8000 units)                                 |
| Closing Stock           | 7000 units   |
| Valuation of Closing FG | (₹ 10,00,000 ÷ 10000 units) * 7000 units<br>= ₹ 7,00,000 |

## II. LIFO Method (Current Period Production will be sold first)

|   |   |
|---|---|
| Cost of Production                                      | ₹ 10,00,000 (10000 units)                               |
| Sold  | 11000 units   |
| Opening Stock   | ₹ 10,00,000 (8000 units)                                |
| Closing Stock   | 7000 units  |
| Valuation of Closing FG<br>= Fully out of Opening stock | (₹ 10,00,000 ÷ 8000 units) * 7000 units<br>= ₹ 8,75,000 |

## III. Weighted Average Method (Weighted Average - The combined mix is sold)

|               | Rate / Unit | Units  | Total       |
|---------------|-------------|--------|-------------|
| COP           | 100         | 10,000 | ₹ 10,00,000 |
| Opening Stock | 125         | 8,000  | ₹ 10,00,000 |
| Total         |             |        | ₹ 20,00,000 |

✓ Weighted Average Rate Per Unit = ₹ 20,00,000 ÷ 18000 units = ₹ 111.11

✓ Valuation of Closing FG = ₹ 111.11 \* 7000 units = ₹ 7,77,778

### Doubt Busters:

When Opening Stock units & Current Period Production units are valued differently only then, stock Valuation issue (FIFO/LIFO/Weighted Average) arises. - Refer Classroom Discussion

## 6. Cost Treatment of Goods & Service Tax (GST)

### A On Recurring/Revenue Expenses:

Example: Raw Materials Purchase:

Purchase of Cement from M/s X & Co

|           |         |                   |           |
|-----------|---------|-------------------|-----------|
| Cement    | 10 Bags | @ ₹ 100/- per Bag | ₹ 1000.00 |
| CGST (9%) |         |                   | ₹ 90.00   |
| SGST (9%) |         |                   | ₹ 90.00   |
| Total     |         |                   | ₹ 1180.00 |

#### i. If the Buyer (M/s Y & Co.) is GST Registered Firm:

In it's Books, the journal entry will be

| Particulars          |     | Debit (₹) | Credit (₹) |
|----------------------|-----|-----------|------------|
| Cement/ Purchase A/c | Dr. | 1,000.00  |            |
| Input CGST A/c       | Dr. | 90.00     |            |
| Input SGST A/c       | Dr. | 90.00     |            |
| To M/s X & Co        |     |           | 1,180.00   |

### Cost Treatment:

| Profit & Loss Account/ Cost Sheet                                   |               |                          |               | Balance Sheet |               |                          |               |
|---|---------------|--------------------------|---------------|---------------|---------------|--------------------------|---------------|
| Debit   | Amount<br>(₹) | Credit                   | Amount<br>(₹) | Liabilities   | Amount<br>(₹) | Assets                   | Amount<br>(₹) |
| To Purchase/<br>Cost of<br>Materials<br>Consumed /<br>Material Cost | 1,000         | Closing<br>Stock/<br>WIP | 1,000         | M/s X &<br>Co | 1,180         | Closing<br>Stock/<br>WIP | 1,000         |
|   |               |                          |               |               |               | Input<br>CGST 9%         | 90            |
|   |               |                          |               |               |               | Input<br>SGST 9%         | 90            |
| <b>Total</b>  | <b>1,000</b>  |                          | <b>1,000</b>  |               | <b>1,180</b>  |                          | <b>1,180</b>  |

ii. If the Buyer (M/s Y & Co.) is not a GST Registered Firm/ End User:

In it's Books, the journal entry will be:

| Particulars          |     | Debit (₹) | Credit (₹) |
|----------------------|-----|-----------|------------|
| Cement/ Purchase A/c | Dr. | 1,180.00  |            |
| To M/s X & Co        |     |           | 1,180.00   |

### Cost Treatment:

| Profit & Loss Account/ Cost Sheet                                    |               |                          |               | Balance Sheet |               |                          |               |
|--|---------------|--------------------------|---------------|---------------|---------------|--------------------------|---------------|
| Debit  | Amount<br>(₹) | Credit                   | Amount<br>(₹) | Liabilities   | Amount<br>(₹) | Assets                   | Amount<br>(₹) |
| To Purchase /<br>Cost of<br>Materials<br>Consumed /<br>Material Cost | 1,180         | Closing<br>Stock/<br>WIP | 1,180         | M/s X &<br>Co | 1,180         | Closing<br>Stock/<br>WIP | 1,180         |
| <b>Total</b>   | <b>1,180</b>  |                          | <b>1,180</b>  |               | <b>1,180</b>  |                          | <b>1,180</b>  |

**B** On Capital Expenses Expenses on which ITC is available (Ex: Plant & Machinery):

Example: Purchase of Machinery:

Purchase of Machinery from M/s X & Co

|           |       |           |
|-----------|-------|-----------|
| Machinery | 1 Nos | ₹ 1000.00 |
| CGST (9%) |       | ₹ 90.00   |
| SGST (9%) |       | ₹ 90.00   |

|       |  |           |
|-------|--|-----------|
| Total |  | ₹ 1180.00 |
|-------|--|-----------|

### Export to Sheets

i. If the Buyer (M/s Y & Co.) is GST Registered Firm:

In it's Books, the journal entry will be:

| Particulars    |     | Debit (₹) | Credit (₹) |
|----------------|-----|-----------|------------|
| Machinery A/c  | Dr. | 1,000.00  |            |
| Input CGST A/c | Dr. | 90.00     |            |
| Input SGST A/c | Dr. | 90.00     |            |
| To M/s X & Co  |     |           | 1,180.00   |

### Cost Treatment:

| Particulars      |     | Debit (₹) | Credit (₹) |
|------------------|-----|-----------|------------|
| Depreciation A/c | Dr. | 100.00    |            |
| To Machinery A/c |     |           | 100.00     |

| Profit & Loss Account/ Cost Sheet |            |        |            | Balance Sheet |              |                   |              |
|-----------------------------------|------------|--------|------------|---------------|--------------|-------------------|--------------|
| Debit                             | Amount (₹) | Credit | Amount (₹) | Liabilities   | Amount (₹)   | Assets            | Amount (₹)   |
| To                                | 100        | By     | 100        | M/s X & Co    | 1,180        | WDV of Machinery  | 900          |
| Depreciation (10% of ₹ 1,000/-)   |            | Loss   |            |               |              | Input CGST 9%     | 90           |
|                                   |            |        |            |               |              | Input SGST 9%     | 90           |
|                                   |            |        |            |               |              | Profit & Loss A/c | 100          |
| <b>Total</b>                      | <b>100</b> |        | <b>100</b> |               | <b>1,180</b> |                   | <b>1,180</b> |

ii. If the Buyer (M/s Y & Co.) is not GST Registered Firm/ End User:

In it's Books, the journal entry will be:

| Particulars   |     | Debit (₹) | Credit (₹) |
|---------------|-----|-----------|------------|
| Machinery A/c | Dr. | 1,180.00  |            |
| To M/s X & Co |     |           | 1,180.00   |

### Cost Treatment:

| Particulars      |     | Debit (₹) | Credit (₹) |
|------------------|-----|-----------|------------|
| Depreciation A/c | Dr. | 118.00    |            |
| To Machinery A/c |     |           | 118.00     |

| Profit & Loss Account/ Cost Sheet |            |         |            | Balance Sheet |              |                   |              |
|-----------------------------------|------------|---------|------------|---------------|--------------|-------------------|--------------|
| Debit                             | Amount (₹) | Credit  | Amount (₹) | Liabilities   | Amount (₹)   | Assets            | Amount (₹)   |
| To Depreciation (10% of ₹ 1180/-) | 118        | By Loss | 118        | M/s X & Co    | 1,180        | WDV of Machinery  | 1,062        |
|                                   |            |         |            |               |              | Profit & Loss A/c | 118          |
| <b>Total</b>                      | <b>118</b> |         | <b>118</b> |               | <b>1,180</b> |                   | <b>1,180</b> |

### C On Capital Expenses on which ITC is not available (Ex: Mobile):

Example: Purchase of Mobile:

#### Purchase of Machinery from M/s X & Co

|              |       |                  |
|--------------|-------|------------------|
| Mobile       | 1 Nos | ₹ 1,000.00       |
| CGST (9%)    |       | ₹ 90.00          |
| SGST (9%)    |       | ₹ 90.00          |
| <b>Total</b> |       | <b>₹ 1180.00</b> |

### iii. If the Buyer (M/s Y & Co.):

In it's Books, the journal entry will be:

| Particulars   |     | Debit (₹) | Credit (₹) |
|---------------|-----|-----------|------------|
| Machinery A/c | Dr. | 1,180.00  |            |
| To M/s X & Co |     |           | 1,180.00   |

### Cost Treatment:

| Particulars      |     | Debit (₹) | Credit (₹) |
|------------------|-----|-----------|------------|
| Depreciation A/c | Dr. | 118.00    |            |
| To Machinery A/c |     |           | 118.00     |

| Profit & Loss Account/ Cost Sheet          |               |            |               | Balance Sheet |               |                      |               |
|--|---------------|------------|---------------|---------------|---------------|----------------------|---------------|
| Debit                                      | Amount<br>(₹) | Credit     | Amount<br>(₹) | Liabilities   | Amount<br>(₹) | Assets               | Amount<br>(₹) |
| To<br>Depreciation<br>(10% of ₹<br>1180/-) | 118           | By<br>Loss | 118           | M/s X &<br>Co | 1,180         | WDV of<br>Machinery  | 1,062         |
|  |               |            |               |               |               | Profit &<br>Loss A/c | 118           |
| Total                                      | 118           |            | 118           |               | 1,180         |                      | 1,180         |

### Conclusion:

Cost Treatment of GST depends on following factors:

1. Status of the Organisation (GST Registered or Not)
2. Depends on Nature of Expenses (Revenue or Capital)
3. ITC on GST is applicable or Not.

## CHAPTER 3: DIRECT EXPENSES

### 1. Introduction

- ✓ All **expenditures** other than those incurred for **procurement** of **material** and **labour** are termed as '**expenses**'.
- ✓ Expenses can be **classified** **direct** expense or **indirect** expense. This classification is based on whether the expense is **traceable** to **cost centre** or **cost unit**. It is important to note that;
  - **Proper classification** of expenses into direct and indirect categories is essential for accurate **financial reporting** and **cost analysis**.
  - Understanding the **nature** of **expenses** helps in making **informed decisions** about cost control, pricing strategies, and resource allocation.
  - The distinction between **direct** and **indirect** expenses is **crucial** for **calculating** the true **cost** of **producing** goods or services and determining the **profitability** of specific products or **projects**.
- ✓ Cost Accounting Standard (**CAS**) **10** issued by the **Council** of the Institute of Cost Accountants of India deliberates various provisions for **treatment** of **direct expenses** in cost accounting.
- ✓ CAS 10 defines **direct expenses** as expenses relating to **manufacture** of a **product** or rendering a service, which can be **identified** or linked with the **cost object** other than direct material cost and direct employee cost.

#### Direct Expenses

- ✓ **Direct Expenses** are costs **other** than **material** cost and **employee** cost incurred for the purpose of **production** of a product or rendering of a service. (example - cost of **utilities**, **payment for** bought out **services**, **job processing charge** etc.)
- ✓ It is important to note that these can be **quantified** with **reasonable accuracy** and are thus said to be **traceable** costs. If some portion of the **expenses cannot** be traced to the product or service, it is **referred** as **indirect** cost. Thus, expenses are either as:
  - **Direct expenses** - these are **expenses** except direct material and direct employee cost which can be **assigned** to a **cost object**.
  - **Indirect expenses** - these are **expenses**, which **cannot** be **directly** assigned to a particular **cost object** in an economically feasible way.

|                                    |        |
|------------------------------------|--------|
| Production and Operation Overheads | CAS 3  |
| Material Cost                      | CAS 6  |
| Employee Cost                      | CAS 7  |
| Direct Expenses                    | CAS 10 |
| Administrative Overheads           | CAS 11 |
| Selling and Distribution Overheads | CAS 15 |

| Direct Expenses (Chargeable Expenses)       |   |
|---|---|
| 1.  | <p><b>Nature</b></p> <p>Forms part of <b>Prime Cost</b> (along with <b>Direct Material</b>). Not physically traceable in the product but directly attributable to it.</p>   |
| 2.  | <p><b>Examples</b></p> <p>Royalty, license fees, technical know-how, design charges, special tools, hiring of equipment for specific jobs.</p> <ul style="list-style-type: none"> <li>○ <b>Cost of utilities</b> such as power &amp; fuel, steam etc.;</li> <li>○ <b>Royalty paid/ payable</b> for production or provision of service;</li> <li>○ <b>Hire charges</b> paid for hiring specific equipment;</li> <li>○ <b>Fee for technical</b> assistance and know-how;</li> <li>○ <b>Cost for product/ service</b> specific design or drawing;</li> <li>○ <b>Cost of product/ service</b> specific software;</li> <li>○ <b>Other expenses</b> which are directly related with the <b>production</b> of goods or <b>provision</b> of service.</li> </ul> |
| CAS - 10 (Para 5) Principles of Measurement |   |
| 1.  | <p><b>Externally Procured Resources</b></p> <p>Measured from <b>invoice or agreed price</b>, including duties, taxes, direct expenses; <b>net of</b> trade discounts, rebates, refundable taxes/duties.</p>   |
| 2.  | <p><b>R&amp;D Costs</b></p> <p>Include only if specifically <b>related to the cost object</b>.</p>  |
| 3.  | <p><b>Lump-sum Payments</b></p> <p><b>Amortized</b> based on estimated benefit/output.</p>  |
| 4.  | <p><b>Future Benefit Items</b></p> <p>Use <b>estimated volume</b> to apportion costs (e.g., royalty, know-how).</p>   |
| 5.  | <p><b>Immaterial Items</b></p>  |

|     |  |
|-----|--|
|     | May be treated as <b>overheads</b> .   |
| 6.  | Finance Costs<br><b>Not included</b> as direct expenses.   |
| 7.  | Imputed Costs<br><b>Excluded</b> , especially for internal use - follow <b>CAS - 4</b> .                     |
| 8.  | Standard Costing Variances<br><b>Normal variances</b> included in direct expense; <b>abnormal excluded</b> . |
| 9.  | Grants/Subsidies<br><b>Deducted</b> to find net direct expense.  |
| 10. | Abnormal Portion<br><b>Excluded</b> if significant and quantifiable.   |
| 11. | Penalties/Damages<br><b>Not considered</b> part of direct expenses.  |
| 12. | Recoveries<br><b>Material recoveries</b> deducted.   |
| 13. | Changes in Cost Principles<br>Allowed if <b>legally required</b> , for compliance or better accuracy.        |

|  |
|--|
| Disclosures Requirements (CAS - 10, Para 8) (if material & quantifiable) |
| Basis of <b>distribution</b> of direct expenses.                         |
| <b>Quantities &amp; rates</b> , where applicable.                        |
| <b>Price &amp; usage</b> variances under <b>standard</b> cost method.    |
| <b>Related party transactions</b> , foreign exchange expenses.           |
| <b>Grants</b> , incentives, and deductions.                              |
| <b>Abnormal direct</b> expenses (disclosed separately).                  |
| Clarification on exclusion of <b>penalties/damages</b> .                 |

## 2. Direct Vs Indirect Expense

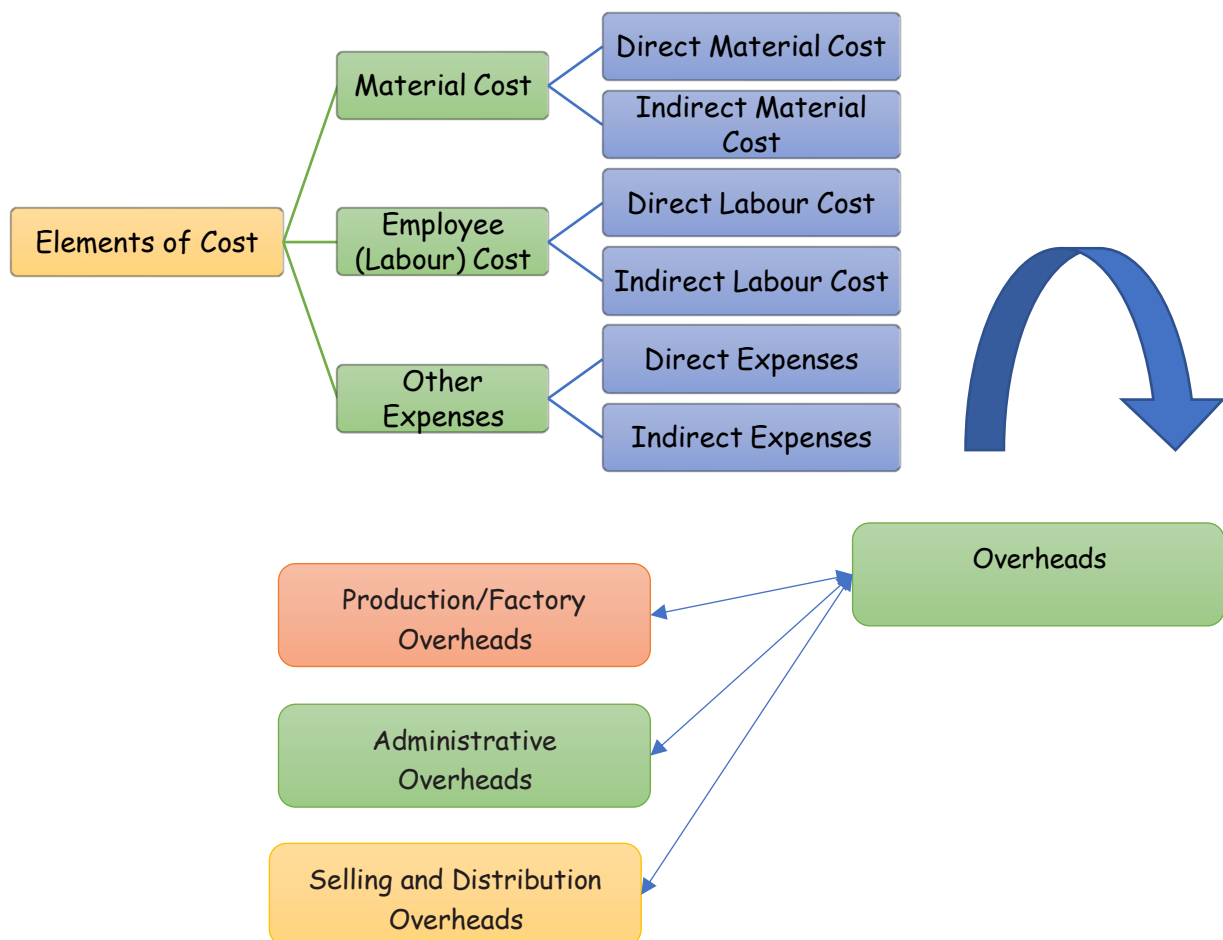
| Direct Expenses   | Indirect Expenses  |
|---|--|
| 1. <b>Direct expenses</b> or direct costs incurred while manufacturing the main ' <b>product</b> ' or ' <b>service</b> ' of the company/organization. | 1. Indirect <b>expenses</b> or indirect costs which are <b>not</b> directly related to the core ' <b>product</b> ' or ' <b>service</b> ' of the <b>company</b> organization. |

|   |   |
|---|---|
| 2. It is shown on the <b>debit side</b> of a Trading Account.   | 2. It is shown on the <b>debit side</b> of <b>Profit and Loss</b> Account.  |
| 3. Direct expenses can be allocated to a <b>specific product, department or segment</b> .             | 3. Indirect expenses are usually shared among <b>different products, departments and segments</b> .                                       |
| 4. They become a <b>part</b> of the <b>total cost</b> of goods/ services sold.                        | 4. Indirect expenses are <b>not included</b> in the <b>total cost</b> of goods/services sold.   |
| 5. Examples - <b>Direct labour</b> (wages), cost of raw <b>material, power, rent</b> of factory, etc. | 5. Examples - <b>Printing</b> cost, <b>utility bills</b> , legal & <b>consultancy, office and administration</b> expense, bad-debts, etc. |

## CHAPTER 4: OVERHEADS

### 1. Introduction

- ✓ Any **cost** which is **not** directly **identifiable** to any particular product, job, operation or process is mentioned as **overheads**.
- ✓ As such, it is summing up of **total** of **indirect material** cost, indirect **labour** cost and indirect **expenses** and may also be referred as indirect cost.
- ✓ Indirect costs are costs which are **not traceable** to a cost center or and cost unit and therefore have to be apportioned to the cost **centre** or cost **unit**.

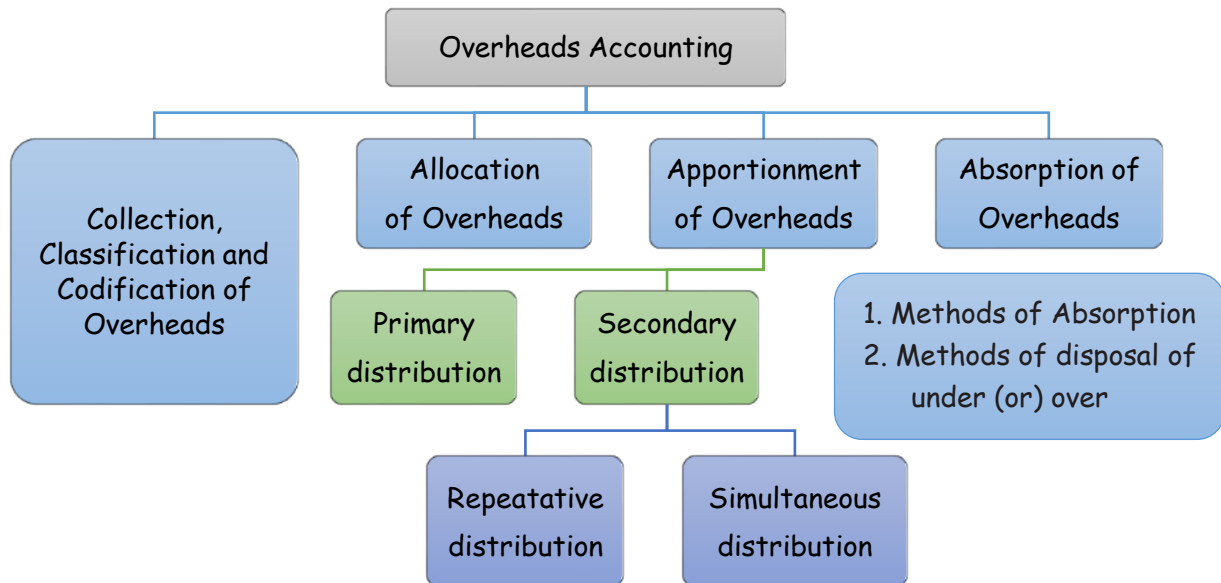


- ✓ It is important to note that the **Institute of Cost Accountants** of India have issued **CAS 3** (Production and Operation Overheads), **CAS 11** (Administrative Overheads) and **CAS 15** (Selling and Distribution Overheads) which stipulates the **scope**, objective, **principles** of measurement, assignment, basis of absorption, presentation and **disclosure** of each specific **overheads**.

## Overheads Accounting

✓ As **overheads** are **indirect** costs, it becomes **difficult** to charge them to the **units produced**. So, it becomes necessary to charge them to the units produced on some **equitable** basis which is called as '**Absorption**' of overheads. The important steps involved in overheads accounting are as follows:

- **Collection, Classification** and Codification of Overheads.
- Allocation, **Apportionment** and **Reapportionment** of Overheads,
- **Absorption** of Overheads.



## Allocation, Apportionment and Reapportionment of Overheads

- ✓ After the **collection**, codification and **classification** of overheads, the **next step** is allocation and **apportionment** of overheads to the units produced. The following steps are required to complete this process.
- ✓ **Departmentalization** - Departmentalization of overhead expenses is the **process** of determining the overhead costs of **each department** involved in **production**. This process involves **dividing** the **departments** in a factory into **two** categories: **production** departments and **service** departments. The departmentalization of overheads is undertaken in **two** stages: **allocation** of overheads and **apportionment** of overhead expenses.
- ✓ **Allocation and Apportionment** - Allocation involves **identifying overheads** to particular cost centre. It means **charging** of **overhead** to a particular cost **centre** as the overhead is relatable to that particular cost centre. It may be said that **allocation** is allotment of items of indirect costs to cost centre.
- ✓ **Apportionment** - Involves the **distribution** of overhead costs among two or more cost centers or departments. This method is used when a particular **cost cannot** be **directly attributed** to a single department and needs to be **shared** among several units **based** on a **reasonable** and equitable **basis**.

| Feature       | Allocation  | Apportionment   |
|---------------|---|---|
| Definition    | Assignment of the <b>entire cost</b> to a single department.                              | Distribution of costs among <b>multiple departments</b> or cost centers.  |
| Scope         | Applied when a cost is <b>entirely associated</b> with a specific department.             | Used when a cost is shared among <b>multiple departments</b> , and a fair <b>basis</b> is needed for distribution.  |
| Applicability | Direct assignment <b>without</b> further <b>distribution</b> .                            | Involves <b>distributing</b> costs among various departments based on a predetermined allocation <b>basis</b> .     |
| Method        | Direct assignment of a <b>cost</b> to a specific <b>unit</b> .                            | Requires the use of a basis (e.g., floor area, machine usage) to <b>distribute</b> costs among <b>departments</b> . |
| Examples      | Entire cost of a <b>specialized machine</b> assigned to a production department.          | <b>Rent</b> cost of a building distributed among different <b>departments</b> based on relevant <b>factors</b> .    |
| Precision     | May be more <b>precise</b> when a cost is exclusively related to a particular department. | Requires a <b>basis</b> for distribution, involving some degree of estimation or <b>approximation</b> .             |

## 2. Primary Distribution and Secondary Distribution

### Primary distribution and secondary distribution

- ✓ In overheads accounting, **primary** distribution and secondary distribution are two stages involved in the **process** of **allocating** and **apportioning** overheads to cost centers. These stages help in **distributing** overhead costs to the appropriate departments or **production** units.

| Overheads Item        | Basis of Apportionment  |
|-----------------------|---|
| Rent, Rates and Taxes | <b>Floor Area</b> Occupied  |
| Repairs to Building   | <b>Value</b> of Buildings / <b>Floor Space</b>                          |
| General Lighting      | <b>Number of Light Points</b> in Each Department                        |
| Power                 | Horse <b>Power</b> of Machines  |
| Telephones            | Number of <b>Extensions</b> in a <b>Department</b>                      |
| Supervision           | Number of <b>Employees</b>  |
| Material Handling     | Number of <b>Material Requisitions</b> or Value of <b>Material</b> Used |

- ✓ Secondary distribution is the **process** of **redistributing** the cost-of-service departments among the production departments. This step ensures that the **product** cost **bears** the **equitable** share of the cost-of-service departments that render services to the production departments. It is the **second step** in the overall **process** of overheads distribution

## Format for Primary Distribution

| Primary Distribution                        | Production Departments |            |           | Service Departments |   |   |
|---|------------------------|------------|-----------|---------------------|---|---|
|   | Machining              | Assembling | Finishing | X                   | Y | Z |
| Direct Material                             | -                      | -          | -         | ✓                   | ✓ | ✓ |
| Direct Labour                               | -                      | -          | -         | ✓                   | ✓ | ✓ |
| Direct Expenses                             | -                      | -          | -         | ✓                   | ✓ | ✓ |
| Rent (Floor Area)                           | ✓                      | ✓          | ✓         | ✓                   | ✓ | ✓ |
| Electricity (KWH)                           | ✓                      | ✓          | ✓         | ✓                   | ✓ | ✓ |
| Lighting<br>(Light points)                  | ✓                      | ✓          | ✓         | ✓                   | ✓ | ✓ |
| Indirect Wages<br>(Direct Wages)            | ✓                      | ✓          | ✓         | ✓                   | ✓ | ✓ |
| Depreciation<br>(Value of Plant)            | ✓                      | ✓          | ✓         | ✓                   | ✓ | ✓ |
| Overheads as per<br>Primary<br>Distribution | ✓                      | ✓          | ✓         | ✓                   | ✓ | ✓ |

## Format Secondary Distribution

| Secondary<br>Distribution                     | Production Departments |            |           | Service Departments |     |     |
|---|------------------------|------------|-----------|---------------------|-----|-----|
|   | Machining              | Assembling | Finishing | X                   | Y   | Z   |
| X   | ✓                      | ✓          | ✓         | (✓)                 |     |     |
| Y   | ✓                      | ✓          | ✓         |                     | (✓) |     |
| Z   | ✓                      | ✓          | ✓         |                     |     | (✓) |
| Overheads as per<br>Secondary<br>Distribution | ✓                      | ✓          | ✓         | -                   | -   | -   |

## Secondary Distribution of Production Overheads

- ✓ The next step is to **reapportion** the **service** department costs over the **production** departments. This also needs to be done on some **suitable basis**, as there may not be a direct linkage between services and production activity.
- ✓ The products actually do **not pass** through the **service** departments but the cost-of-service departments have to be recovered from the sales of the finished products.
- ✓ Hence, the **overheads** of the service departments have to be **apportioned** to production department. This process is called **secondary** distribution of overheads.

| Service Department | Basis  |
|--------------------|--|
| Quality            | No. of <b>inspection</b> done  |
| Maintenance        | No. of <b>maintenance</b> calls or Material usage for maintenance or <b>Time</b> spent on maintenance                |
| Stores             | Indirect <b>material</b> cost or No. of issue <b>slips</b> or Quantity of material issued for Value of stock handled |
| Canteen, Welfare   | No. of <b>workers</b>  |
| Internal Transport | No. of <b>truck</b> or trolleys used for <b>Tonne</b> miles consumed   |
| Payroll Office     | No. of <b>labour</b> hours   |
| Purchase Office    | No. of purchase <b>orders</b> or Value of <b>material</b> purchased  |

### 3. Types of Secondary Distribution

#### A. Direct Distribution Method

- ✓ This method is based on the **assumption** that one **service** department does **not** give **service** to **other** service **departments**, thus between service departments there is **no reciprocal** service exchange. Hence, under this **method**, **service costs** are **directly** loaded on to the **production** departments.
- ✓ This is **simple**, but the **assumption** may **not** be **correct**. It is incorrect to assume that canteen service is not available to other service departments like labour office or stores or maintenance department and thus, the **method** should **not** be **used** as far as possible.

#### B. Step Distribution Method or Non reciprocal Method

- ✓ This method is based on the **assumption** that **one service department** gives **service** to the **other** but does **not receive service** from **other** service department.
- ✓ For Example, it may be assumed that **S1** may **render** services to **S2** but not vice versa, i.e., **S2** may **not render** service to **S1**. In such situation, cost of that service department will be **distributed** first which render **services** to maximum number of other service departments.
- ✓ After this, the **cost-of- service department** serving the next **large number** of departments is distributed. This process is **continued** till all service departments are over. Because it is done in steps, it is called as **Step Distribution Method**.

#### C. Reciprocal Service Method

- ✓ This approach **acknowledges** that service **departments** can **both** provide and receive **services** from other service departments **reciprocally**. The exchange of services among departments is **duly** considered in **allocating** overhead costs.

- ✓ Two methods are employed for distribution based on this **principle**: the **reciprocal** distribution method and the **simultaneous** equation method.

#### C(a). Repeated Distribution Method

- ✓ This involves **consistent** allocation of overhead costs across all departments. The **predetermined** ratios are applied to **allocate** the costs of service departments to both production and other **service** departments.
- ✓ This process **continues** until the figures for **service** departments reach 'nil' or become 'negligible'.

#### C(b). Simultaneous Equations Method

- ✓ Under this method, **simultaneous** equations are **formed** using the service departments' share with each other. Solving the two **equations** will give the total cost of service departments after loading the **inter-departmental** exchange of services. These costs are then distributed among production departments in the **given ratio**.

#### C(c). Trial and Error Method

- ✓ This method is to be followed when the **question** of distribution of costs of service cost centres which are **interlocked** among them arises. In the **first stage**, gross costs of services of service **cost centres** are determined. In the **second stage** cost of service centres are **apportioned** to production cost centres.

### 4. Capacity Levels and Overheads Rate

#### Installed capacity (Theoretical or Maximum Plant Capacity)

- ✓ **Installed** capacity (maximum capacity or the ideal capacity) is the capacity for which plant is designed to operate. It is also referred as **theoretical** capacity. It does not give allowance for waiting, delays and shut down. The **capacity** is **significant** for designing the plant mechanically. For **cost considerations**, this capacity is not important.
- ✓ The disregard for essential interruptions in the **production process** makes it **impractical** to use ideal capacity in **determining overhead** rates. Installed capacity is defined in para 4.4 of CAS 2 as '**Installed capacity** is the **maximum** capacity of producing goods or providing services, determined either based on **technical specification** of the facility or through a **technical evaluation**'

#### Practical Capacity

- ✓ Once the **theoretical** capacity is assessed, **provisions** are made for **inevitable** disruptions such as time spent on repairs, inefficiencies, equipment breakdowns, delays in the delivery

of raw materials and supplies, labour shortages and absenteeism, Sundays, holidays, vacations, and inventory checks. Consequently, **practical** capacity represents the highest achievable capacity under the influence of minor, **unavoidable interruptions**.

- ✓ These **interruptions, predominantly** stemming from internal factors, exclude major external factors such as a **lack** of customer orders. The determination of **practical capacity** takes into account the nature of the industry and the specific circumstances of the factory's location. Standard unavoidable disruptions typically **contribute** to **15% to 25%** of the **maximum** capacity.
- ✓ Thus, **practical** capacity ranges from **75% to 85%** of the **maximum** capacity after accommodating normal, **unavoidable** interruptions. This is also referred as the actual capacity which is defined in para 4.2 of **CAS 2** as '**Actual** capacity **utilization** is measured in terms of **volume** of **production** achieved or service provided in a **specified** period'. It is important to note that actual capacity utilization is usually expressed as a **percentage** of installed **capacity**

#### Actual capacity utilization

- ✓ Actual capacity utilization is the **volume** of production achieved or service provided in a specified period, expressed as a **percentage** of **installed** capacity.
- ✓ **Volume** may be measured in terms of **units produced** or **services** provided or **equivalent** machine or man hours, as applicable. Actual capacity utilization is usually **expressed** as a **percentage** of **installed** capacity.

#### Normal Capacity

- ✓ Para 4.5 of **CAS 2** defines normal capacity as 'the **volume** of **production** or services achieved or achievable on an **average** over a **period** under normal circumstances taking into account the **reduction** in **capacity** resulting from planned maintenance.
- ✓ Normal capacity refers to the **maximum** level of **output** that a company can sustain over a set period of time. It is the level of production or service provision that a given system can **maintain**. Normal capacity is a key **factor** in measuring a company's capacity utilization rate, which is the percentage of **potential** output that is being **achieved**.
- ✓ Ideally, a **100%** capacity utilization rate is desirable, but **operating** at **full capacity** for an extended period may **not** be **sustainable**. Therefore, normal capacity provides a **realistic benchmark** for sustainable output levels. It takes into account various factors such as **inefficiencies** and delays that make it **impossible** to reach a **theoretical level** of output over the long term.

### Capacity based on Sales Expectancy

- ✓ **Capacity** may be derived from **anticipated sales** for the upcoming year, and it's **crucial** to discern between normal capacity and capacity based on **sales expectations**. While normal capacity takes into account a comprehensive analysis of long-term sales trends spanning a cycle of years, capacity based on **sales expectancy** focuses solely on the sales projections for the upcoming year.
- ✓ The **primary advantages** of determining the overheads rate based on sales expectancy are:
  - **Aligning** the overheads rate with the actual sales expectations.
  - **Effectively** spreading overhead costs across production.
  - Providing a valuable overheads rate for **decision-making** purposes, such as fixing prices.

### Idle Capacity

- ✓ Idle capacity refers to the **unused** or **underutilized** capacity within a system, facility, or process. It represents the **difference** between the **potential** maximum output or **production** capacity and the **actual** level of production or activity at a given time. When a system or resource is operating below its full capacity, the **unused** portion is considered **idle** capacity.
- ✓ Idle capacity can result from various factors such as **low demand** for products or services, maintenance **downtime**, equipment **failures**, or other **inefficiencies** in the production process. Efficient management seeks to minimize idle capacity to enhance productivity and optimize resource utilization. It is categorized as **normal** idle capacity and **abnormal** idle capacity.
- ✓ Para 4.6 of **CAS 2** defines normal idle capacity as 'the **difference** between **installed** and **normal** capacity'. Abnormal idle capacity is the difference between normal capacity and actual capacity utilization where the actual capacity is lower than the normal capacity (para 4.1 of CAS 2).
- ✓ The standard defines '**Excess Capacity Utilization**' is the difference between **installed** capacity and the **actual** capacity utilization when **actual** capacity utilization is **more** than **installed** capacity.

## 5. Absorption Of Overheads and their Treatment in Cost Accounts

- ✓ The **primary** and **secondary** distribution summary discussed above aids in calculating the overheads for each production department. The **next phase** involves allocating these overall **overhead** costs to the units produced. Overheads absorption facilitates the Cost Accountant in recovering the **overhead costs** associated with each **unit** of the **product**. Overheads absorption, also referred to as **levy** or recovery of **overheads**, is achieved by determining the **overheads absorption** rate.

- ✓ **CIMA** defines absorbed overheads as '**overheads** attached to products or services by means of an **absorption rate**, or rates.'
- ✓ In general, the formula for overheads absorption rate is =  $\text{Amount of Overheads} \div \text{Number of units of the base}$ .

#### Doubt Busters:

It should be noted that Production Overheads absorbed and not Production Overheads incurred is considered while preparing cost sheet.

#### Overheads Absorption Rates

- ✓ For the purpose of absorption of overhead in **costs** of jobs, processes or products overhead rates related to suitable **factors** or bases to be determined. There are several methods in use for determining the overhead rates i.e. **Actual** or **Predetermined** Overheads Rate, **Blanket** or **Multiple** Rates.
- ✓ As per para 6.3 of **CAS 3 Absorption** of Production or **Operation** Overheads shall be as follows:
  - The variable **Production** or Operation Overheads shall be **absorbed** to products or services based on **actual production**.
  - The fixed **Production** or Operation Overheads shall be **absorbed** based on the **normal capacity**.

#### Actual Overheads Absorption Rate

- ✓ The **actual** overheads rate is determined **retrospectively** at the end of a period using the actual overhead costs incurred and the **actual level of activity**.
- ✓ The formula for the actual overheads rate is:
 
$$\text{Actual Overheads Rate} = \text{Actual Total Overhead costs} \div \text{Actual level of activity}$$

#### Pre - Determined Overheads Rate

- ✓ The **predetermined** overheads rate is a key concept in cost accounting. It is a **rate** used to **allocate overhead** costs to products or services based on an **estimate** before the **actual** costs are known.
- ✓ The predetermined overheads rate is calculated by **dividing** the estimated total overhead costs by the **estimated** level of **activity** (such as **machine hours**, direct **labor** hours, or production **units**).
- ✓ The **formula** for the predetermined overheads rate is:
 
$$\text{Predetermined Overheads Rate} = \text{Estimated Total Overhead Costs} \div \text{Estimated level of activity}$$

### Blanket (single) Overheads Rate

- ✓ A **single** overheads rate for the **entire factory** may be computed for the entire factory. So, this is known as **factory wide** or **blanket** overheads rate method.

**Blanket Rate = Overheads Cost for the factory ÷ Total quantum of the base**

- ✓ Blanket Rate of overheads may be applied suitable in a small concern. Blanket Rates are easy to compute. The use of **Blanket** rate of overheads gives **erroneous** and **misleading** results, where several products passing through number of different departments. With blanket rate of overheads, **satisfactory** level of managerial control is not possible.

### Multiple Rates

- ✓ This method is most commonly used to **determine** the **multiple overhead** rates i.e., **separate** rate:
  - For each **production** department
  - For each **service** department
  - For each **cost** centre; and
  - For each **product** line.

- ✓ The multiple rates are worked out as:

**Overheads Rate = Overheads Cost allocated and apportioned to each product, department ÷ Corresponding Base**

### Six Types of Absorption Rates

| Absorption Rate:     | Formula:   | Expression:               |
|----------------------|--|---------------------------|
| Labour Hour Rate     | $\frac{\text{Overheads}}{\text{Labour Hours}}$     | Per Labour Hour           |
| Machine Hour Rate    | $\frac{\text{Overheads}}{\text{Machine Hours}}$    | Per Machine Hour          |
| Material Cost Rate   | $\frac{\text{Overheads}}{\text{Material Cost}}$    | % of Direct Material Cost |
| Labour Cost Rate     | $\frac{\text{Overheads}}{\text{Labour Cost}}$      | % of Direct Labour Cost   |
| Prime Cost           | $\frac{\text{Overheads}}{\text{Prime cost}}$       | % of Prime Cost           |
| Production Unit Rate | $\frac{\text{Overheads}}{\text{Production Units}}$ | Per Unit                  |

## 6. Machine Hour Rate

- ✓ In the days of **mechanized production processes**, the most relevant rate to be applied is the **machine hour rate**. This is the **rate** calculated by **dividing** the **actual** or budgeted **overheads** cost related to a **machine** or a group of machines by the **appropriate** number of

machine hours. These hours could be actual hours or budgeted hours. When budgeted hours are used, they are taken at average capacity at which a factory normally operates. Full capacity hours cannot be taken as the factory may not operate at that level and then the absorption rate may be unnecessarily fixed at a lower level. The overheads in a highly mechanized factory are mostly related to the number of hours a machine runs. Hence, this is supposed to be the best method for absorbing overhead costs into the cost unit.

- ✓ A machine hour rate may be calculated using only those overheads which are directly related to the machine e.g., power fuel, repairs, maintenance, depreciation etc. Sum total of these expenses are calculated and then divided by the hours to compute the rate. This is called ordinary machine hour rate. Whereas, if costs not related to machine are also included (e.g., supervision, rent, lighting, heating etc.) for the rate calculation, such rate is called as composite machine hour rate. While calculating machine hour rate, the wages paid to machine operators may be added to the total costs. This is because these operators directly work on the machines and thus related to machine operation. At times a factory may have more than one similar machine simultaneously working. In such case, a group machine hour rate may be calculated.

## 7. Treatment of Under and Over Absorbed Overheads in Cost Accounting

Under or Over Absorption = Actual Overheads - Absorbed Overheads

- ✓ Under or Over Absorption happens due to the use of pre-determined rate for absorption.
- ✓ If Actual Overheads > Absorbed Overheads = Under Absorption
- ✓ If Absorbed Overheads > Actual Overheads = Over Absorption
- ✓ It should be noted that Production Overheads absorbed and not Production Overheads incurred is considered while preparing cost sheet.
- ✓ Hence at the end of the year treatment should be given in cost sheet and cost ledger accounts for the under or over Absorbed Overheads.
- ✓ There are three ways to handle over or under absorption:
  - Write off (in case of under absorption) or write back (in case of over absorption) to the Profit and Loss Account. This treatment is valid if most of the overhead items are related to time.
  - Carry forward to the next period through a reserve account - this method is not recommended on the logic that it is inconsistent with Accounting Standard
  - Use of supplementary rates - to adjust the effect to the cost of sales, finished stocks and work in progress stocks. This sound logical as it does not carry forward the unabsorbed or over absorbed overheads to the next accounting period entirely. It aims at splitting the total effect between the cost of sale (which is charged to current year's profits) and stocks (which are carried forward to the next year).

### Supplementary Absorption Rate

- ✓ When **under or over absorption** is treated as **product cost** a portion of it is **charged to stocks** using **supplementary rate**.
- ✓ **Procedure** to Apportion the under or over absorption **due to Normal Price Level Changes** using **Supplementary overhead rate**.

**Step 1:** Apportion to **entire production** during the period using a **Supplementary overhead rate**.

**Step 2:** Supplementary rate =  $\text{Amount of under or over absorption} \div \text{Quantity Produced}$

**Step 3:** Quantity Produced =  $\text{Quantity sold} + \text{Closing Finished Goods} + (\text{Closing W I P} \times \text{Degree of completion})$

**Step 4:** The **apportioned amount** is transferred to

**Quantity Sold** - Cost of Sales A/c

**Closing Finished Goods** - Finished Goods Control A/c

**Closing W I P** - W I P Control A/c

- ✓ **Journal Entry** for under absorption apportionment using **supplementary rate**.

Cost of Sales A/c Dr

Finished Goods Control A/c Dr

WIP Control A/c Dr

Costing Profit and Loss A/c (Period Cost) Dr

To Production Overheads A/c.

## 8. Core Theory Topics

| Collection of Overheads |  |
|-------------------------|--|
| 1.                      | <b>Stores Requisitions</b><br>For <b>indirect materials</b> , shows <b>standing order number</b> and <b>department</b> . |
| 2.                      | <b>Time/Job Cards</b><br>For <b>indirect labour</b> allocation.  |
| 3.                      | <b>Invoices</b><br>For services and stores; recorded in <b>Purchase Journal</b> .  |
| 4.                      | <b>Cash Book</b><br>For <b>petty expenses</b> .  |
| 5.                      | <b>Subsidiary Records</b><br>For <b>non-cash items</b> like depreciation, notional rent.                                 |

## Codification of Overheads

|    |   |
|----|---|
| 1. | <b>Definition</b><br>Assigning numbers (or letters) to overheads to group, allocate, and analyze costs effectively. |
| 2. | <b>Objective</b><br>Facilitate overhead allocation, apportionment, and control.                                     |

## Methods of Codification

|    |   |
|----|---|
| 1. | <b>Alphabetical</b><br>Based on letters (e.g., R for Rent). |
| 2. | <b>Mnemonic</b><br>Easy to memorize codes.                  |
| 3. | <b>Numerical</b><br>Most common in manufacturing.           |
| 4. | <b>Decimal</b><br>Scalable and flexible.                    |
| 5. | <b>Alphanumeric</b><br>Combination of letters and numbers.  |
| 6. | <b>Color</b><br>Using color codes to categorize items.      |

## Classification of Overheads

|    |  |
|----|--|
|    | <b>Element-wise (CAS - 3)</b>  |
| 1. | <b>Indirect Material</b><br>E.g., lubricants, nuts & bolts.                                |
| 2. | <b>Indirect Labour</b><br>E.g., wages of supervisors, watchmen.                            |
| 3. | <b>Indirect Expenses</b><br>E.g., rent, taxes, insurance, electricity, selling expenses.   |
| 4. | <b>Function-wise</b><br>Production, Administration, Selling & Distribution, R&D overheads. |
| 5. | <b>Behavioral (for analysis only)</b><br>Fixed, Variable, Semi-variable overheads.         |

## Functional Classification of Overheads (as per CAS)

| Function                            | Definition   | Key Examples  | CAS Reference       |
|-------------------------------------|--|---|---------------------|
| 1. Production (Factory) Overheads   | Indirect costs incurred in the <b>production process</b> or rendering of services. | Indirect <b>materials</b> , indirect <b>wages</b> , factory <b>rent</b> , factory <b>depreciation</b> , factory <b>insurance</b> , etc. | CAS - 3             |
| 2. Administrative Overheads         | Costs relating to <b>general management and administration</b> .                   | Office <b>salaries</b> , printing, <b>stationery</b> , legal <b>expenses</b> , audit fees, admin office <b>rent</b> , etc.              | CAS - 11 (Para 4.3) |
| 3. Selling Overheads                | Costs related to <b>selling and marketing</b> of goods or services.                | Sales <b>commissions</b> , <b>advertising</b> , sales travel, sales office rent, <b>promotional</b> expenses.                           | CAS - 15 (Para 4.9) |
| 4. Distribution Overheads           | Costs from <b>dispatch to delivery</b> of product to end customer.                 | <b>Freight</b> , packaging, warehousing, <b>delivery</b> vehicle <b>fuel</b> , inventory handling, <b>loading &amp; unloading</b> .     | CAS - 15 (Para 4.4) |
| 5. Research & Development Overheads | Costs incurred on <b>research and innovation</b> activities.                       | <b>Lab</b> experiments, prototype <b>development</b> , product <b>testing</b> , R&D <b>salaries</b> .                                   | CAS - 18            |

## Distinction: Selling vs Distribution Overheads

| Criteria        | Selling Overheads  | Distribution Overheads  |
|-----------------|--|---|
| 1. Focus        | <b>Promotional</b> and <b>customer-</b> convincing efforts | Movement of <b>products</b> from plant to <b>customer</b>         |
| 2. Nature       | Advertising, sales force, promotions                       | <b>Warehousing</b> , transportation, <b>delivery logistics</b>    |
| 3. Timing       | Incurred <b>before sale</b>                                | Incurred <b>after sale</b> (or post-manufacture, pre-consumption) |
| 4. Sales Impact | Affects <b>customer buying decisions</b>                   | Affects <b>timely and efficient delivery</b>                      |

| Research & Development Overheads |   |
|----------------------------------|---|
| 1.                               | <b>Pure/Basic Research</b><br>General study to improve <b>knowledge base</b> , not linked to specific products. |
| 2.                               | <b>Applied Research</b><br>Practical application of knowledge - <b>product/process enhancement</b> .            |
| 3.                               | <b>Development</b><br>From applied research to <b>commercial production readiness</b> .                         |

| Accounting Treatment for R&D Costs |   |
|------------------------------------|---|
| 1.                                 | <b>Immediate Charging Off</b><br>When R&D cost benefits are not realizable or are uncertain.                |
| 2.                                 | <b>Capitalization</b><br>If R&D leads to <b>long-term benefit</b> , it may be <b>amortized over years</b> . |
| 3.                                 | <b>Deferment</b><br>When benefits are expected <b>within 2-3 years</b> , defer and allocate.                |

### Cross Classification Chart of Overheads

| Function / Element     | Indirect Material               | Indirect Labour            | Indirect Expenses                                  |
|------------------------|---------------------------------|----------------------------|--|
| Production Overheads   | Lubricants, cleaning supplies   | Foreman, machine operators | Factory rent, depreciation, insurance              |
| Admin Overheads        | Stationery, printer supplies    | Office clerks, admin staff | Audit fees, telephone, office rent                 |
| Selling Overheads      | Demo materials, product samples | Sales personnel            | Advertising, marketing campaign costs              |
| Distribution Overheads | Packaging, pallets              | Warehouse handlers         | Freight, warehouse rent, loading/unloading charges |
| R&D Overheads          | Lab chemicals, prototypes       | Scientists, R&D engineers  | Product testing, lab equipment depreciation        |

### Cross Classification of Overheads by Function and Element of Cost

| Function  | Material   | Labour   | Expenses  |
|---|--|--|---|
| 1. Factory / Production / Manufacturing / Works Overheads | Nuts & bolts, consumables, lubricants, welding electrodes, cleaning materials, nails, threads, ropes, etc. | Salaries and wages to foremen, supervisors, inspectors, maintenance workers, idle time wages | Factory lighting and heating, factory rent, power and electricity, factory insurance, machinery depreciation, repairs |

|                             |  |   |   |
|-----------------------------|--|---|---|
| 2. Administrative Overheads | Printing and stationery, office supplies   | Salaries of office staff, managers, directors; employees in departments such as IT, Audit, Taxation | Office rent, insurance, telephone, fax, travel, legal fees, depreciation on office assets                                 |
| 3. Selling Overheads        | Price lists, catalogues, mailers, advertising materials (leaflets, danglers, samples, gifts, exhibition items) | Salaries and commission of sales staff and managers, bonuses linked to sales schemes                | Sales office rent and expenses, travel, marketing subscriptions, bad debts, showroom insurance, cash discounts, brokerage |
| 4. Distribution Overheads   | Secondary packing materials, items used in delivery vans   | Salaries of delivery staff like drivers, dispatch clerks, logistics managers                        | Carriage outward, freight, warehouse rent and insurance, fuel, vehicle insurance, delivery van depreciation               |

### 1. Principles of Apportionment of Overhead Cost

|    |  |
|----|--|
| 1. | <p><b>Services Rendered</b></p> <p>Overheads are apportioned based on the extent of service received from service departments by production departments.</p> |
| 2. | <p><b>Ability to Pay</b></p> <p>Overheads assigned based on a department's income-generating capacity. Difficult to determine practically.</p>               |
| 3. | <p><b>Survey / Analysis Method</b></p> <p>Used when other bases are not viable; relies on survey data (e.g., postage cost by usage).</p>                     |
| 4. | <p><b>Efficiency Method</b></p> <p>Based on production targets. Higher efficiency = lower unit cost; inefficiency leads to higher cost.</p>                  |

### 2. Capacity Levels (as per CAS - 2)

|    |  |
|----|--|
| 1. | <p><b>Installed Capacity (Ideal / Theoretical)</b></p> <p>Max capacity for which plant is designed. No allowance for downtime. Defined in Para 4.4 of CAS-2.</p> |
|----|--|

|    |  |
|----|--|
| 2. | <b>Practical Capacity</b><br>Installed capacity minus <b>unavoidable internal interruptions</b> (repairs, holidays).<br>Typically <b>75-85%</b> of installed. Also called <b>Actual Capacity</b> . |
| 3. | <b>Actual Capacity Utilization</b><br>Actual output achieved ÷ <b>Installed capacity</b> × 100. Defined in <b>Para 4.2</b> of CAS-2.   |
| 4. | <b>Normal Capacity</b><br><b>Sustainable average output</b> over a period under <b>normal conditions</b> , allowing for planned maintenance. Defined in <b>Para 4.5</b> of CAS-2.                  |

### 3. Selection of Overheads Recovery Rate

|    |   |
|----|---|
| 1. | <b>Nature of Product / Process</b><br>Different products/processes need different <b>absorption bases</b> . |
| 2. | <b>Type of Overheads</b><br>Fixed vs variable affects choice of <b>absorption method</b> .                  |
| 3. | <b>Organizational Setup</b><br>Departmental/cost centre division impacts rate structure.                    |
| 4. | <b>Managerial Policy &amp; Needs</b><br>Flexibility as per internal <b>policy or conditions</b> .           |
| 5. | <b>Accuracy vs Cost</b><br>Trade-off between <b>accuracy</b> and <b>cost of implementation</b> .            |

### Features of a Good Rate

- ✓ Simple and practical
- ✓ Economical
- ✓ Stable over time
- ✓ Time-based
- ✓ Preferably departmental
- ✓ Homogeneous base
- ✓ Relevant to main production factor

### 4. Under / Over Absorption of Overheads

| Causes                                      | Examples                         |
|---|----------------------------------|
| Wrong <b>estimation</b> of overheads        | Forecast <b>error</b>            |
| Wrong estimation of <b>production</b> level | <b>Incorrect</b> base            |
| <b>Unforeseen</b> production changes        | Shift in method or <b>layout</b> |
| Unexpected <b>capacity</b> variations       | Breakdown or <b>surge</b>        |
| <b>Seasonal</b> variations                  | <b>Power</b> /fuel spikes        |
| Application on <b>Normal</b> Capacity       | While <b>actual</b> may vary     |

| Treatment Methods                 | When Used   |
|-----------------------------------|---|
| Write-off / Write-back to P&L     | If <b>overheads are time-related</b> and small in value                     |
| Carry Forward via Reserve Account | <b>Not recommended</b> (inconsistent with <b>Accounting Standards</b> )     |
| Use of Supplementary Rates        | <b>Adjusts costs</b> of finished goods, WIP & cost of sales proportionately |

## 5. Reporting of Overheads

| Presentation                                 | Details                                     |
|--|---|
| Overheads to be shown under separate heads   | e.g., Production, Administration, Marketing |
| Element-wise & Behaviour-wise classification | Presented if material                       |
| Over/Under absorption                        | To be shown in Reconciliation Statement     |

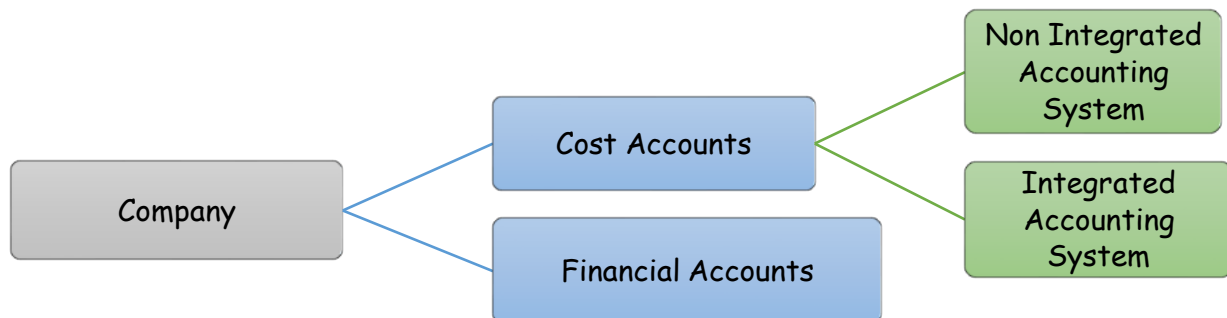
## 6. Disclosure Requirements (if material &amp; quantifiable)

| Disclosure Item                 | Explanation  |
|---------------------------------|--|
| Basis of assignment             | How overheads are apportioned to cost objects                  |
| Foreign exchange overheads      | Overheads incurred in foreign currency                         |
| Related party transactions      | Overheads linked to resources from/supplied to related parties |
| Subsidies / Grants / Incentives | Deductions from overheads must be disclosed                    |
| Recoveries / Credits            | Must be reported clearly                                       |
| Abnormal costs excluded         | Any non-standard or abnormal overheads                         |
| Unabsorbed overheads            | To be disclosed separately                                     |

## CHAPTER 5: COST BOOK KEEPING

### 1. Introduction

- ✓ Maintaining **cost** records is of prime **importance**, particularly due to legal provisions outlined in the **Companies Act, 2013**, and the **Companies (Cost Records and Audit) Rules, 2014**.
- ✓ Several reasons underscore the **significance** of **cost records** in India, some of which may be outlined below:
  - **Legal Compliance**
  - **Government Regulations**
  - **Cost Audit Requirement**



### 2. Non - Integrated Accounting System

- ✓ **Non-integrated** cost accounting is a **specialized accounting** system that maintains **separate ledgers** for **cost** accounts and **financial** accounts within an organization.
- ✓ **Unlike integrated** systems that **consolidate** cost and financial information, the non-integrated approach **focuses** solely on capturing **transactions** related to the **production** or provision of specific products or services.
- ✓ **Unlike financial** accounting, non-integrated systems **exclude** certain **elements** such as general expenses, **purchases**, and **balance** sheet items like fixed **assets**, **debtors**, and creditors. The exclusion of these items results in a simplified set of accounts.
- ✓ The **representation** of the **excluded** items is **consolidated** into a single account known as the **cost ledger** control account.

#### Principal Ledgers in non-integrated system

- ✓ In a **non-integrated** cost accounting system, **two separate** sets of books are **maintained**: one for **cost** accounts and the other for **financial** accounts. The cost accounts in this system do **not** show **personal** accounts and are concerned with **impersonal** accounts, i.e., real and nominal accounts.
- ✓ The **principal financial ledgers** are:
  - **Stores Ledger**

- **Work-in-Progress** Ledger
- **Finished Goods** Ledgers
- **Wages Control** Account
- **Factory Overheads** Control Account
- **Finished Goods** Control Account
- **Administration Overheads** Control Account
- **Selling and Distribution Overheads** Control Account
- **Cost of Sales** Account
- **Costing Profit and Loss** Account
- **Overheads Adjustment** Account

**Note:** Overhead Adjustment Account: Sometimes, this account is maintained to capture the under absorption/over absorption of overheads. The Net balance in this account is transferred to costing profit and loss account. When this account is not maintained the under/over absorption is transferred to costing profit and loss account from the respective overheads account.

### 3. Journal Entries in Non-Integrated Accounting System

#### A. Journal Entries related to Raw Materials

| Particulars   | Debit (₹) | Credit (₹) |
|---|-----------|------------|
| <b>Purchases of Raw Materials made:</b>                 | xxx       |            |
| Stores Ledger Control A/c                      Dr       |           | xxx        |
| To General Ledger Adjustment A/c                        |           |            |
| <b>Direct Material Issued for Production:</b>           | xxx       |            |
| WIP A/c    Dr |           | xxx        |
| To Stores Ledger Control A/c                            |           |            |
| <b>Material Returned to Stores Ledger Control:</b>      | xxx       |            |
| Stores Ledger Control A/c                      Dr       |           | xxx        |
| To WIP A/c  |           |            |
| <b>Raw Material Return made to Supplier:</b>            | xxx       |            |
| General Ledger Adjustment A/c              Dr           |           | xxx        |
| To Stores Ledger Control A/c                            |           |            |
| <b>Direct Material Purchased by Factory:</b>            | xxx       |            |
| WIP A/c    Dr |           | xxx        |
| To General Ledger Adjustment A/c                        |           |            |
| <b>Indirect Material Issued for Production:</b>         | xxx       |            |

|   |    |     |     |
|---|----|-----|-----|
| Production Overheads A/c                                | Dr |     | xxx |
| To Stores Ledger Control A/c                            |    |     |     |
| <b>Abnormal Raw Material Loss:</b>                      |    | xxx |     |
| Abnormal Loss A/c                                       | Dr |     | xxx |
| To Stores Ledger Control A/c                            |    |     |     |
| <b>Transfer of Raw Material from one Job to Another</b> |    | xxx |     |
| Transferee Job A/c                                      | Dr |     | xxx |
| To Transferor Job A/c                                   |    |     |     |

## B. Journal Entries related to Wages

| Particulars                      | Debit (₹) | Credit (₹) |
|----------------------------------|-----------|------------|
| <b>Incurrence of Wages:</b>      |           |            |
| Wages Control A/c                | Dr        | xxx        |
| To General Ledger Adjustment A/c |           |            |
| <b>Utilization of wages:</b>     |           |            |
| WIP A/c                          | Dr        | xxx        |
| Production Overhead A/c          | Dr        | xxx        |
| Administrative Overhead A/c      | Dr        | xxx        |
| Selling Overhead A/c             | Dr        |            |
| Abnormal Loss A/c                | Dr        |            |
| To Wages Control A/c             |           |            |

## C. Journal Entries related to Overheads

| Particulars                               | Debit (₹) | Credit (₹) |
|---|-----------|------------|
| <b>Production Overhead Incurred:</b>      |           |            |
| Production Overhead A/c                   | Dr        | xxx        |
| To General Ledger Adjustment A/c          |           | xxx        |
| <b>Administrative Overhead Incurred:</b>  |           |            |
| Administrative Overhead A/c               | Dr        | xxx        |
| To General Ledger Adjustment A/c          |           | xxx        |
| <b>Selling Overhead Incurred:</b>         |           |            |
| Selling Overhead A/c                      | Dr        | xxx        |
| To General Ledger Adjustment A/c          |           | xxx        |
| <b>Absorption of Production Overhead:</b> |           |            |

|  |    |     |     |
|--|----|-----|-----|
| WIP A/c<br>To Production Overhead A/c                | Dr | xxx | xxx |
| <b>Absorption of Administrative Overhead:</b>        |    |     |     |
| Cost of Sales A/c<br>To Administrative Overhead A/c  | Dr | xxx | xxx |
| <b>Absorption of Selling Overhead:</b>               |    |     |     |
| Cost of Sales A/c<br>To Selling Overhead A/c         | Dr | xxx | xxx |
| <b>Under Absorption of Production Overheads:</b>     |    |     |     |
| Cost of Sales A/c                                    | Dr | xxx |     |
| Finished Goods A/c                                   | Dr | xxx |     |
| W I P A/c  | Dr | xxx |     |
| To Production Overheads A/c                          |    |     | xxx |
| <b>Under Absorption of Administrative Overheads:</b> |    |     |     |
| Costing Profit and Loss A/c                          | Dr | xxx |     |
| To Administrative Overhead A/c                       |    |     | xxx |
| <b>Under Absorption of Selling Overheads:</b>        |    |     |     |
| Costing Profit and Loss A/c                          | Dr | xxx |     |
| To Selling Overhead A/c                              |    |     | xxx |

## D. Other Transactions

| Particulars                              |    | Debit (₹) | Credit (₹) |
|--|----|-----------|------------|
| <b>Completed Goods:</b>                  |    |           |            |
| Finished Goods Control A/c               | Dr | xxx       |            |
| To W I P Control A/c                     |    |           | xxx        |
| <b>Cost of Sales of Completed Goods:</b> |    |           |            |
| Cost of Sales A/c                        | Dr | xxx       |            |
| To Finished Goods Control A/c            |    |           | xxx        |
| <b>Sale of Completed Goods:</b>          |    |           |            |
| General Ledger Adjustment A/c            | Dr | xxx       |            |
| To Costing Profit and Loss A/c           |    |           | xxx        |

| Sl. No. | Particulars  | Debit (₹) | Credit (₹) |
|---------|--|-----------|------------|
| 1.      | <b>Materials purchased</b><br>Stores Ledger Control a/c Dr<br>To General Ledger Adjustment a/c   | xxx       | xxx        |
| 2.      | <b>Materials purchased for a special job</b><br>Work in Progress Control a/c Dr<br>To General Ledger Adjustment a/c  | xxx       | xxx        |
| 3.      | <b>Issue of direct materials to production department</b><br>Work in Progress Control a/c Dr<br>To Stores Ledger Control a/c   | xxx       | xxx        |
| 4.      | <b>Issue of indirect materials to production department</b><br>Overheads Control a/c Dr<br>To Stores Ledger Control a/c  | xxx       | xxx        |
| 5.      | <b>Materials returned to supplier</b><br>General Ledger Adjustment a/c Dr<br>To Stores Ledger Control a/c  | xxx       | xxx        |
| 6.      | <b>Materials returned from production department</b><br>Stores Ledger Control a/c Dr<br>To Work in Progress Control a/c  | xxx       | xxx        |
| 7.      | <b>Materials transferred from one job to another</b><br>Transferee Job a/c (WIP Ledger) Dr<br>To Transferor Job a/c (WIP Ledger)<br>(Note: No entry in Control A/cs) | xxx       | xxx        |
| 8.      | <b>Total salaries and wages paid</b><br>Wages Control a/c Dr<br>To General Ledger Adjustment a/c   | xxx       | xxx        |
| 9.      | <b>Allocation of direct and indirect labour</b><br>Work in Progress Control a/c Overheads Control a/c<br>Dr<br>To Wages Control a/c                                  | xxx       | xxx        |
| 10.     | <b>Recording of direct expenses</b><br>Work in Progress Control a/c Dr<br>To General Ledger Adjustment a/c   | xxx       | xxx        |
| 11.     | <b>Overheads incurred/accrued</b><br>Overheads Control a/c Dr<br>To General Ledger Adjustment a/c  | xxx       | xxx        |

|     |  |  |  |
|-----|--|--|--|
| 12. | <b>Adjustment of under/over absorption of overheads</b><br>Overheads Control a/c Dr xxx<br>To Overheads Suspense a/c xxx       |  |  |
| 13. | <b>Finished goods produced</b><br>Finished Goods Stock Ledger Control a/c Dr xxx<br>To Work in Progress Control a/c xxx        |  |  |
| 14. | <b>Finished goods sold at cost</b><br>Cost of Sales a/c Dr xxx<br>To Finished Goods Stock Ledger Control a/c xxx               |  |  |
| 15. | <b>Finished goods sold at total sales value</b><br>General Ledger Adjustment a/c Dr xxx<br>To Costing Profit and Loss a/c xxx  |  |  |
| 16. | <b>Sales returns recorded</b><br>Costing Profit and Loss a/c Dr xxx<br>To General Ledger Adjustment a/c xxx                    |  |  |
| 17. | <b>Total cost to make and sell</b><br>Cost of Sales a/c Dr xxx<br>To Costing Profit and Loss a/c xxx                           |  |  |
| 18. | <b>Under absorption of overheads (not yet adjusted)</b><br>Costing Profit and Loss a/c Dr xxx<br>To Overheads Suspense a/c xxx |  |  |
| 19. | <b>Over absorption of overheads (not yet adjusted)</b><br>Overheads Suspense a/c Dr xxx<br>To Costing Profit and Loss a/c xxx  |  |  |
| 20. | <b>Profit recorded</b><br>Costing Profit and Loss a/c Dr xxx<br>To General Ledger Adjustment a/c xxx                           |  |  |

## 4. Integrated Accounting

- ✓ **Integrated** Accounting is a system where there is a singular set of **records** being maintained for **cost** and **financial** transactions. It eliminates the need for **separate** accounts in cost accounting and financial accounting.
- ✓ This streamline **results** in the **consolidation** of Profit & Loss Accounts, leading to the preparation of a **single** Profit & Loss Account.
- ✓ This integrated approach **facilitates** a comprehensive **understanding** of the **cost** of each unit and **fulfills** the legal obligation for **balance** sheet preparation.

✓ In **integrated system**, all **accounts necessary** for showing **classification of cost** will be used **but** the **cost ledger control account** of **non-integrated accounting** is **replaced** by use of following accounts:

- **Bank** account
- **Receivables** (Debtors) account
- **Payables** (Creditors) account
- Provision for **depreciation** account
- **Fixed assets** account
- **Share capital** account

## 5. Comparative Journal Entries

| Sl. No. | Transactions  | Financial Accounts                          | Cost Accounts  | Integral Accounts                                    |
|---------|---|---|--|--|
| 1.      | Credit <b>purchase</b> of Material                            | Purchases A/c Dr<br>To Creditors            | Material Control A/c Dr<br>To G. L. Adjustment A/c   | Material Control A/c Dr<br>To Creditors A/c          |
| 2.      | <b>Cash</b> purchase of Material                              | Purchases A/c Dr<br>To Cash / Bank A/c      | Material Control A/c Dr<br>To G. L. Adjustment A/c   | Material Control A/c Dr<br>To Cash / Bank A/c        |
| 3.      | Purchase of <b>special material</b> for direct use in job     | Purchases A/c Dr<br>To Cash / Creditors A/c | WIP Control A/c Dr<br>To G. L. Adjustment A/c        | WIP Control A/c Dr<br>To Cash / Creditors A/c        |
| 4.      | Purchase of materials for <b>repairs</b>                      | Purchases A/c Dr<br>To Cash / Creditors A/c | Factory OH Control A/c Dr<br>To G. L. Adjustment A/c | Factory OH Control A/c Dr<br>To Cash / Creditors A/c |
| 5.      | Materials <b>returned</b> to suppliers                        | Creditors A/c Dr<br>To Purchases A/c        | G. L. Adjustment A/c Dr<br>To Material Control A/c   | Creditors A/c Dr<br>To Material Control A/c          |
| 6.      | Payment to <b>creditors</b> for supplies made                 | Creditors A/c Dr<br>To Cash / Bank A/c      | No Entry   | Creditors A/c Dr<br>To Cash / Bank A/c               |
| 7.      | <b>Issue</b> of direct materials to <b>production shop</b>    | No Entry                                    | WIP Control A/c Dr<br>To Materials Control A/c       | WIP Control A/c Dr<br>To Material Control A/c        |
| 8.      | Issue of <b>indirect</b> materials to production <b>shops</b> | No Entry                                    | Factory OH Control A/c Dr<br>To Material Control A/c | Factory OH Control A/c Dr<br>To Material Control A/c |
| 9.      | <b>Return</b> of direct                                       | No Entry                                    | Material Control A/c Dr<br>To WIP Control A/c        | Material Control A/c Dr<br>To WIP Control A/c        |

|     |   |  |   |   |
|-----|---|--|---|---|
|     | materials to stores   |  |   |   |
| 10. | Return of <b>indirect</b> materials to stores               | No Entry                                   | Material Control A/c Dr<br>To Factory OH Control A/c  | Material Control A/c Dr<br>To Factory OH Control A/c  |
| 11. | Materials transferred from <b>one</b> job to another        | No Entry                                   | No Entry  | No Entry  |
| 12. | Adjustment of normal <b>depreciation</b> in material stocks | No Entry                                   | Factory OH Control A/c Dr<br>To Material Control A/c  | Factory OH Control A/c Dr<br>To Material Control A/c  |
| 13. | Adjustment of normal <b>surplus</b> in material stocks      | No Entry                                   | Material Control A/c Dr<br>To Factory OH Control A/c  | Material Control A/c Dr<br>To Factory OH Control A/c  |
| 14. | Payment of <b>Wages</b>                                     | Wages Control A/c Dr<br>To Cash / Bank A/c | Wages Control A/c Dr<br>To G L Adjustment A/c   | Wages Control A/c Dr<br>To Cash / Bank A/c  |
| 15. | Analysis of <b>distribution</b> of wages                    | No Entry                                   | WIP Control A/c Dr<br>Factory OH Control A/c Dr<br>Admin OH Control A/c Dr<br>S&D OH Control A/c Dr<br>To Wages Control A/c | WIP Control A/c Dr<br>Factory OH Control A/c Dr<br>Admin OH Control A/c Dr<br>S&D OH Control A/c Dr<br>To Wages Control A/c |
| 16. | Payment of <b>Expenses</b>                                  | Expenses A/c Dr<br>To Cash / Bank A/c      | Factory OH Control A/c Dr<br>Admin OH Control A/c Dr<br>S&D OH Control A/c Dr<br>To G L Adjustment A/c                      | Factory OH Control A/c Dr<br>Admin OH Control A/c Dr<br>S&D OH Control A/c Dr<br>To Cash / Bank A/c                         |
| 17. | Recording of <b>Depreciation</b>                            | Depreciation A/c Dr<br>To Asset A/c        | Factory OH Control A/c Dr<br>Admin OH Control A/c Dr<br>S&D OH Control A/c Dr<br>To G L Adjustment A/c                      | Factory OH Control A/c Dr<br>Admin OH Control A/c Dr<br>S&D OH Control A/c Dr<br>To Asset A/c                               |
| 18. | Absorption of <b>Factory</b> Overheads                      | No Entry                                   | WIP Control A/c Dr<br>To Factory OH Control A/c   | WIP Control A/c Dr<br>To Factory OH Control A/c   |
| 19. | <b>Spoiled /</b> Defective work                             | No Entry                                   | Costing Profit & Loss A/c Dr<br>To WIP Control A/c  | Costing Profit & Loss A/c Dr<br>To WIP Control A/c  |

|     |   |                                       |  |   |
|-----|---|---------------------------------------|--|---|
| 20. | Recording of Cost of <b>Jobs</b> completed    | No Entry                              | Finished Goods Control A/c<br>Dr<br>To WIP Control A/c           | Finished Goods Control A/c<br>Dr<br>To WIP Control A/c      |
| 21. | Recording of Cost of <b>Goods</b> Sold        | No Entry                              | Cost of Sales A/c Dr<br>To Finished Goods Control A/c            | Cost of Sales A/c Dr<br>To Finished Goods Control A/c       |
| 22. | Recording of <b>Sales</b>                     | Cash / Debtors A/c Dr<br>To Sales A/c | G. L. Adjustment A/c Dr<br>To Costing P & L A/c                  | Cash / Debtors A/c Dr<br>To Profit and Loss A/c             |
| 23. | Absorption of <b>Administration</b> Overheads | No Entry                              | Finished Goods Control A/c<br>Dr<br>To Admin OH Control A/c      | Finished Goods Control A/c<br>Dr<br>To Admin OH Control A/c |
| 24. | Absorption of <b>Selling</b> Overheads        | No Entry                              | Cost of Sales A/c Dr<br>To S & D OH Control A/c                  | Cost of Sales A/c Dr<br>To S & D OH Control A/c             |
| 25. | Under <b>absorption</b> of Overheads          | No Entry                              | Costing Profit and Loss A/c<br>Dr<br>To Overheads Adjustment A/c | Profit and Loss A/c Dr<br>To Overheads Adjustment A/c       |
| 26. | <b>Over</b> absorption of Overheads           | No Entry                              | Overheads Adjustment A/c<br>Dr<br>To Costing Profit and Loss A/c | Overheads Adjustment A/c<br>Dr<br>To Profit and Loss A/c    |

## 6. Reconciliation of Cost and Financial Accounts

- ✓ When the **cost** and **financial** accounts are **kept separately**, it is imperative that these should be **reconciled** to make the **cost accounts reliable**.
- ✓ It is necessary for **reconciliation** of the **two sets** of **accounts** that sufficient details are available to locate the **differences** and the **reasons** for the **same**.
- ✓ These **items** of **differences** are either **added** or **subtracted** from the **profit** as shown by one of the accounts.
- ✓ The **reconciliation** of the **balances** of **two sets** of **accounts** is possible by preparing a **Memorandum Reconciliation Account**.

1. Ascertainment of profit as per Financial Accounts

2. Ascertainment of profit as per Cost

3. Reconciliation of both the Profits

## A. Causes of Differences in Financial and Cost Accounts

a) Items included in Financial Accounts only-

Purely Financial Expenses:

- Interest on loans or bank mortgages.
- 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
- Income tax, donations, subscriptions
- Expenses of the company's share transfer office, if any.

Purely Financial Income:

- Interest received on bank deposits, loans and investments
- Dividends received
- Profits on the sale of fixed assets and investments
- Transfer fee received.
- Rent receivables

b) Item included in Cost Accounts only (notional expenses):

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

c) Items whose treatment is different in the two sets of accounts:

- ✓ There are chances that certain items are treated differently in the two sets of accounts.
- ✓ cost accounting may use a different method of depreciation than what is allowed under financial accounting.

d) Varying basis of valuation:

- ✓ It is another factor which sometimes is responsible for the difference.
- ✓ It is well known that in financial accounts stock are valued either at cost or market price, whichever is lower. But in Cost Accounts, stocks are only valued at cost.

## 7. Procedure of Reconciliation (Statement Format)

| Particulars  | Adjustment                  |
|--|-----------------------------|
| Profit as per Financial Accounts   | Starting Point              |
| Add:   |                             |
| 1. Items of income in Cost Accounts but not in Financial Accounts                                    | Add                         |
| 2. Items of expenditure in Financial Accounts but not in Cost Accounts                               | Add                         |
| 3. Excess income shown in Cost Accounts over Financial Accounts                                      | Add                         |
| 4. Excess expenditure shown in Financial Accounts over Cost Accounts                                 | Add                         |
| 5. Under absorption of overheads in Cost Accounts  | Add                         |
| 6. Overvaluation of closing stock in Cost Accounts   | Add                         |
| 7. Undervaluation of opening stock in Cost Accounts  | Add                         |
| Less:  |                             |
| 1. Items of income in Financial Accounts but not in Cost Accounts                                    | Less                        |
| 2. Items of expenditure (like interest on capital, rent on owned premises) in Cost but not Financial | Less                        |
| 3. Excess expenditure in Cost Accounts over Financial Accounts                                       | Less                        |
| 4. Excess income in Financial Accounts over Cost Accounts  | Less                        |
| 5. Over absorption of overheads in Cost Accounts   | Less                        |
| 6. Undervaluation of closing stock in Cost Accounts  | Less                        |
| 7. Overvaluation of opening stock in Cost Accounts   | Less                        |
| Result   | Profit as per Cost Accounts |

## 8. Core Theory Topics

### Basic Features of Non-Integral System (Non-Integrated Accounting System)

| S. No. | Feature  |
|--------|--|
| 1.     | Separate ledgers are maintained for Cost Accounts and Financial Accounts.  |
| 2.     | Like Financial Accounting, it is also based on the Double Entry System.  |
| 3.     | There are no Personal Accounts in cost books, as they do not deal with outsiders.  |
| 4.     | Cost Accounts deal only with Impersonal Accounts (i.e., Real and Nominal Accounts).                                      |
| 5.     | In Real Accounts, only stock items are shown in Cost Accounts.   |
| 6.     | Nominal Account transactions are recorded in detail to ascertain Income and Expenditure.                                 |
| 7.     | A Cost Ledger (main ledger) is maintained along with various Subsidiary Ledgers.   |
| 8.     | Since systems are not integrated, some transactions may appear only in Financial Ledgers and others only in Cost Ledger. |

9. Costing profit or loss differs from Financial profit or loss, so Reconciliation between the two is essential.

## Reasons for Difference in Profits - Cost Accounts vs Financial Accounts

| Aspect                    | Cost Accounts  | Financial Accounts  |
|---------------------------|--|---|
| 1. Scope of Transactions  | Focus on production-related transactions: direct costs, indirect costs, and overheads related to operational activities. | Cover all financial transactions: including operational, financing, investing, and non-operational income and expenses. |
| 2. Timing of Recognition  | Recognize costs when incurred, usually on an accrual basis, emphasizing production timing.                               | Follow GAAP and recognize income/expenses either on accrual or cash basis, emphasizing periodicity.                     |
| 3. Inventory Valuation    | May apply standard costing, activity-based costing, or other internal valuation methods, affecting cost of goods sold.   | Follow accounting standards (e.g., AS, Ind AS) for inventory valuation, which may differ from cost methods.             |
| 4. Treatment of Overheads | Allocate overheads using predetermined rates or cost drivers based on production relevance.                              | Overheads may be allocated differently or may include additional non-production overheads.                              |
| 5. Non-Operational Items  | Exclude non-operational items; focus solely on core business costs.  | Include non-operational items like interest, taxes, and extraordinary items, impacting the net profit.                  |

## Specific Items of Difference - Cost Accounts vs Financial Accounts

| Category                              | Description  | Examples  |
|---------------------------------------|--|---|
| (i) Items shown in Financial Accounts | Items recorded only in Financial Accounts but excluded from Cost Accounts. These can either increase or decrease profit. |   |
| A. Purely Financial Charges           | Expenses not related to cost of production.  | a) Loss on sale of Fixed Assets<br>b) Loss on Investments, Discount on Debentures<br>c) Interest on loans<br>d) Expenses for issue/transfer of shares |
| B. Appropriation of Profits           | Distributions made from profit, not part of cost.  | a) Donations, Charities<br>b) Income Tax<br>c) Dividend Paid  |

|   |   |   |
|---|---|---|
|   |   | d) Transfer to Reserves   |
| C. Writing off Intangible & Fictitious Assets | Non-productive costs written off in financials.   | a) Goodwill<br>b) Patents and Copyrights<br>c) Advertisement<br>d) Preliminary Expenses                                     |
| D. Pure Financial Incomes                     | Incomes not related to production or operations.  | a) Rent Received, Profit on Sale of Fixed Assets<br>b) Share Transfer Fees<br>c) Interest Received<br>d) Dividends Received |
| (ii) Items shown only in Cost Accounts        | Items recorded only in Cost Accounts, not in Financial Accounts. These are notional or imputed costs. | a) Interest on Capital Employed<br>b) Rent for Own Premises   |

## Over or Under Absorption of Overheads

|      |  |
|------|--|
| i)   | <b>Absorption Basis</b><br>In Cost Accounts, overheads are absorbed based on a predetermined rate (estimated).   |
| ii)  | <b>Actual vs Estimated</b><br>In Financial Accounts, only actual expenses incurred are recorded.   |
| iii) | <b>Resulting Difference</b><br>This difference between absorbed and actual overheads causes Over-Absorption or Under-Absorption, leading to profit variations. |
| iv)  | <b>Other Reasons for Differences</b><br>Different basis of Stock Valuation and Depreciation Methods used in cost and financial accounts.                       |

## Objectives of Reconciliation

|    |   |
|----|---|
| a) | To ensure mathematical accuracy and reliability of Cost Accounts.                     |
| b) | To assist in proper cost control and accurate ascertainment.                          |
| c) | To identify reasons for profit/loss differences shown in Cost and Financial Accounts. |
| d) | To ensure the correct profit or loss in Financial Accounts.                           |
| e) | To ensure a true and fair view of the Balance Sheet.                                  |

## Essential Features of Integrated Accounting System

|    |  |
|----|--|
| 1. | Financial transactions not needed for cost accounting (e.g., internal cost transactions, prepayments, accruals) are recorded separately.           |
| 2. | Stores Control Account is debited with the cost of stores purchased, and credited to Cash or Sundry Creditors depending on payment mode.           |
| 3. | Wages Control Account is debited with wages paid, and a contra-credit is given to the Cash/Bank Account.   |
| 4. | Overhead expenses are debited to the Overheads Control Account, and credited to Cash, Bank, or Sundry Creditors.                                   |
| 5. | Materials, labour costs, and overheads are posted to control accounts after cost analysis and then transferred to Work-in-Progress (WIP) accounts. |
| 6. | Advance payments are credited, and accruals are debited to respective control accounts through contra entries.                                     |
| 7. | In capital expenditure analysis, the Capital Asset Account is debited, and the respective Control Accounts are credited.                           |

## Advantages of Integrated Accounting System

|    |  |
|----|--|
| 1. | No need for reconciliation between costing and financial profit, as only one Profit & Loss A/c exists. |
| 2. | Clerical workload is reduced, since only one set of books is maintained.                               |
| 3. | Information retrieval is easier and faster.  |
| 4. | The system is cost-effective by centralizing the accounting function.                                  |

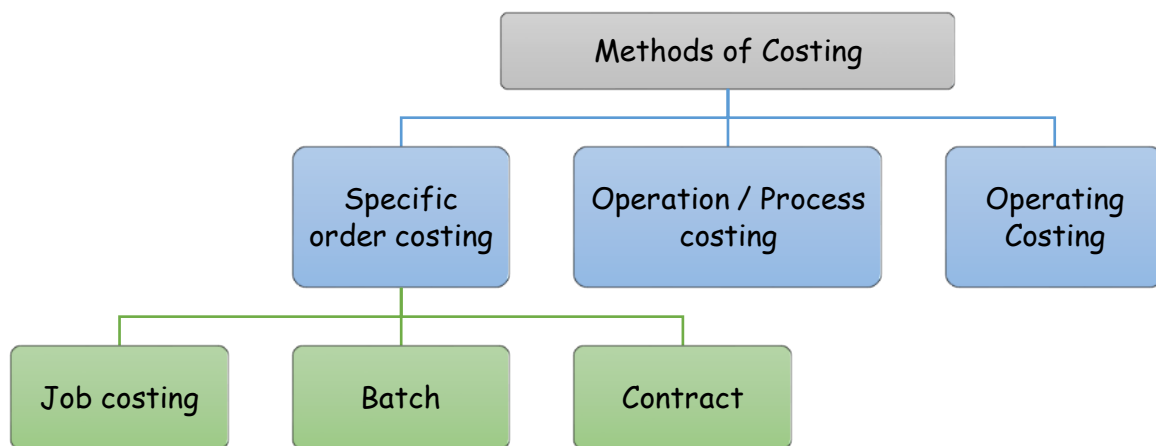
## Pre-requisites for Integrated Accounts

|    |  |
|----|--|
| 1. | Management must decide the extent of integration—either up to factory cost or full integration of all accounts.                        |
| 2. | A suitable coding system should be implemented for both financial and cost accounting needs.   |
| 3. | A proper routine should be established for provisions, prepaid expenses, accruals, and adjustments during interim account preparation. |
| 4. | Effective coordination between financial and costing departments is essential for smooth processing of records.                        |

## CHAPTER 6: JOB COSTING

### 1. Introduction

- ✓ The **main purpose** of costing is to ascertain the **cost** of **production**, control costs, and improve **efficiency rates**.
- ✓ In this regard, the **methods** of costing used are of **critical** importance. Different **industries** use different methods of costing depending on their **nature** of **work**.
- ✓ The methods of costing refer to the various **techniques** and **approaches** employed by businesses to determine the cost of **producing** goods or services.



### 2. Job Costing

- ✓ **Job Costing** is the **accounting system** that traces costs to **individual units** or to specific jobs, contracts, or **batches** of goods.
- ✓ The method is also known by various other **names**, such as specific **order** costing, production order costing, job lot costing or lot costing.

A job is a '**customer** order or task of **relatively** short **duration**'.

Job costing is a '**form** of specific **order** costing where costs are **attributed** to individual **jobs**'.

CIMA Official Terminology

### 3. Preparation of Job Cost Sheet

#### A. Material Cost

- ✓ **Material** used during the **production** process of a **job** and identified with the job is the direct material. The cost of such material consumed is the **direct material** cost. Direct material cost is **identifiable** with the job and is charged directly. The source document for **ascertaining** this cost is the **material requisition** slip from which the quantity of material consumed can be worked out.

- ✓ Cost of the same can be worked out according to any method of pricing of the issues like first in first out (FIFO), last in first out (LIFO) or average method as per the policy of the organisation.
- ✓ The actual material cost can be compared with standard cost to find out any variations between the two. However, as each job may be different from the other, standardization is difficult but efforts can be made for the same.

### B. Direct Labour Cost

- ✓ This cost is also identifiable with a particular job and can be worked out with the help of 'Job Time Tickets' which is a record of time spent by a worker on a particular job. The 'job time ticket' has the record of starting time and completion time of the job and the time required for the job can be worked out easily from the same.
- ✓ Calculation of wages can be done by multiplying the time spent by the hourly rate. Here also standards can be set for the time as well as the rate so that comparison between the standard cost and actual cost can be very useful.

### C. Direct Expenses

- ✓ Direct expenses are chargeable directly to the concerned job. The invoices or any other document can be marked with the number of job and thus the amount of direct expenses can be ascertained.

### D. Manufacturing Overheads

- ✓ This is really a challenging task as the overheads are all indirect expenses incurred for the job. Because of their nature, overheads cannot be identified with the job and so they are apportioned to a particular job on some suitable basis.
- ✓ Pre-determined rates of absorption of overheads are generally used for charging the overheads. This is done on the basis of the budgeted data. If the predetermined rates are used, under/over absorption of overheads is inevitable and hence rectification of the same becomes necessary.

Budgeted Manufacturing Overheads Rate =  $\frac{\text{Budgeted Manufacturing Overheads}}{\text{Budgeted Quantity or Cost for Allocation}}$

### E. Work-in-progress

- ✓ On the completion of a job, the total cost is worked out by adding the overheads expenses in the direct cost. In other word, the overheads are added to the prime cost.
- ✓ The cost sheet is then marked as 'completed' and proper entries are made in the finished goods ledger. If a job remains incomplete at the end of an accounting period, the total cost incurred on the same becomes the cost of work-in-progress.

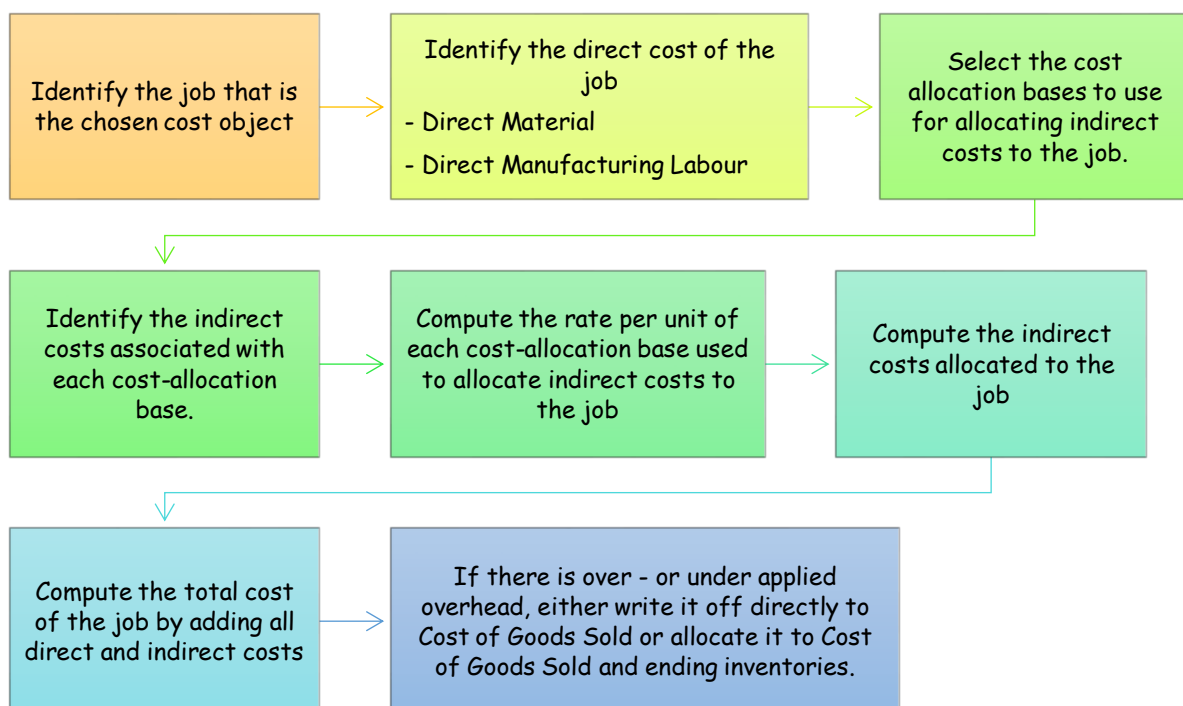
- ✓ The **work-in-progress** at the end of the **accounting** period becomes the closing work-in-progress and the same becomes the **opening** work-in-progress at the beginning of the next accounting period. A separate account for work-in-progress is maintained.

## F. Completion of Jobs

- ✓ **Postings** of direct **material**, direct **labour**, direct **expenses** and manufacturing overheads costs to the cost **sheet** for a job or production order are made **periodically** throughout the run of the job or order.
- ✓ The **completion** report is an indication that the **manufacturing** operations are over and further expenditure on the **job** should cease so as to ensure that the cost sheet is **closed**.
- ✓ On the **completion** of a particular job, total cost relating to the job as per job cost sheet is transferred to finished stock account by **debiting** finished stores **control** account and **crediting** work-in-progress control account.

## G. Job Cost Card/ Sheet

- ✓ **Each job** is dissimilar to other due to **specific** and **customized** requirements. In order to ascertain cost of a particular job, it is necessary to record all the **expenditure** related to a job separately.
- ✓ For this **purpose**, job cost card / sheet is used. **Job** cost card is a **cost** sheet, where the quantity of **materials** issued, **hours** spent by different class of employees, amount of other expenses and share of overheads are recorded.
- ✓ This is **helpful** in knowing the total cost, **profitability** etc. of a job. A format of job cost card / sheet is shown below.



## Format of Job Cost Sheet

### Job Cost Sheet

|                                    |       |         |            |                       |           |         |            |           |       |         |  |
|------------------------------------|-------|---------|------------|-----------------------|-----------|---------|------------|-----------|-------|---------|--|
| Description:                       |       |         |            | Job No.:              |           |         |            |           |       |         |  |
| Customer's No.:                    |       |         |            | Quantity:             |           |         |            |           |       |         |  |
| Reference No.:                     |       |         |            | Date of commencement: |           |         |            |           |       |         |  |
|                                    |       |         |            | Date of delivery:     |           |         |            |           |       |         |  |
|                                    |       |         |            | Date of finishing:    |           |         |            |           |       |         |  |
| Material                           |       |         |            | Labour                |           |         |            | Overheads |       |         |  |
| Date                               | Deptt | *MR No. | Amount (₹) | Date                  | Deptt     | *MR No. | Amount (₹) | Date      | Deptt | *MR No. | Amount (₹)   |
|                                    |       |         |            |                       |           |         |            |           |       |         |  |
| Total                              |       |         |            | Total                 |           |         |            | Total     |       |         |  |
| Summary                            |       |         |            |                       |           |         |            |           |       |         | For the Job:<br>Units Produced:<br>Cost per Unit:<br>Remarks:<br>Prepared by:<br>Checked by: |
| Cost                               |       |         | Estimated  | Actuals               | Variances |         |            |           |       |         |  |
| Direct Material                    |       |         |            |                       |           |         |            |           |       |         |  |
| Direct Wages                       |       |         |            |                       |           |         |            |           |       |         |  |
| Direct Expenses                    |       |         |            |                       |           |         |            |           |       |         |  |
| Prime Cost                         |       |         |            |                       |           |         |            |           |       |         |  |
| Factory Overheads                  |       |         |            |                       |           |         |            |           |       |         |  |
| Works Cost                         |       |         |            |                       |           |         |            |           |       |         |  |
| Administration Overheads           |       |         |            |                       |           |         |            |           |       |         |  |
| Cost of Production                 |       |         |            |                       |           |         |            |           |       |         |  |
| Selling and Distribution Overheads |       |         |            |                       |           |         |            |           |       |         |  |
| Cost of Sales                      |       |         |            |                       |           |         |            |           |       |         |  |

\*MR No. - Material Requisition

Reports in Job Costing System - Basically, **two** types of reports are generated after preparation of the **job cost sheet**.

(i) Report on profits on completed jobs

A statement may be prepared **monthly** to indicate the gross **profit** earned on all jobs **completed** during the month. This **statement** is useful for the management for evaluating past **performances**. Net profit analysis may also be made in a similar manner if administration, selling and distribution **overheads** for the job are included in the **statement**.

(ii) Report on cost variances

If cost estimates are **developed**, a cost variance report showing the **deviations** of actual costs from the **estimated** costs may be prepared in order to indicate the **significant** differences and to carry out thorough investigation. The report may be prepared

separately for a job, or for a department showing the variances in respect of all jobs undertaken by the department during a period.

## 4. Core Theory Topics

### Features of Job Costing

|    |  |
|----|--|
| 1. | <p><b>Separate Identity</b><br/>Each job retains a distinct identity throughout the production process.</p>  |
| 2. | <p><b>Specific Customer</b><br/>The job is carried out for a particular customer, not for the general market.</p>  |
| 3. | <p><b>Non-repetitive Production</b><br/>Production is customised, not repetitive or continuous.</p>  |
| 4. | <p><b>Order-Based Production</b><br/>Work starts only after receiving the order from the customer.</p>   |
| 5. | <p><b>Customised Execution</b><br/>Job is performed as per customer's specifications and treated as a separate cost unit.</p>                                  |
| 6. | <p><b>Short Duration</b><br/>Usually, jobs are completed in a short time. Large jobs may take more than a year.</p>  |
| 7. | <p><b>Documentation &amp; Profit Tracking</b><br/>A Job Cost Sheet is prepared and Job Register maintained. Profit or loss is calculated after completion.</p> |

### Advantages of Job Costing

|    |   |
|----|---|
| 1. | <p><b>Real-time Cost Tracking</b><br/>Cost of materials, labour, and overheads can be tracked daily, weekly, or as needed while the job is ongoing.</p>   |
| 2. | <p><b>Profitability Analysis</b><br/>On job completion, costs under each element are available and can be compared with selling prices to assess profitability and decide on continuing or discontinuing product lines.</p> |
| 3. | <p><b>Historical Cost Records</b><br/>Past job costs, recorded by orders, departments, or machines, help in future planning and price estimation for similar jobs.</p>  |
| 4. | <p><b>Budgetary Control</b><br/>Use of predetermined overhead rates promotes a system of budgetary control, leading to better cost management.</p>  |
| 5. | <p><b>Overhead Variance Analysis</b></p>  |

|    |  |
|----|--|
|    | At period-end, <b>actual overheads</b> are compared to <b>applied overheads</b> , allowing analysis of <b>overhead variances</b> .                                 |
| 6. | <b>Defective Work Identification</b><br><b>Spoilage</b> and <b>defective work</b> can be easily traced to the <b>specific job or product</b> .                     |
| 7. | <b>Ideal for Cost Plus Contracts</b><br>Particularly suited for <b>cost-plus contracts</b> , where <b>selling price</b> is based directly on <b>actual costs</b> . |

## Limitations of Job Costing

|    |  |
|----|--|
| 1. | <b>High Cost</b><br>Job costing involves <b>more clerical work</b> , making it a <b>costlier</b> method.                                 |
| 2. | <b>Increased Error Risk</b><br>Due to <b>extensive clerical processes</b> , there's a <b>higher chance of mistakes</b> .                 |
| 3. | <b>Historical Data</b><br>Costs are recorded <b>after they occur</b> , so the data is <b>historical</b> , not real-time.                 |
| 4. | <b>Lacks Scientific Basis</b><br>The system reflects <b>actual incurred costs</b> and <b>doesn't use scientific estimation methods</b> . |

## Preparation of Job Cost Sheet - Simplified Table

| Component               | Description  | Key Terms & Notes   |
|-------------------------|--|---|
| Direct Material Cost    | Cost of materials <b>directly identifiable</b> with the job.           | Material <b>Requisition Slip</b> , FIFO/LIFO/Average, Standard vs. <b>Actual</b>  |
| Direct Labour Cost      | Wages for labor <b>directly</b> involved in the job.                   | Job Time <b>Ticket</b> , Time × Hourly Rate, Standard Cost <b>Comparison</b>      |
| Direct Expenses         | Expenses <b>directly</b> linked to the job (e.g., design, hiring).     | Invoices/ <b>Receipts</b> , Job Code Marking                                      |
| Manufacturing Overheads | <b>Indirect</b> costs (e.g., rent, power) apportioned to <b>jobs</b> . | <b>Pre-determined</b> Overhead Rate, Budgeted Basis, Under/Over <b>Absorption</b> |
| WIP (Work-in-Progress)  | Cost of <b>incomplete</b> jobs at period-end.                          | Closing WIP = <b>Opening</b> WIP for next period, <b>Separate</b> WIP Account     |
| Completion of Jobs      | <b>Transfer</b> cost of completed job to Finished <b>Stock</b> .       | <b>Finished</b> Stock Control A/c, WIP Control A/c, Cost Sheet <b>Closure</b>     |

|                           |  |  |
|---------------------------|--|--|
| Job Cost Card / Sheet     | Document to record all job-specific costs. | Material Qty, Labour Hours, Overheads, Helps Track Profitability |
| Reports Generated         | Two main reports are prepared:             |  |
| (i) Profit Report         | Shows gross/net profit of completed jobs.  | Used for Performance Evaluation                                  |
| (ii) Cost Variance Report | Compares actual vs. estimated costs.       | Helps identify deviations, enables corrective actions            |

## CHAPTER 7: BATCH COSTING

### 1. Introduction

- ✓ **Batch costing** is a costing **method** that involves grouping and **allocating** costs to a specific quantity of **products** produced in a **single** batch or production **run**. It aims to calculate the cost per unit by spreading the total **cost** of the batch over the number of **units** produced within that batch.
- ✓ **Batch costing** is commonly employed in **industries** where products are produced in **batches** rather than **continuously**. It provides a more **accurate** reflection of the costs associated with each specific **production** run.

**Batch costing** is a 'form of specific **order** costing where costs are attributed to **batches** of product (unit costs can be calculated by **dividing** by the number of **products** in the batch)'.  
**CIMA Official Terminology**

#### Illustration

Epitome Pen Inc. and has the following budgeted overheads for the year, based on normal activity levels.

| Production Departments | Budgeted Overheads (₹) | Budgeted activity  |
|------------------------|------------------------|--------------------|
| Welding                | 12,000                 | 3,000 labour hours |
| Assembly               | 20,000                 | 2,000 labour hours |

Selling and administrative overheads are 25% of factory cost. An order for 500 Brazils made as Batch 38, incurred the following costs.

Materials ₹ 24,000

Labour 200 hours in the Welding Department at ₹ 5 per hour

400 hours in the Welding Department at ₹ 10 per hour

₹ 1,000 was paid for the hire of x-ray equipment for testing the accuracy of the welds.

Required

Calculate the cost per unit for Batch 38.

**Solution:**

The first step is to calculate the overhead absorption rate for the production departments.

Welding = ₹ 12,000 ÷ 3,000 = ₹ 4 per labour hour

Assembly = ₹ 20,000 ÷ 2,000 = ₹ 10 per labour hour

Total Cost - Batch 38

| Particulars               | ₹     | ₹      |
|---------------------------|-------|--------|
| Direct material           |       | 24,000 |
| Direct expenses 200 × ₹ 5 | 1,000 | 1,000  |

|   |       |        |
|---|-------|--------|
| Direct labour 400 × ₹ 10                              | 4,000 | 5,000  |
| Prime Cost  |       | 30,000 |
| Overheads 200 × ₹ 4                                   | 800   |        |
| 400 × ₹ 10  | 4,000 | 4,800  |
| Factory Cost  |       | 34,800 |
| Selling and administrative Cost (25% of factory cost) |       | 8,700  |
| Total Cost  |       | 43,500 |

Cost per unit = ₹ 43,500 ÷ 500 = ₹ 87

## 2. Economic Batch Quantity (EBQ)

- ✓ Economic Batch Quantity (EBQ) is a measure used in **batch** costing to determine the **quantity** of units that can be produced at the minimum **average** cost in a given **batch** or product run. It is also known as **Optimum Batch Quantity (OBQ)** and is a refinement of the Economic Order Quantity (EOQ) model. **EBQ** takes into account the set-up cost, **annual** demand, production time, and the **carrying** charge rate per year to calculate the most cost-**effective** batch size.
- ✓ Setting up and **Processing** Costs
  - **Large** the Batch size: **Lower** the set-up costs because of few **batches**.
  - **Smaller** the Batch size : **Higher** the set-up costs because of more **batches**
- ✓ **Carrying** Costs
  - **Large** the Batch size: **Higher** the carrying costs because of **high** average **inventory**.
  - **Smaller** the Batch size : **Lower** the carrying costs because of **low** average **inventory**.

$$\text{Economic Batch Quantity} = \sqrt{\frac{2AS}{C}}$$

Where, A = Annual demand for the product

S = Setting up cost per batch

C = Carrying cost per unit of production

## 3. Core Theory Topics

### Essential Features of Batch Costing

|    |   |
|----|---|
| a) | Cost Unit<br>Each <b>batch</b> is treated as a <b>separate cost unit</b> .                          |
| b) | Cost Accumulation<br>All <b>costs are accumulated</b> and calculated <b>batch-wise</b> .            |
| c) | Batch Identification<br>A <b>Batch Cost Sheet</b> is maintained with a <b>unique batch number</b> . |
| d) | Unit Costing  |

$\text{Cost per unit} = \text{Total batch cost} \div \text{Number of units in the batch.}$

Batch Costing is used where **similar items** are produced in **predefined lots** or batches. It is commonly used in:

### Applications of Batch Costing

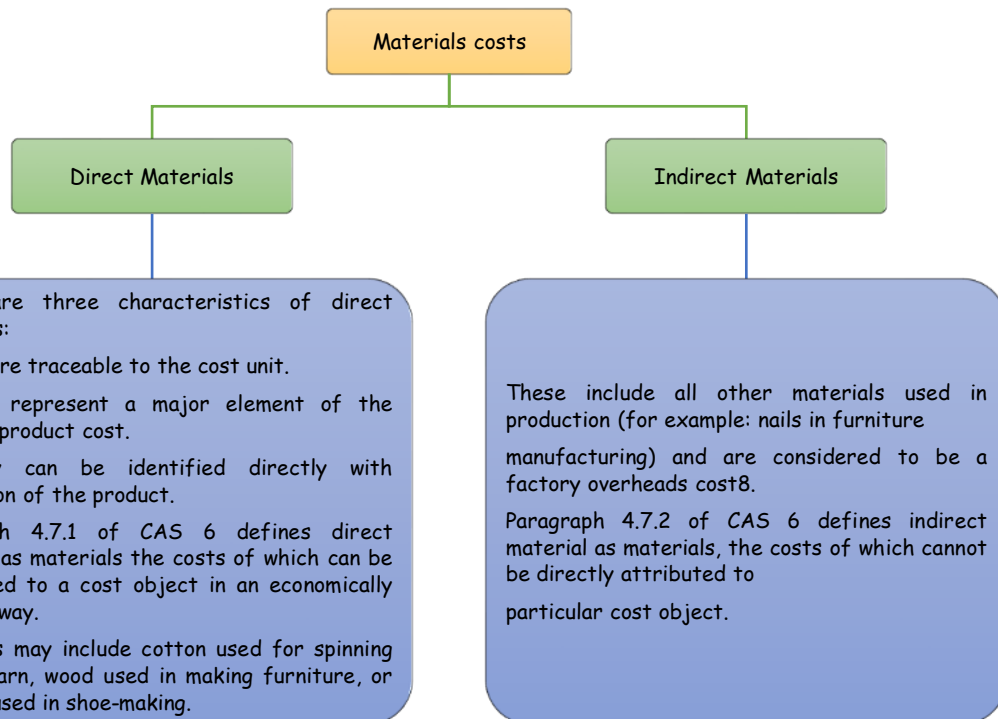
- |    |   |
|----|---|
| a) | Readymade Garments<br>Clothing produced in <b>specific batch sizes</b> .  |
| b) | Pharmaceutical/Drug<br>Medicines manufactured in <b>bulk batches</b> .    |
| c) | Spare Parts<br>Auto or machinery parts made in <b>standardised lots</b> . |
| d) | Toys Manufacturing<br>Toys produced in <b>lots for retail supply</b> .    |
| e) | Tyres and Tubes<br>Tyres/tubes produced in <b>production batches</b> .    |

## CHAPTER 8: MATERIAL COSTS

### 1. Introduction

#### Material Cost

- ✓ **Material** cost is the cost of **materials** used to **manufacture** a product or provide a service. Material is the most important **element** of cost. In most **manufacturing** organizations, **50% to 70%** of the total cost of a **product** is represented by the cost of the **material**.
- ✓ Especially for **manufacturing** sector, the **material** costs are of great **significance**. Inventory also constitutes a vital **element** in the **working capital**. So, it is conceptually equivalent to cash. **Materials**, as such, are the **substances** that are transformed into **finished goods**. Materials costs may be either **direct** or **indirect**.



#### Purchase Quantity

- ✓ Important **requirement** for an efficient system of **purchase** control is to ensure that only the **correct** quantity of **materials** is purchased. The basic factors to be considered while fixing the ordering quantity are as follows:
  - There should be no **overstocking**.
  - Materials should always be available in **sufficient quantity** to meet the requirements of production and to avoid plant shut down.
  - Purchases should be made in **economic** lots.

## Economic Order Quantity (EOQ)

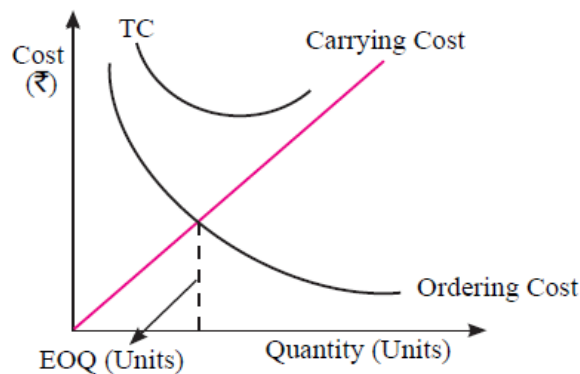
- ✓ The total costs of a material usually consist of **Buying Cost + Total Ordering Cost + Total Carrying Cost**. Economic Order Quantity is 'The size of the order for which total cost of material is **minimum**'.
- ✓ **Ordering Cost**: The costs which are **associated** with the **ordering** of **material**. It includes cost of staff posted for ordering of **goods**, expenses incurred on **transportation**, inspection **expenses** of incoming material etc.
- ✓ **Carrying Cost**: The costs for **holding** the **inventories**. It includes the cost of capital invested in **inventories**. Cost of storage, insurance etc.

$$\text{Economic Order Quantity} = \sqrt{\frac{2AO}{C}}$$

where, A = Annual demand / consumption

O = Ordering Cost per Order

C = Carrying Cost per unit per annum



## Maximum Level

- ✓ The maximum level indicates the **maximum quantity** of an item of material that can be held in stock at any time. The stock in hand is regulated in such a manner that **normally** it does **not exceed** this level.
- ✓ Maximum level will depend on the **Rules** framed by the **government** for import or procurement. If due to these and other causes **materials** are **difficult** to obtain and supplies are **irregular** the maximum level should be set **high**.

$$\text{Maximum Level} = \text{Re Order Level} + \text{Re Order Quantity} - [\text{Minimum Rate of Consumption} \times \text{Minimum Re Order Period}]$$

## Minimum Level

- ✓ The **minimum** level indicates the lowest of an item of **material** which must be maintained at all times so that there is **no stoppage** of production due to the material being not available. In fixing the **minimum** level, the following factors are to be considered:

$$\text{Minimum Level} = \text{Re Order Level} - (\text{Normal Rate of Consumption} \times \text{Normal Re-Order -Period})$$

## Re Order Level

- ✓ It is at the re-ordering level that the store keeper has to **initiate** the action to replenish the material. This level is fixed somewhere between the **maximum** and **minimum** levels in such a manner that the **difference** of quantity of the material between the **Re-Ordering Level** and **Minimum Level** will be **sufficient** to meet the requirements of production up to the time the **fresh** supply of materials is received.

Re-Ordering Level (ROL) =

Maximum Rate of Consumption × Maximum Re-Order Period (Lead Time)

Or

Minimum Level + (Normal Rate of Consumption × Normal Re-Order Period)

Or

Minimum Level + Consumption during Lead Time

## Danger Level

- ✓ It is the level at which **normal** issue of raw materials are **stopped** and only **emergency** issues are only made. This is a level fixed usually below the minimum level. When the stock **reaches** this level **very urgent** action for purchases is **indicated**.
- ✓ This **presupposes** that the minimum level contains a **cushion** to cover such **contingencies**. The normal lead time **cannot** be **afforded** at this stage. It is necessary to **resort** to unorthodox hasty **purchase** procedure resulting in **higher** purchase **cost**.

Danger Level = Normal Rate of Consumption × Maximum Re-Order Period for emergency purchases

## ABC Analysis

- ✓ **ABC analysis**, also known as Pareto analysis, is a **technique** used in inventory **management** to categorize items based on their **significance**.
- ✓ **Category 'A'** items represent **70%** of the total investment but as little as only 6% of the number of items. Maximum control must be exercised on these items. **Category 'B'** is of secondary importance and normal control procedures may be followed. **Category 'C'** comprising of **64%** in quantity but only **10%** in value, needs a simpler, less elaborate and economic system of control.

## Inventory Turnover Ratio

- ✓ **Inventory** turnover signifies a ratio of the **value** of **materials** consumed during a given period to the **average** level of inventory held during that period. The **ratio** is worked out on the basis of the following formula:

Inventory Turnover Ratio = Value of Material Consumed during the Period ÷ Value of

## Average Stock held during the Period

- ✓ A **high ratio** indicates that the item is moving fast with a **minimum investment** involved at any point of time. On the other hand, a **low ratio** indicates the **slow-moving** item.
- ✓ Thus, inventory turnover ratio may indicate **slow moving dormant** and obsolete stock highlighting the need for **appropriate managerial actions**.

## 2. Methods of Pricing Material Issues

### A. Cost Price Methods

|    |   |
|----|---|
|    |   |
| 1. | <b>FIFO (First In First Out)</b><br>Oldest stock issued first                     |
| 2. | <b>LIFO (Last In First Out)</b><br>Most recent stock issued first                 |
| 3. | <b>Base Stock Method</b><br>Maintain a base level of stock always at a fixed cost |

### B. Specific Price Method

|    |   |
|----|---|
|    |   |
| 1. | <b>Simple Average Price</b><br>Arithmetic mean of all prices available        |
| 2. | <b>Weighted Average Price</b><br>Prices weighted based on quantity purchased  |
| 3. | <b>Moving Simple Average</b><br>Periodic recalculated average without weights |
| 4. | <b>Moving Weighted Average</b><br>Periodic recalculated average using weights |

### C. Market Price Methods

|    |   |
|----|---|
|    |   |
| 1. | <b>Replacement Price Method</b><br>Current market cost to replace the item                          |
| 2. | <b>Realisable Price Method</b><br>Estimated <b>net realizable value</b> (sale value - cost to sell) |

### D. Notional Price Methods

|    |  |
|----|--|
|    |  |
| 1. | <b>Standard Price Method</b><br>Pre-set standard price used for valuation                |
| 2. | <b>Inflated Price Method</b><br>Includes an arbitrary markup (e.g., overheads or losses) |

## 3. Issues Valuation Methods

### First-in First-out (FIFO) Method:

- ✓ It is a method of pricing the issues of materials, in the **order** in which they are **purchased**. the materials are issued in the order in which they arrive in the store or the items longest in stock are **issued first**.
- ✓ Thus each **issue of material** only recovers the **purchase price** which does **not** reflect the **current market price**.

| Date | Receipts |   |      | Issues |   |     | Balance |   |      |
|------|----------|---|------|--------|---|-----|---------|---|------|
|      | Q        | P | A    | Q      | P | A   | Q       | P | A    |
| 1    | 100      | 2 | 200  |        |   |     | 100     | 2 | 200  |
| 2    | 500      | 3 | 1500 |        |   |     | 100     | 2 | 200  |
|      |          |   |      |        |   |     | 500     | 3 | 1500 |
| FIFO |          |   |      | 100    | 2 | 200 |         |   |      |
|      |          |   |      | 50     | 3 | 150 | 450     | 3 | 1350 |

### Last-in-First-out (LIFO) Method:

- ✓ It is a **method** of pricing the issues of materials on the basis of assumption that the items of the **last batch** (lot) purchased are the first to be issued. Therefore, under this method the prices of the **last batch** (lot) are used for pricing the issues, **until** it is **exhausted**, and so on.
- ✓ If however, the quantity of issue is more than the quantity of the **latest lot**, **then earlier** (lot) and its price will also be taken into consideration.

| Date | Receipts |   |      | Issues |   |     | Balance |   |      |
|------|----------|---|------|--------|---|-----|---------|---|------|
|      | Q        | P | A    | Q      | P | A   | Q       | P | A    |
| 1    | 100      | 2 | 200  |        |   |     | 100     | 2 | 200  |
| 2    | 500      | 3 | 1500 |        |   |     | 100     | 2 | 200  |
|      |          |   |      |        |   |     | 500     | 3 | 1500 |
| LIFO |          |   |      | 150    | 3 | 450 | 100     | 2 | 200  |
|      |          |   |      |        |   |     | 350     | 3 | 1350 |

### Simple Average Price Method:

- ✓ Under this method, **materials** issued are valued at **average price**, which is calculated by dividing the total of rates at which different lot of materials are purchased by total number of lots.
- ✓ In this method quantity purchased in **each lot** is **ignored**. However, the price of stock of that lot which is completely **sold out** is not considered for taking **average price**.

## Weighted Average Price Method:

- ✓ Unlike **Simple Average** Price method, this method gives due **weightage** to **quantities** also. Under this method, issue price is calculated by **dividing** sum of products of **price** and **quantity** by total number quantities.

| Date | Receipts |   |      | Issues |      |     | Balance |      |      |
|------|----------|---|------|--------|------|-----|---------|------|------|
|      | Q        | P | A    | Q      | P    | A   | Q       | P    | A    |
| 1    | 100      | 2 | 200  |        |      |     | 100     | 2    | 200  |
| 2    | 500      | 3 | 1500 |        |      |     | 600     | 2.83 | 1700 |
| 3    |          |   |      | 150    | 2.83 | 425 | 450     | 2.83 | 1275 |

## Base Stock Method:

- ✓ Minimum quantity of stock under this method is always held at a **fixed price** as reserve in the stock, to meet the state of emergency, if it arises.
- ✓ This **minimum stock** is known as **base stock** and is valued at a **price** at which the first lot of materials is received and remains unaffected by subsequent price fluctuations.

## Replacement Price Method:

- ✓ Replacement price is defined as the price at which it is possible to purchase an item, identical to that which is being **replaced** or **revalued**. Under this method, materials issued are valued at the replacement cost of the items.
- ✓ This method pre-supposes the determination of the **replacement** cost of materials at the time of each issue; viz., the **cost** at which **identical materials** could be currently **purchased**. The product cost under this method is at **current market price**, which is the main objective of the replacement price method.

## Standard Price Method:

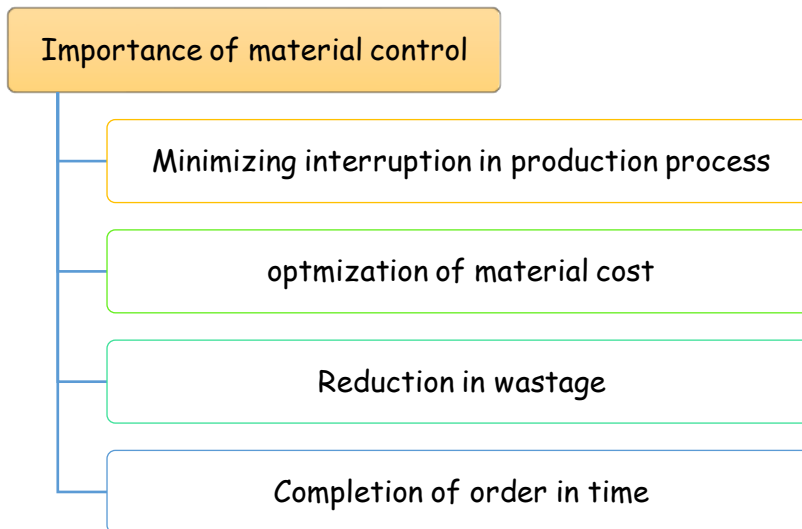
- ✓ Under this method, **materials** are priced at some **predetermined** rate of standard price **irrespective** of the **actual** purchase cost of the materials.
- ✓ **Standard** cost is usually **fixed** after taking into **consideration** the current price, anticipated **market** trends. This method **facilitates** the control of **material** cost and task of judging the **efficiency** of purchase department, but it is very **difficult** to fix the **standard** price when the **prices** fluctuate frequently.

## 4. Core Theory Topics

| Material Control |   |
|------------------|---|
| 1.               | <p><b>Definition</b></p> <p>Material control refers to a system that ensures: - Availability of required materials (right quantity and quality) - At the right time - Without excess investment in stores. It covers the entire process from ordering to consumption in production.</p> |
| 2.               | <p><b>Essential Features</b></p> <p>Effective material control requires:</p> <ol style="list-style-type: none"> <li>Limited access to inventory</li> <li>Segregation of duties</li> <li>Accurate recording</li> </ol>   |
| 3.               | <p><b>Management Viewpoint</b></p> <p>Seen as a management activity that involves: - Procuring - Handling - Utilizing inventory Requires planning, organization, and auditing of all material-related processes.</p>  |
| 4.               | <p><b>Material Control is Based On</b></p> <ol style="list-style-type: none"> <li>Physical control (safeguarding materials)</li> <li>Investment control (over inventory value)</li> </ol>   |
| 5.               | <p><b>Key Aspects</b></p> <ol style="list-style-type: none"> <li>Uninterrupted production flow</li> <li>Avoid excessive stock investments</li> </ol>  |

| Objectives of Material Control |   |
|--------------------------------|---|
| 1.                             | <p><b>Availability</b></p> <p>Ensure continuous availability of all required materials, including small but essential items (e.g., lubricating oil) to avoid production stoppage.</p> |
| 2.                             | <p><b>Proper Quality and Price</b></p> <p>Purchase materials of requisite quality at a reasonable cost; avoid inferior or overly superior quality.</p>                                |
| 3.                             | <p><b>Minimum Wastage</b></p> <p>Keep storage losses low (e.g., pilferage, rust, dust, damage).</p>   |
| 4.                             | <p><b>No Overstocking</b></p> <p>Avoid unnecessary large stocks; keep investment in inventory minimal.</p>  |
| 5.                             | <p><b>Stock Information</b></p> <p>Ensure real-time stock information for effective planning and timely replenishment.</p>  |
| 6.                             | <p><b>Minimum Process Loss</b></p>  |

Keep **wastage** during production at **minimum levels**; some loss is natural, but **efficiency** requires control.



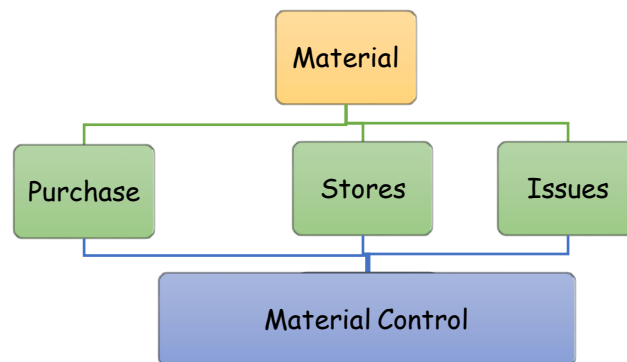
## Requisites of an Effective Material Control System

|     |   |
|-----|---|
| 1.  | <b>Coordination &amp; Cooperation</b><br>Must exist between all <b>concerned departments</b> : Purchase, Receiving, Inspection, Storage, Issues, Accounts, and Costing. |
| 2.  | <b>Standard Forms &amp; Documents</b><br>Use <b>uniform documentation</b> at all stages to ensure clarity and consistency.  |
| 3.  | <b>Classification &amp; Standardization</b><br>Proper <b>classification, coordination, standardization, and simplification</b> of materials is essential.               |
| 4.  | <b>Material Requirement Planning</b><br>Accurate <b>forecasting and planning</b> of material needs.   |
| 5.  | <b>Efficient Purchase Organization</b><br>Well-structured and <b>effective procurement system</b> in place.   |
| 6.  | <b>Budgetary Control</b><br>Apply <b>budget control</b> over all purchases to avoid overspending.   |
| 7.  | <b>Planned Storage &amp; Control</b><br>Maintain <b>physical control</b> and <b>book control</b> with proper storage procedures and documentation.                      |
| 8.  | <b>Control of Issues &amp; Utilization</b><br>Maintain <b>records</b> to monitor the <b>issue and usage</b> of materials in production.                                 |
| 9.  | <b>Internal Audit &amp; Checks</b><br>Implement <b>internal checks and audits</b> to detect errors and fraud.   |
| 10. | <b>Reporting to Management</b>  |

Regular reports on purchase, storage, and usage of materials to aid decision-making.

## Areas of Material Control

|    |  |
|----|--|
| 1. | <b>Purchase and Receipt</b><br>Control starts from procurement of materials.     |
| 2. | <b>Stores</b><br>Proper storage, safeguarding, and inventory management.         |
| 3. | <b>Issue of Material</b><br>Control on issue to production and usage efficiency. |



## Procurement of Materials - Key Questions

| Key Question               | Objective                        |
|----------------------------|----------------------------------|
| What to purchase?          | Right Material with Good Quality |
| When to purchase?          | At the Right Time                |
| Where to purchase?         | From the Right Source            |
| How much to purchase?      | Right Quantity                   |
| At what price to purchase? | At the Right Price               |

## Purchase Function - Overview

|    |   |
|----|---|
| 1. | <b>Definition</b><br>Procurement of materials of required quality and quantity at an economic price.  |
| 2. | <b>Importance</b><br>Impacts cost, efficiency, timely delivery, economy, and volume of production.  |
| 3. | <b>System Types</b> <ol style="list-style-type: none"> <li>Centralized Purchasing - Preferred due to better control and economy.</li> <li>Decentralized Purchasing - Used in some cases for location-specific needs.</li> </ol> |
| 4. | <b>Typical Choice</b><br>Most organizations opt for centralized purchasing due to its advantages outweighing disadvantages.   |

## Centralized vs. Decentralized Purchasing

| Feature                      | Centralized Purchase  | Decentralized Purchase   |
|------------------------------|---|--|
| 1. Decision-Making Authority | Centralized authority makes decisions and controls purchases.           | Distributed authority among various departments or units.                              |
| 2. Efficiency                | Streamlined processes lead to higher efficiency and cost savings.       | More flexibility, but may cause duplication of efforts and potential inefficiencies.   |
| 3. Communication             | Clear communication due to a single authority overseeing purchases.     | Communication is more complex with multiple departments managing their own purchasing. |
| 4. Volume Discounts          | Can leverage bulk buying for better volume discounts.                   | May miss out on discounts due to smaller, scattered orders.                            |
| 5. Customization             | Limited customization, as decisions are centrally made.                 | Departments have autonomy to customize purchases to suit their specific needs.         |
| 6. Adaptability              | May be slower to adapt to changes due to central approval requirements. | More responsive and adaptable to individual department needs.                          |
| 7. Supplier Relationships    | Can build strong, long-term relationships with a few key suppliers.     | Leads to diverse supplier relationships across departments.                            |
| 8. Cost Control              | Easier to monitor and control costs through centralized analysis.       | Challenging to control costs due to dispersed decision-making.                         |

## Purchasing System Selection - Key Considerations

|    |   |
|----|---|
| 1. | <p><b>Choice of System</b></p> <p>The choice between centralized and decentralized purchasing depends on the organization's needs, size, and structure.</p> |
| 2. | <p><b>Hybrid Approach</b></p> <p>Some organizations use a hybrid system—combining both centralized and decentralized elements.</p>                          |
| 3. | <p><b>Purpose of Hybrid</b></p> <p>This approach helps balance the efficiency of centralized purchasing with the autonomy of decentralized purchasing.</p>  |

## Documentation in Purchase Department - Bill of Material

|    |  |
|----|--|
| 1. | <p><b>Definition</b></p> <p>A <b>complete schedule</b> of <b>parts and materials</b> needed for a specific <b>order</b>, prepared by the <b>drawing office</b>, and issued with <b>blueprints or drawings</b>.</p> |
| 2. | <p><b>Standard Products</b></p> <p>For <b>standard products</b>, <b>pre-printed BOMs</b> are used with <b>blank spaces</b> for order-specific modifications.</p>   |
| 3. | <p><b>Details Covered</b></p> <p>Includes <b>everything</b>—from <b>bolts and nuts</b> to <b>sizes and weights</b>.</p>  |

## Purpose of Bill of Material

|    |   |
|----|---|
| a. | Gives a <b>quantitative material budget</b> estimate for a job/process, used for <b>control</b> .     |
| b. | Acts as a <b>substitute for material requisitions</b> , <b>expediting</b> the material issue process. |
| c. | Helps <b>storekeeper</b> plan <b>material purchases and issues</b> for a given period.                |
| d. | Provides the <b>basis for charging material cost</b> to specific <b>job or process</b> .              |

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|                          |                        |           |              |          |            |                           |           |           |                  |         |
|--------------------------|------------------------|-----------|--------------|----------|------------|---------------------------|-----------|-----------|------------------|---------|
| Bill of Materials        |                        |           |              |          |            |                           |           |           |                  |         |
| No.....                  |                        |           |              |          |            | Order No.....             |           |           |                  |         |
| Date.....                |                        |           |              |          |            | Job No.....               |           |           |                  |         |
| Assembly drawing no..... |                        |           |              |          |            |                           |           |           |                  |         |
| Component Parts          |                        |           | Materials    |          |            | For use of purchase dept. |           |           |                  |         |
| Symbol No.               | Description            | No. reqd. | Description  | Code No. | Qty. Reqd. | Date                      | Regn. No. | Order No. | Date of Delivery | Remarks |
|                          |                        |           |              |          |            |                           |           |           |                  |         |
| Purchase dept. copy      | Date of order Delivery |           | Prepared by: |          |            | Purchase order given by:  |           |           |                  |         |
|                          |                        |           | Checked by:  |          |            |                           |           |           |                  |         |

## Material Control Documentation - Key Forms

|    |  |
|----|--|
| 1. | <p><b>Material Requisition Note (MRN)</b></p> <p>A document issued by a <b>department</b> requesting the <b>storekeeper</b> to issue <b>specific materials</b> to a <b>job</b> or <b>standing order number</b>.</p> <ul style="list-style-type: none"> <li>✓ <b>Authorised</b> by appropriate authority.</li> <li>✓ Used to <b>credit the stores ledger</b> and <b>debit the work-in-progress/job account</b>.</li> <li>✓ Enables the <b>accounts department</b> to <b>value material issues</b>.</li> </ul> |
|----|--|



|    |   |
|----|---|
|    | <ul style="list-style-type: none"> <li>✓ Helps <b>storekeeper</b> track <b>item-wise material issues</b> during a period.</li> </ul>  |
| 2. | <p><b>Purchase Requisition Note (PRN)</b><br/>                 A <b>formal request</b> sent to the <b>Purchase Department</b> to procure materials of required <b>description, quantity, and quality</b> within a <b>specified time</b>.</p> <ul style="list-style-type: none"> <li>✓ <b>Authorises</b> purchase order issuance.</li> <li>✓ Helps plan <b>periodic/material requirement</b>.</li> <li>✓ Assists in <b>preparation of purchase budget</b> and <b>variance analysis</b>.</li> <li>✓ Raised by <b>storekeeper</b> for regular items; <b>department head</b> for special items.</li> <li>✓ Prepared in <b>three copies</b>:                         <ul style="list-style-type: none"> <li>▪ <b>Original</b>: Sent to Purchase Dept.</li> <li>▪ <b>Duplicate</b>: Retained by indenting department</li> <li>▪ <b>Triplicate</b>: Sent to approving authority</li> </ul> </li> </ul> |

### Key Questions Answered by Purchase Requisition

| S. No. | Key Question                                     |
|--------|--|
| 1.     | <b>What</b> type of material is to be purchased? |
| 2.     | <b>When</b> is the material to be purchased?     |
| 3.     | <b>How much</b> is to be purchased?              |

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|--|---------------|--------------------------|--|---------------------------|---------|
| Purchase Requisition or Indent         |               |                          |  |                           |         |
| Purchase Req. Type: Special / Regular: |               |                          |  |                           |         |
| Purchase Req. No:                      |               |                          | Purchase Requisition Date: Department: |                           |         |
| S. No.                                 | Material Code | Description of the Goods | Quantity Required                      | Material Required by date | Remarks |
|  |               |                          |  |                           |         |
| Requested by                           |               |                          | Approved by                            |                           |         |
| For use in Purchase Department         |               |                          |  |                           |         |
| Quotations from                        |               |                          |  |                           |         |
| (1)                                    |               |                          | PO Placed: Yes / No                    |                           |         |
| (2)                                    |               |                          | PO No:                                 |                           |         |
| (3)                                    |               |                          |  |                           |         |

## Factors to Consider Before Selecting a Purchase Source

|    |  |
|----|--|
| 1. | <b>Inquiry &amp; Tenders</b><br>Issue <b>inquiries</b> or <b>call for tenders/quotations</b> from potential suppliers. |
| 2. | <b>Tender Analysis</b><br>Conduct <b>comparative analysis</b> of <b>received tenders or quotations</b> .               |
| 3. | <b>Source Selection</b><br>Choose the <b>most appropriate supplier</b> based on all relevant factors.                  |
| 4. | <b>Price Fixation</b><br>Ensure <b>appropriate price</b> is fixed after evaluation.                                    |
| 5. | <b>Quality</b><br>Confirm that the supplier offers <b>required material quality</b> .                                  |
| 6. | <b>Time of Delivery</b><br>Evaluate the supplier's <b>ability to deliver on time</b> .                                 |
| 7. | <b>Terms of Payment</b><br>Consider <b>payment terms</b> (e.g., credit period, advance payment).                       |
| 8. | <b>Mode of Delivery</b><br>Assess the <b>delivery method</b> (e.g., transport, freight terms).                         |

## Purchase Order (PO) - Overview

|    |  |
|----|--|
| 1. | <b>Definition</b><br>A <b>written request</b> sent to a <b>selected supplier</b> to deliver <b>goods</b> of specified <b>quality</b> and <b>quantity</b> , as per the <b>purchase requisition</b> , at agreed <b>prices, terms, and conditions</b> . |
| 2. | <b>Nature</b><br>A <b>formal commitment</b> from the purchaser to <b>accept delivery</b> if all stated conditions are met.   |

## Key Details Included in a Purchase Order

| S. No. | Field                              |
|--------|------------------------------------|
| (a)    | <b>Purchase Order Number</b>       |
| (b)    | <b>Purchase Order Date</b>         |
| (c)    | <b>Supplier Name and Address</b>   |
| (d)    | <b>Material Code</b>               |
| (e)    | <b>Material Description</b>        |
| (f)    | <b>Grade and Other Particulars</b> |
| (g)    | <b>Quantity to be Supplied</b>     |
| (h)    | <b>Price</b>                       |
| (i)    | <b>Place of Delivery</b>           |

|     |  |
|-----|--|
| (j) | Taxes                                  |
| (k) | Terms of Payment (e.g., Credit Period) |

## Purchase Order Distribution

| Copy     | Sent To                  |
|----------|--------------------------|
| 1st Copy | Supplier                 |
| 2nd Copy | Receiving / Stores Dept. |
| 3rd Copy | Originating Department   |
| 4th Copy | Accounts Department      |
| 5th Copy | Filing / Record-Keeping  |

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Purchase Order

To

Supplier PO No:

Address PO date:

Quotation Reference:

PR No.

Please supply the following items in accordance with the instructions mentioned therein on the following terms and conditions.

| S. No. | Material Code | Material Description | Quantity | Rate per unit | Amount | Delivery Date | Remarks |
|--------|---------------|----------------------|----------|---------------|--------|---------------|---------|
|        |               |                      |          |               |        |               |         |
|        |               |                      |          |               |        |               |         |
|        |               |                      |          |               |        |               |         |

Packing and Freight

Taxes Total Amount

Delivery: Goods to be delivered at Delivery date:

Payment terms:

Authorised Signatory

## Goods Received cum Inspection Note (GRIN)

|    |  |
|----|--|
| 1. | <p><b>Purpose</b></p> <p>The <b>Stores Department</b> prepares the <b>Goods Received cum Inspection Note (GRIN)</b> after making <b>gate entry</b> and comparing the <b>received quantity</b> with the <b>Purchase Order (PO)</b>.</p> |
| 2. | <p><b>Accounting Relevance</b></p> <p>It serves as the <b>basis for accounting entries</b> in the <b>stores ledger</b> and <b>stock records</b>.</p>   |

|    |   |
|----|---|
| 3. | <p><b>Quality Control</b></p> <p>It is forwarded to the <b>Inspection Department</b> for <b>quality check</b>, who must <b>approve</b> it before the stores officially accept the material.</p>                   |
| 4. | <p><b>Payment Basis</b></p> <p>Acts as a <b>reference document</b> to process <b>supplier payments</b>. <b>Invoices</b> are verified against the GRIN for confirmation of <b>actual receipt</b>.</p>              |
| 5. | <p><b>Outstanding GRINs</b></p> <p>GRINs not yet matched with supplier invoices help the <b>Accounts Department</b> to estimate <b>year-end liabilities</b> for goods received but <b>bills not received</b>.</p> |

| Step | Flow of GRIN Usage   |
|------|--|
| 1.   | <p><b>Stores Dept.</b></p> <p>Prepares GRIN after <b>material receipt</b></p>                      |
| 2.   | <p><b>Inspection Dept.</b></p> <p>Conducts <b>quality check</b> and <b>approves</b></p>            |
| 3.   | <p><b>Accounts Dept.</b></p> <p>Uses GRIN to verify <b>supplier invoices</b></p>                   |
| 4.   | <p><b>Year-End Estimation</b></p> <p><b>Outstanding GRINs</b> help estimate <b>liabilities</b></p> |

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|----------------|---------------|------------------------------------|-------------------|-------------------|-------------------|----------------------|---------|--|
| Received from: |               | Goods Received cum Inspection Note |                   |                   |                   |                      |         |  |
| Received at:   |               | GRN No:                            |                   |                   |                   |                      |         |  |
|                |               | GR Date: PO Ref. No:               |                   |                   |                   |                      |         |  |
|                |               | Gate Entry No:                     |                   |                   |                   |                      |         |  |
| S. No.         | Material Code | Material Description               | Quantity Received | Quantity Accepted | Quantity Rejected | Reason for Rejection | Remarks |  |
|                |               |                                    |                   |                   |                   |                      |         |  |
|                |               |                                    |                   |                   |                   |                      |         |  |
|                |               |                                    |                   |                   |                   |                      |         |  |
| Prepare by     |               | Inspected by                       |                   |                   |                   |                      |         |  |
| Received by    |               | Storekeeper                        |                   |                   |                   |                      |         |  |

| Material Transfer Note (MTN) |  |
|------------------------------|--|
| 1.                           | <p><b>Definition</b><br/>A document used to <b>transfer material</b> from one <b>department/site/job</b> to another.</p>           |
| 2.                           | <p><b>Purpose</b><br/>Facilitates <b>material movement</b> when regular requisition procedures are impractical or inefficient.</p> |

| When MTN is Required |  |
|----------------------|--|
| 1.                   | <b>Urgent material need</b> —normal requisitioning may delay job completion.   |
| 2.                   | Two <b>nearby jobs</b> —normal requisitioning may cause <b>unnecessary transport costs</b> , especially for <b>heavy materials</b> . |
| 3.                   | <b>Frequent shifting</b> of materials may lead to <b>wastage or breakage</b> .   |
| 4.                   | For <b>perishable goods</b> (e.g., fruits, vegetables), <b>delay or improper storage</b> may lead to spoilage.                       |

| Material Return Note (MRN) |   |
|----------------------------|---|
| 1.                         | <p><b>Definition</b><br/>A document prepared when <b>materials are returned to the supplier</b>.</p>  |
| 2.                         | <p><b>Before GRN Entry</b><br/>If return happens <b>before Goods Received Note (GRN)</b> entry, it is <b>not recorded</b> in the <b>stores ledger</b>.</p>      |
| 3.                         | <p><b>After GRN Entry</b><br/>If return is after GRN entry, <b>Material Return Note</b> is issued to <b>exclude quantity and value</b> from stores records.</p> |

| Inventory Management and Control - Storage |   |
|--|---|
| 1.   | <p><b>Key Duties</b><br/>Ensure <b>material movement</b> (in &amp; out) happens <b>only via authorized documents</b>.</p> |
| 2.   | <p><b>Storage Efficiency</b><br/>Ensure <b>optimum space utilization</b> and <b>safe storage</b>.</p>                     |
| 3.   | <p><b>Loss Prevention</b><br/>Protect materials from <b>theft, pilferage, fire, and misappropriation</b>.</p>             |

| Classes of Stores |   |
|-------------------|---|
| 1.                | <p><b>Centralized Stores</b><br/>All materials are kept in <b>one central location</b>.</p> |

|    |   |
|----|---|
|    | <ul style="list-style-type: none"> <li>✓ Enables better control, supervision, and vigilance.</li> <li>✓ Involves higher transport cost, risk of transit loss, and delays.</li> </ul>  |
| 2. | <p><b>Decentralized Stores</b></p> <p>Independent stores are located in various departments.</p> <ul style="list-style-type: none"> <li>✓ Eliminates centralized store disadvantages.</li> <li>✓ Involves high costs, so less commonly used.</li> </ul>   |
| 3. | <p><b>Central Stores with Sub-Stores / Imprest Stores</b></p> <p>Used in large organizations with units spread out.</p> <ul style="list-style-type: none"> <li>✓ Sub-stores are located near usage points.</li> <li>✓ Operates like petty cash system (known as imprest system).</li> <li>✓ Stock replenished periodically from central stores to maintain predetermined quantity.</li> </ul> |

| Material Classification and Codification |  |
|--|--|
| 1.                                       | <p><b>Purpose</b></p> <p>Helps in easy identification, proper storage, and availability of materials when needed.</p> <p>Prevents overstocking or stock-outs.</p>                  |
| 2.                                       | <p><b>Steps</b></p> <ol style="list-style-type: none"> <li>1. Determine number and nature of material items.</li> <li>2. Group similar materials into suitable classes.</li> </ol> |

### Classification Example:

|   |   |
|---|---|
| • | <b>Broad Class:</b> Metals                            |
| • | <b>Sub-Class:</b> Mild Steel, Tool Steel, Brass, etc. |
| • | <b>Further:</b> Sheets, Bars, Angles, Rounds          |

| Common Coding Schemes |  |
|-----------------------|--|
| 1.                    | <p><b>Alphabetical</b></p> <p>Uses alphabets.</p> <p>E.g., Mild Steel Sheets → MSS</p>                                   |
| 2.                    | <p><b>Numeric</b></p> <p>Uses numbers.</p> <p>E.g., Steel → 300, Mild Steel → 310, MS Sheet → 311</p>                    |
| 3.                    | <p><b>Decimal</b></p> <p>Uses decimals to indicate sub-groups.</p> <p>E.g., Steel → 3.00, MS → 3.10, MS Sheet → 3.11</p> |
| 4.                    | <b>Block</b>   |

|    |  |
|----|--|
|    | <p><b>Blocks of numbers</b> reserved for each category.<br/>E.g., 1-999 → Raw Materials, 1000-1999 → Stores &amp; Spares</p>   |
| 5. | <p><b>Combination</b><br/>Combines <b>alphabets and numbers</b>. E.g., MS01, MS02, MS03 → Mild Steel Sheets, Bars, Strips etc. <input checked="" type="checkbox"/> <b>Most commonly used for flexibility</b></p> |

## Advantages of Classification & Codification

|      |  |
|------|--|
| i.   | <b>Easy identification and location</b> of materials.                |
| ii.  | <b>Minimizes repeated descriptions</b> in documents.                 |
| iii. | <b>Essential for mechanized accounting</b> systems.                  |
| iv.  | <b>Saves time and cost</b> in both recording and locating materials. |

## Inventory Level Fixation (Post Codification)

|    |   |
|----|---|
| 1. | <p><b>Minimum Level</b><br/>Fixed to avoid <b>stock-outs</b></p>  |
| 2. | <p><b>Maximum Level</b><br/>Set to prevent <b>overstocking</b></p>  |
| 3. | <p><b>Re-order Level</b><br/>Trigger point to <b>place new orders</b></p>   |
| 4. | <p><b>Re-order Quantity</b><br/><b>Optimal quantity</b> to be purchased</p>                                       |
| 5. | <p><b>Storekeeper Role</b><br/>Ensure <b>material stock</b> remains <b>within min-max levels</b> at all times</p> |

## 1. Perpetual Inventory System

|    |   |
|----|---|
| 1. | <p><b>Definition</b><br/><b>A system of continuous record-keeping maintained by the controlling department, showing real-time stock movement and current balance.</b></p> |
| 2. | <p><b>Key Objective</b><br/>To <b>ascertain stock balance</b> after every <b>receipt and issue</b> of materials.</p>  |
| 3. | <p><b>Tools Used</b><br/><b>Bin Card</b> and <b>Stores Ledger</b>.</p>  |
| 4. | <p><b>Physical Verification</b><br/>Done through a <b>Continuous Stock Taking</b> program.</p>  |
| 5. | <p><b>Advantages</b></p> <ul style="list-style-type: none"> <li>✓ No need for annual shutdown for stock-taking.</li> <li>✓ Enables <b>surprise checks</b>.</li> </ul>     |

- ✓ Improves accuracy and real-time tracking.

## 2. Continuous Stock Taking vs. Periodic Stock Taking

| Criteria              | Continuous Stock Taking           | Periodic Stock Taking                    |
|-----------------------|-----------------------------------|--|
| 1. Frequency          | Done throughout the year          | Done at fixed intervals (e.g., year-end) |
| 2. Surprise Checks    | Yes, items are randomly selected  | No, lacks surprise element               |
| 3. Control Efficiency | High - supports real-time control | Lower - snapshot-based                   |
| 4. Operation Impact   | No disruption to operations       | Often requires partial/total shutdown    |

## 3. VED Analysis (Vital, Essential, Desirable)

| Category     | Explanation   | Example (Car Assembly Co.) |
|--------------|---|----------------------------|
| 1. Vital     | Items whose shortage stops production; stock-out cost is very high      | Engine                     |
| 2. Essential | Absence tolerated for a few hours/day; important to continue production | Tyres                      |
| 3. Desirable | Absence doesn't halt production; needed but not urgent                  | CD Player                  |

## 4. FSN Analysis (Fast, Slow, Non-moving)

|    |   |
|----|---|
| 1. | Fast-moving (F)<br>Items used or issued frequently.               |
| 2. | Slow-moving (S)<br>Items used occasionally or infrequently.       |
| 3. | Non-moving (N)<br>Items that have no movement over a long period. |

## 5. Just-In-Time (JIT) System

|    |  |
|----|--|
| 1. | Definition<br>Inventory management philosophy aiming to eliminate waste by producing/procuring only what is needed, when needed. |
| 2. | Key Principle<br>"Right material, at the right time, at the right place, in the exact quantity."                                 |
| 3. | Benefits   |

|    |   |
|----|---|
|    | <ul style="list-style-type: none"> <li>✓ Reduces carrying cost</li> <li>✓ Minimizes wastage and overproduction</li> <li>✓ Increases operational efficiency</li> </ul> |
| 4. | <p>Challenges</p> <ul style="list-style-type: none"> <li>✓ Requires accurate demand forecasting</li> <li>✓ Vulnerable to supply chain disruptions</li> </ul>          |

## Advantages of Just-In-Time (JIT) System

|    |   |
|----|---|
| 1. | <p>Enhanced Supplier Relationship</p> <p>As inventory is minimal, firms rely heavily on timely delivery, making strong supplier coordination critical.</p>                    |
| 2. | <p>Synchronized Supply &amp; Production</p> <p>Materials arrive in regular intervals during the production day, matching real-time demand and reducing inventory holding.</p> |
| 3. | <p>Lower Working Capital Requirement</p> <p>Since minimal inventory is maintained, less capital is tied up in stock, freeing up cash for other uses.</p>                      |
| 4. | <p>Reduced Storage Space</p> <p>Direct delivery to production lines reduces the need for warehousing or storage facilities.</p>   |
| 5. | <p>Minimized Risk of Obsolescence/Damage</p> <p>Holding very little stock reduces the chances of inventory becoming obsolete, damaged, or expired.</p>                        |

## I. Valuation of Material Receipts (as per CAS - 6)

|    |  |
|----|--|
| 1. | <p>Basic Valuation</p> <p>Purchase Price + Duties, Freight, Insurance, etc.<br/>(Net of Discounts, Refundable Taxes/Duties)</p>  |
| 2. | <p>Finance Costs</p> <p>✗ Excluded from material cost</p>  |
| 3. | <p>Self-Manufactured Materials</p> <p>Include: Direct Material, Employee Cost, Factory Overheads, share of Production Admin OH<br/>Exclude: General Admin OH, Finance Cost, Marketing OH</p> |
| 4. | <p>Specific Spares</p> <p>To be capitalized with the equipment; Amortized over useful life</p>   |
| 5. | <p>Normal Losses</p> <p>Absorbed in the cost of remaining material, net of recoveries</p>  |

|    |  |
|----|--|
| 6. | Shrinkage / Moisture Gain<br>Normal variation is adjusted in material cost                   |
| 7. | Forex Conversion<br>At transaction date rate; changes post-transaction are<br>✗ not included |
| 8. | Penalties / Demurrage<br>✗ Excluded from material cost                                       |
| 9. | Grants / Subsidies<br>Reduced from material cost related to the benefit received             |

| II. Valuation of Material Issues (as per CAS - 6) |   |
|---|---|
| 1.  | Cost Flow Assumptions<br>Use consistent method: FIFO, LIFO, Weighted Average, etc.  |
| 2.  | Standard Costing Variance<br>Included in material cost if standard cost method used   |
| 3.  | Abnormal Costs<br>✗ Excluded from material cost   |
| 4.  | Transport Cost<br>Governed by CAS-5 (Equalized Cost of Transport)   |
| 5.  | Imputed Costs<br>✓ May be included, though not in financial accounts  |
| 6.  | Self-Manufactured Components<br>Same treatment as self-manufactured materials; follow CAS-4 for captive consumption                                     |
| 7.  | Scrap / Defectives<br>- Normal scrap cost: ✓ Included in cost of good units<br>- Abnormal scrap: ✗ Excluded and shown as loss (credit realisable value) |

| III. Factors Affecting Pricing of Material Issues |  |
|---|--|
| a.  | Nature of Business / Production Process        |
| b.  | Management Policy (on closing stock valuation) |
| c.  | Purchase Frequency / Price Fluctuation         |

### Material Issue Pricing Methods - Summary Table

| S. No. | Method                    | Key Features / Explanation                              | Best Used When              | Limitations   |
|--------|---------------------------|---|-----------------------------|---|
| 1.     | FIFO (First In First Out) | Oldest materials issued first; reflects historical cost | In falling price situations | ✗ Not suitable in rising prices (low stock valuation) |

|     |                          |   |   |  |
|-----|--------------------------|---|---|--|
| 2.  | LIFO (Last In First Out) | Latest materials issued <b>first</b> ; cost of production reflects <b>current prices</b>      | During <b>inflation</b> or rising prices                  | ✗ Stock valued at <b>outdated cost</b>                           |
| 3.  | Base Stock Method        | Maintains a <b>minimum reserve stock</b> at fixed price; excess valued using <b>FIFO/LIFO</b> | For <b>emergency reserves</b>                             | ✗ Not a standalone method  |
| 4.  | Specific Price Method    | Materials issued at <b>actual purchase price</b> for <b>specific jobs</b>                     | For <b>custom jobs / projects</b>                         | ✗ Complex when <b>issues are frequent</b>                        |
| 5.  | Simple Average Price     | Avg. of unit prices <b>without considering quantities</b>                                     | When <b>price fluctuation</b> is low                      | ✗ Ignores <b>purchase quantity</b>                               |
| 6.  | Weighted Average Price   | Total cost ÷ total quantity; considers <b>cost &amp; quantity</b>                             | When prices <b>vary significantly</b>                     | ✗ Complex if frequent purchases                                  |
| 7.  | Moving Simple Average    | Avg. of prices for a <b>fixed past period</b> (e.g., last 3 months)                           | For <b>smoothed pricing over time</b>                     | ✗ Ignores quantity in past purchases                             |
| 8.  | Moving Weighted Average  | Avg. of <b>weighted prices</b> over fixed periods   | For <b>consistent cost tracking</b>                       | ✗ Needs periodic updating  |
| 9.  | Replacement Price Method | Issue price = <b>current market price</b> of same material                                    | When <b>real-time cost tracking</b> is required           | ✗ Market price may be <b>hard to determine</b> before each issue |
| 10. | Realisable Price Method  | Price = <b>selling value</b> in the market  | When goods are to be <b>resold</b> or in volatile markets | ✗ Market prices may be <b>unstable</b>                           |
| 11. | Standard Price Method    | Issues at <b>predetermined standard price</b>   | For <b>variance analysis / cost control</b>               | ✗ Challenging in frequent price changes                          |
| 12. | Inflated Price Method    | Issue price is <b>inflated</b> to cover losses like <b>evaporation</b>                        | For <b>perishable / shrinkable goods</b>                  | ✗ May <b>distort cost</b> if not carefully applied               |

| Goal                        | Recommended Method             |
|-----------------------------|--------------------------------|
| Stability in cost           | Weighted Average               |
| Job-specific tracking       | Specific Price                 |
| Reflect market cost         | Replacement / Realisable Price |
| Control & efficiency checks | Standard Price                 |
| Emergency reserve valuation | Base Stock Method              |
| Handling losses             | Inflated Price Method          |

## Valuation of Work in Progress (WIP)

| Method   | Components Included   | Key Features  | Impact   | Suitability                                 |
|--|---|---|--|---|
| a. Prime Cost Method   | <ul style="list-style-type: none"> <li>✓ Direct Material</li> <li>✓ Direct Labour</li> </ul>  | <ul style="list-style-type: none"> <li>☑ <b>Conservative</b> approach</li> <li>✗ <b>Excludes Overheads</b></li> </ul>                       | <ul style="list-style-type: none"> <li>⬆ Overstates current period cost</li> <li>⬇ Understates future costs</li> </ul> | Rarely used due to understatement of cost   |
| b. Prime Cost + Variable Overheads (Marginal Costing Method) | <ul style="list-style-type: none"> <li>✓ Direct Material</li> <li>✓ Direct Labour</li> <li>✓ <b>Variable Overheads only</b></li> </ul>    | <ul style="list-style-type: none"> <li>☑ Fixed overheads treated as <b>period costs</b></li> <li>⊖ Not included in WIP</li> </ul>           | Aligns with <b>Marginal Costing</b> principles   | Useful for <b>internal decision-making</b>  |
| c. Total Cost Method (Most Common)                           | <ul style="list-style-type: none"> <li>✓ Direct Material</li> <li>✓ Direct Labour</li> <li>✓ <b>Variable + Fixed Overheads</b></li> </ul> | <ul style="list-style-type: none"> <li>☑ <b>Comprehensive &amp; accurate</b></li> <li>☑ WIP bears <b>proportionate overheads</b></li> </ul> | Reflects <b>true production cost</b>   | <b>Generally accepted &amp; widely used</b> |

## Physical Verification & Inventory Classification

| Type  | Explanation   | Key Points  |
|---|---|---|
| Continuous Physical Verification (Perpetual Inventory Counting) | Ongoing <b>physical</b> counting of items           | <ul style="list-style-type: none"> <li>✓ <b>Real-time</b> accuracy</li> <li>✓ Supports <b>Perpetual Inventory System</b></li> </ul> |
| Periodic Physical Verification (Periodic Stocktaking)           | Physical counts <b>conducted</b> at fixed intervals | <ul style="list-style-type: none"> <li>✓ Done <b>Annually</b>, Semi-annually, or Quarterly</li> </ul>                               |

✓ Less frequent but time-bound

## Slow & Non-Moving Stock

| Stock Type  | Turnover Ratio | Reason for Accumulation   | Valuation Treatment   |
|-------------|----------------|---|---|
| Slow Moving | 1 to 3         | <ul style="list-style-type: none"> <li>✓ Future supply uncertainty</li> <li>✓ High ordering cost</li> <li>✓ Bulk purchase discounts</li> <li>✓ High stock-out cost</li> </ul> | <ul style="list-style-type: none"> <li>✓ If held for sale → Lower of Cost or Net Realisable Value (NRV)</li> <li>✓ If held for internal use → No impairment adjustment in cost records</li> </ul> |
| Non-Moving  | Less than 1    | Same as above   | Same treatment as Slow Moving depending on purpose  |

## Scrap, Spoilage, Defectives & Wastage

| Term              | Definition  | Accounting Treatment  | Key Control Point   |
|-------------------|---|---|---|
| 1. Normal Waste   | Unavoidable, expected loss (e.g., shrinkage, evaporation)     | <ul style="list-style-type: none"> <li>✓ Charged to Production Cost</li> <li>✓ Realisable value (if any) deducted</li> </ul>  | Planned into cost estimates                                   |
| 2. Abnormal Waste | Unexpected/unusual loss (e.g., breakdown, power failure)      | <ul style="list-style-type: none"> <li>✗ Excluded from production cost</li> <li>✓ Charged to Costing P&amp;L A/c</li> </ul>   | Investigated & Reported                                       |
| 3. Waste          | Residue with no or negligible value (e.g., dust, fumes)       | <ul style="list-style-type: none"> <li>✓ Excluded from cost if abnormal</li> <li>✓ Spread over good output if normal</li> </ul>   | Disposal planning needed                                      |
| 4. Scrap          | Residual material with some value (e.g., shavings, trimmings) | <ul style="list-style-type: none"> <li>a) Credited to Revenue</li> <li>b) Credited to Overheads</li> <li>c) Credited to Jobs</li> <li>d) Transferred to other Jobs</li> </ul> | ! Scrap control through proper classification, survey & reuse |
| 5. Spoilage       | Items damaged beyond repair or can't meet quality specs       | <ul style="list-style-type: none"> <li>✓ Saleable as "seconds" or scrap/waste</li> </ul>  | Minimized through design & operational control                |

|  |  |   |  |
|--|--|---|--|
|  |  | <ul style="list-style-type: none"> <li>✓ Includes loss of material + labour + overhead</li> </ul> |  |
|--|--|---|--|

| Summary of Controls & Treatment |  |
|---------------------------------|--|
| 1.                              | <p><b>Scrap Control</b></p> <ul style="list-style-type: none"> <li>✓ Start from product <b>design</b> stage</li> <li>✓ Use <b>efficient machinery</b> &amp; trained staff</li> <li>✓ Maintain records</li> <li>✓ Form <b>Scrap Survey Committee</b></li> </ul> |
| 2.                              | <p><b>Spoilage Control</b></p> <ul style="list-style-type: none"> <li>✓ Detect root cause in operations</li> <li>✓ Monitor <b>defective processes</b></li> <li>✓ Rework if possible or <b>sell as seconds</b></li> </ul>                                       |
| 3.                              | <p><b>Waste Control</b></p> <ul style="list-style-type: none"> <li>✓ Proper <b>standards &amp; monitoring</b></li> <li>✓ Safe &amp; cost-effective <b>disposal</b> methods</li> </ul>  |

### Treatment of Other Items of Cost

| Item                  | Explanation  | Cost Treatment   |
|-----------------------|--|--|
| 1. Packing Cost       | Includes <b>containers</b> and materials for <b>packing</b> goods. | <ul style="list-style-type: none"> <li>✓ <b>Primary Packing</b> (e.g., ink bottle, jam jar):<br/>→ Treated as <b>Production Overhead</b></li> <li>✓ <b>Secondary Packing</b> (e.g., crates, cartons):<br/>→ Treated as <b>Selling &amp; Distribution Overhead</b></li> <li>✓ <b>Reusable Containers</b>: Cost charged <b>when not reusable</b> due to damage or wear.</li> <li>✓ <b>Decorative Primary Packing</b> (for marketing): Part of cost may be treated as <b>Selling Cost</b>.</li> </ul> |
| 2. Carriage & Cartage | Cost incurred in <b>transport</b> of materials or goods.           | <ul style="list-style-type: none"> <li>✓ <b>For Raw Materials</b>: Treated as <b>Direct Material Cost</b></li> <li>✓ <b>For Distribution of Finished Goods</b>: Treated as <b>Distribution Overheads</b></li> <li>✓ <b>Abnormal Expenses</b> (e.g., overcharges, delays): Charged to <b>Costing P&amp;L Account</b></li> </ul>   |

|                                    |   |   |
|------------------------------------|---|---|
| 3. Tools Cost                      | Cost related to <b>small</b> and <b>large</b> tools used in <b>production</b> . | <ul style="list-style-type: none"> <li>✓ <b>Large Tools: Capitalized + Depreciation to Factory Overhead</b></li> <li>✓ <b>Small Tools:</b> <ul style="list-style-type: none"> <li>▪ <b>Capitalization Method:</b> Same as large tools</li> <li>▪ <b>Revaluation Method:</b> Write-off difference between original and residual value</li> <li>▪ <b>Write-off Method:</b> Cost charged to department at issue or based on usage (e.g., machine hours)</li> </ul> </li> </ul> |
| 4. Discounts by Suppliers          | Includes <b>cash</b> , <b>trade</b> , and <b>quantity discounts</b> .           | <ul style="list-style-type: none"> <li>✓ <b>Cash Discount:</b> <b>Not</b> considered in cost</li> <li>✓ <b>Trade/Quantity Discount:</b> Already reduced in invoice; <b>net landed cost</b> is used as <b>Material Cost</b></li> </ul>   |
| 5. Stock Variances at Stock Taking | Difference in <b>physical</b> stock and <b>book</b> records.                    | <ul style="list-style-type: none"> <li>✓ <b>Normal Loss</b> (e.g., shrinkage, dryage): Treated as <b>Stores Overhead</b></li> <li>✓ <b>Abnormal Loss</b> (e.g., theft, fraud): Charged to <b>Costing P&amp;L Account</b></li> </ul>   |
| 6. Slow & Non-Moving Stock         | Items with <b>low</b> turnover held for sale or <b>internal</b> use.            | <ul style="list-style-type: none"> <li>✓ <b>Finished Goods (for sale):</b> → Valued at <b>Lower of Cost or NRV</b> as per <b>Ind AS 2</b></li> <li>✓ <b>For Internal Use in Production:</b> → <b>No write-down</b> for cost accounting even if value impaired</li> </ul>  |

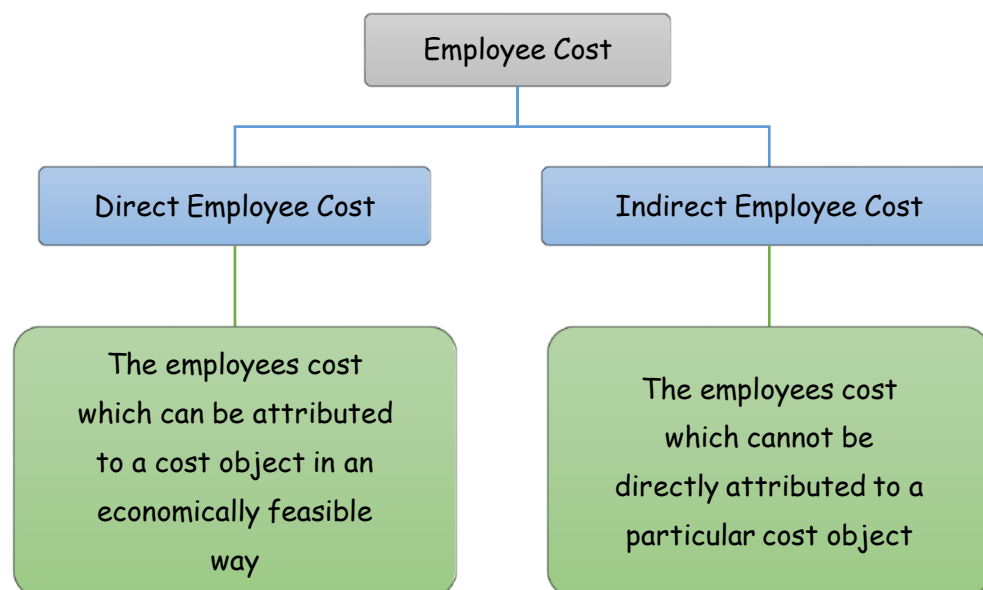
## CHAPTER 09: EMPLOYEE COSTS

### 1. Introduction

- ✓ **Employee Costs** are consideration, including **benefits** paid or payable to **employees**, permanent or **temporary**, for the purpose of production of a product or rendering of a service. In various cost accounting **books**, this is referred as **Labour** cost.
- ✓ Thus, labour cost is **identified** either as:
  - **Direct** employee cost - these are employee costs, which can be **assigned** to a **cost** object in an economically feasible way, or
  - **Indirect** employee cost - these are employee costs, which **cannot** be **directly** assigned to a particular cost object in an **economically** feasible way.

### 2. Employee Cost

- ✓ As such, the **expenditure** associated with compensating **workers** is commonly referred as labour cost, reflecting the **effort** they contribute to the production of **goods** or the delivery of **services**.
- ✓ Whereas employee cost is a **broader** term that encompasses various forms of **compensation** such as wages, salary, **bonuses**, incentives, etc., disbursed to an **employee** and recorded as **labour** cost against a specific cost object.
- ✓ Employee cost occupies a **significant portion** of the total cost of a product **manufactured** or **services** rendered.

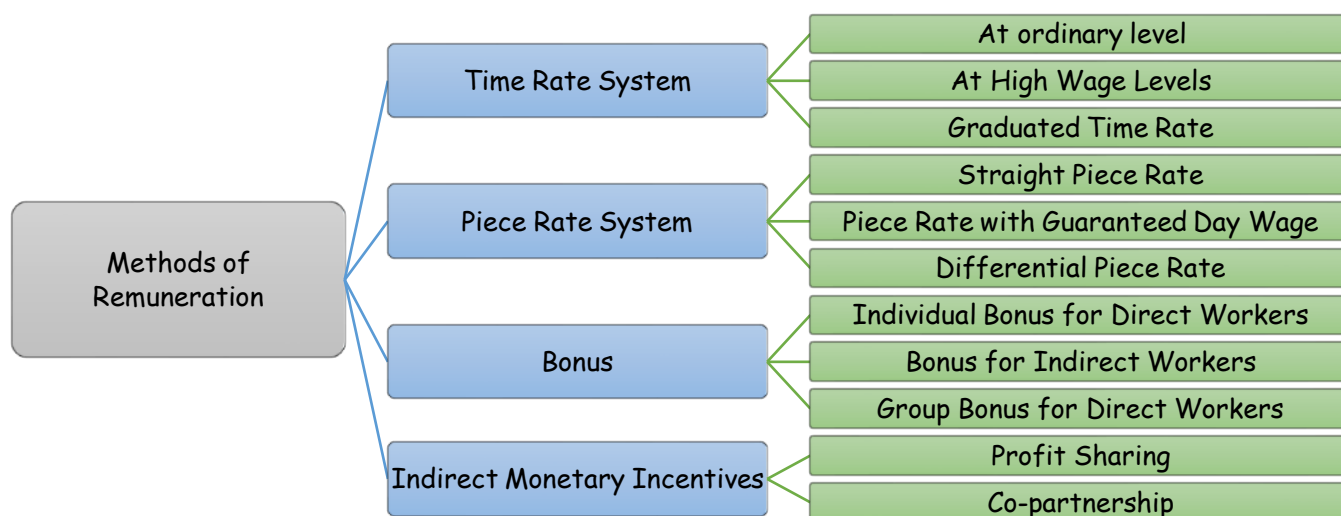


## 3. Wage Bill Computation

|                            |   |   |
|----------------------------|---|---|
| Gross Wages                | Basic   | ✓ |
|                            | Add: Bonus  | ✓ |
|                            | Add: Allowances   | ✓ |
|                            | Add: Overtime Premium   | ✓ |
| Cash Earned by Workers     | <b>Gross Wages</b>  | ✓ |
|                            | Less: Employee's Contribution to PF and ESI                                 | ✓ |
|                            | Less: Professional Tax  | ✓ |
| Labour Cost to the Company | <b>Gross Wages</b>  | ✓ |
|                            | Add: Employer's Contribution to PF and ESI                                  | ✓ |
|                            | Add: Fringe benefits (Perquisite)   | ✓ |
|                            | <b>Cost to the Company</b>  | ✓ |
| Allocation to Jobs         | In the ratio of time given<br>[Allocation (E.g., Overtime) + Apportionment] |   |

## 4. Methods of Wage Payment

- ✓ One of the important **components** of **labour** cost control is the **wages** system. A system of wage payment, which takes care of both, i.e., providing guarantee of **minimum** wages as well as offering **incentive** to efficient workers helps to **motivate** the workers to a great **extent**.
- ✓ It should also be remembered that **high wages** do not necessarily mean high **labour** cost because it may be observed that due to high wages the **productivity** of workers is also **high** and hence the per unit cost of **production** is actually **decreased**.
- ✓ On the other hand, if low **wages** are paid, it may result in lower **productivity** and hence **higher wages** do not necessarily mean **high cost**.



### 5. Time Rate Method

#### a) Time Rate at Ordinary Levels

- ✓ Under this method, rate of **payment** of wages per hour is **fixed** and payment is made accordingly on the basis of **time** worked **irrespective** of the output **produced**. The main benefit of this method for the workers is that they get guarantee of **minimum** income irrespective of the output **produced** by them.

#### b) Time Rate at High Wage Levels

- ✓ This system is a variation of **time** rate at **ordinary** levels in the sense that in this system, workers are paid at **time** rate but the rate is much **higher** than that is **normally** paid in the industry or area. In this method, the workers are paid according to the **time taken** and overtime is not **normally** allowed.
- ✓ This method offers a very strong **incentive** to workers and it can attract talented workers in the industry. However, care should be taken that **productivity** also **increases**; otherwise, the cost will go on increasing.

#### c) Graduated Time Rate

- ✓ Under this method payment is made at **time** rate, which varies according to **personal** qualities of the workers. The rate also **changes** with the official cost of **living** index. Thus, this method is suitable for both **employer** and **employees**.

### 6. Piece Rate Method

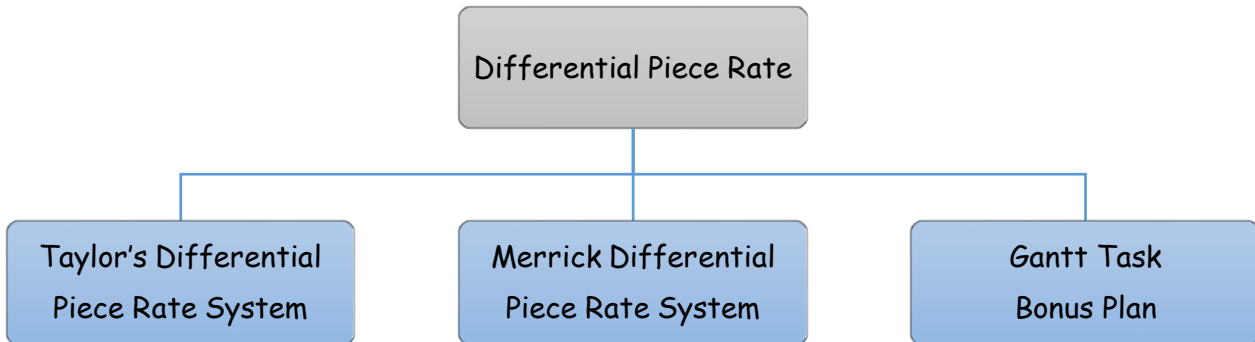
- ✓ It's important to note that the **effectiveness** of a piece rate system depends on the nature of the work, the industry, and the way in which the system is **implemented** and managed.
- ✓ This method is also called as **payment** by results where the **workers** are paid as per the **production** achieved by them. Thus, if a worker produces **higher output**, he can earn **higher wages**.
- ✓ Under the **piece** rate system of wage **payment**, the workers receive a **flat rate** of wages either for time worker or for units **manufactured**.

#### a) Straight Piece Rate

- ✓ In this method, rate per unit is **fixed** and the worker is paid according to this rate.
- ✓ For example, if the rate per unit is fixed at ₹ 10, and the **output** produced is 300 units, the remuneration to the worker will be ₹ 10 × 300 units = ₹ 3,000. This method thus offers a very strong incentive to the **workers** and is particularly **suitable** where the work is **repetitive**.

#### b) Differential Piece Rate

- ✓ **Differential Piece Rate System** is a **compensation** approach that rewards workers with higher rates per **standard** hour as they achieve higher levels of **productivity**. The system is **effective** when production processes are repetitive, methods are **standardized**, and individual worker output can be **clearly** identified. The efficiency of workers is **evaluated** by comparing their actual **production** with established standards, and those exceeding the standards qualify for higher wages. The following are the major systems of **differential** piece rate system:



#### b (i) Taylor's Differential Piece Rate System

- ✓ F.W. **Taylor** suggested that efficient workers should be **encouraged** to the **maximum** possible extent, the inefficient workers should be penalized. In order to do this, he has suggested two rates for the two **classes** of workers.
- ✓ **Efficiency Criteria:** Output  $\geq$  Standard = Efficient  
Output  $<$  Standard = Inefficient
- ✓ Payment for **Efficient Workers** - 120% of Normal Piece rate.
- ✓ Payment for **Inefficient Workers** - 80% of Normal Piece rate.

#### b (ii) Merrick Differential Piece Rate System

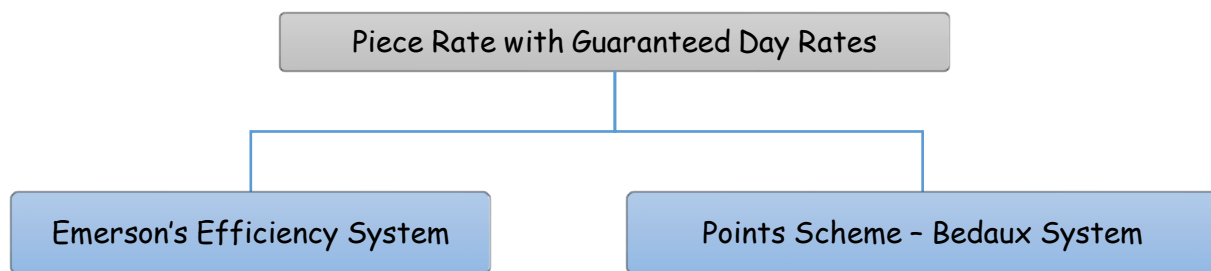
- ✓ **Merrick's** system is modification of Taylor's system and is **comparatively** less **harsh** on the workers. The scale of **remunerations** is as follows:
- ✓ **Production Rates of Payment**
  - Up to 83% of production - Normal piece rate
  - 83% to 100% of production - 110% of ordinary piece rate
  - Above 100% of production - 120% of ordinary piece rate

#### b (iii) Gantt Task Bonus Plan

- ✓ In this method, there is a **combination** of time rate, bonus and piece rate **plan**. The remuneration is computed as shown below:
- ✓ **Production Rates of Payment**
  - Production below standard - Guaranteed time rate
  - Production at standard - Bonus of 20% (normally) of time rate
  - Production above standard - High piece rate for the entire output

- ✓ This method assures **minimum** wages for even too **less efficient** workers and hence is a preferred method of payment of wages. It also offers **reasonably** good incentive to efficient workers. However, the main **limitation** is that the method is complicated to understand by the **workers** and hence may create **confusion** amongst them.

### c) Piece Rate with Guaranteed Day Rate



#### c(i) Emerson's Efficiency System

- ✓ Under this system **minimum** time wages are guaranteed. Bonus in addition to minimum day wages is given to the worker **beyond** a certain **efficiency** level. A worker who is able to **attain** efficiency measured by his output which is equal to or above this **standard** efficiency is **deemed** to be an efficient worker who deserves **encouragement**.
- ✓ The **scheme** provides for payment of bonus at various levels of **efficiency** ranging from **66.67%** to **150%** in the following manner:
  - for a performance below **66.67%** efficiency, only time rate wages are paid without any bonus.
  - for a performance between **66.67%** and **100%** efficiency, bonus varies between **0.01%** and **20%**.
  - above **100%** efficiency level, bonus of **20%** of basic wages + **1%** for each **1%** increase in efficiency is admissible.
- ✓ **Emerson's** efficiency system is superior to other **differential** piece rate as it encourages the slow worker to do better than before. It does not presuppose a high degree of **average performance**. The wages are **guaranteed** on time basis.

#### c (ii) Points Scheme - Bedaux System

- ✓ Under this system the quantum of work that can be **performed** by a worker is expressed in **Bedaux** Points or B's. These points represent the standard time expressed in **terms** of **minutes** that are necessary to perform a job.
- ✓ The standard numbers of **points** in terms of minutes are determined after **analysing** each operation or job in detail. Each such minute consists of the time **required** to complete a

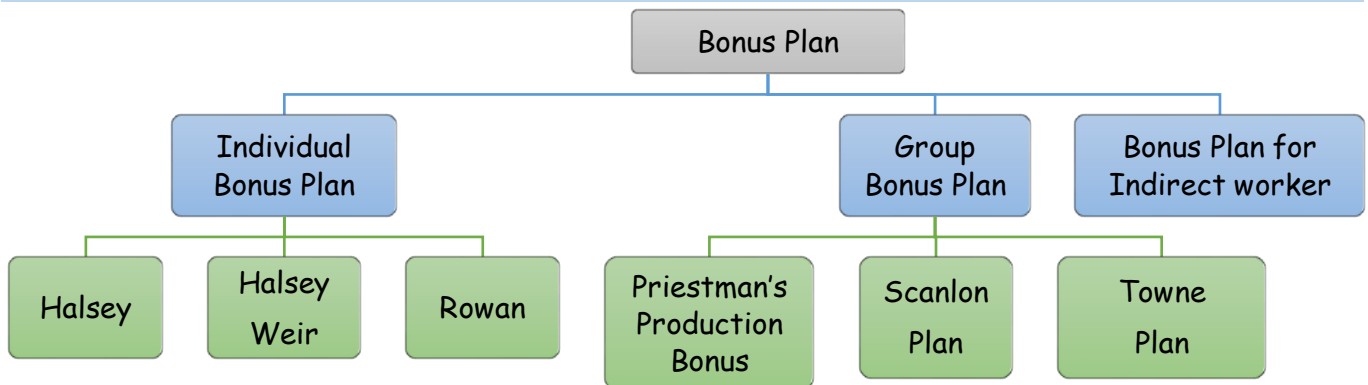
fraction of the **operation** or the job and also an allowance for rest due to fatigue. The workers who are not able to complete the tasks allotted to them within the standard time are **paid** only the normal daily rate of **wages**.

- ✓ Those workers who are able to increase their **efficiency** rate which is equal to the wages for time saved as **indicated** by excess of B's **earned** (i.e., standard time for work done - over actual time) are paid **75%** of the time **saved**.

## 7. Bonus Systems

### Individual Bonus Plan

- ✓ The **bonus** to be paid to the **workers** is computed on the basis of savings in the **hours**, i.e., the difference between the time **allowed** and time **taken**.
- ✓ The time allowed is the standard time, which is **fixed** by conducting a time and **motion** study by the work study **engineers**. While fixing the **standard** time, due **allowance** is given for physical and mental fatigue as well as for **normal** idle time.
- ✓ The actual time taken is **compared** with this **standard** time and bonus is **payable** to the worker if the time **taken** is **less** than the standard time.
  - Time Allowed (TA), Time Taken (T)
  - Time Saved (TS = TA - T), Rate per hour (R)



### Halsey Premium Plan

- ✓ This plan was introduced by F.A. **Halsey**, an American **engineer**. In this plan, **bonus** is paid on the basis of time saved. Standard time is fixed for a **job** and if the actual time taken is **less** than the same, the worker becomes eligible for **bonus**.
- ✓ However, bonus is paid equal to wages of **50%** of the time **saved**. A worker is assured of time wages if he takes **longer** time than the **allowed** time. The formula for **computing** the total **wages** is as follows.  

$$\text{Wages} = \text{Time Taken} \times \text{Time rate} + (50\% \text{ of Time saved} \times \text{Time rate})$$

### Halsey Weir Plan

- ✓ Under this method, there is only one **difference** as compared to the Halsey **Plan** and that is instead of **50% bonus** for the time saved, it is **33 1/3%** of the time saved. Accordingly, the

formula for this method is modified as follows:

$$\text{Wages} = \text{Time Taken} \times \text{Time rate} + (33 \frac{1}{3} \% \text{ of Time saved} \times \text{Time rate})$$

#### Rowan Plan

- ✓ This premium **bonus** plan was introduced by Mr. James **Rowan**. It is similar to that of **Halsey** Plan in respect of time **saved**, but bonus hours are calculated as the **proportion** of the time **taken** which the time saved bears to the time **allowed** and they are paid for at time rate. The formula for computation of total earnings is as follows:

$$\text{Wages} = \text{Time Taken} \times \text{Time rate} + \left[ \frac{\text{Time Taken}}{\text{Time Allowed}} \times \text{Time Saved} \times \text{Time Rate} \right]$$

#### Barth Variable Sharing Plan

- ✓ In this system, the **total earnings** are calculated as follows:

$$\text{Total Earnings} = R \times \sqrt{TA} \times T$$

#### Comparison Table - Differential and Guaranteed Rate Systems

| System           | Minimum Wage Guarantee | Bonus/Incentive             | Complexity Level |
|------------------|------------------------|-----------------------------|------------------|
| Taylor's System  | ✗ No                   | ☑ High for >100% output     | ★ Simple         |
| Merrick System   | ✗ No                   | ☑ Moderate & tiered         | ★★ Medium        |
| Gantt Task Plan  | ☑ Yes                  | ☑ Bonus + High rate         | ★★ Medium        |
| Emerson's System | ☑ Yes                  | ☑ Bonus from 66.67% onwards | ★★ Medium        |
| Bedaux System    | ☑ Yes                  | ☑ 75% of time saved         | ★★★ High         |

### 8. Idle Time

- ✓ **Idle** time refers to the period during which **employees** or **machinery** are not actively engaged in productive work but are still being paid. It represents **unproductive** time that does not contribute to the completion of tasks or the overall output of an organization. **Idle** time refers to the period of time when an asset, such as a **machine** or an **employee**, is available for use but remains **unproductive**.
- ✓ **Normal idle time**: It is the time which **cannot** be **avoided** or reduced in the normal course of business.
- ✓ **Abnormal idle time**: Apart from normal idle time, there may be factors which give rise to abnormal idle time. E.g. Lack of **Coordination**, **Power** failure **breakdown** of machines, **fire**, **flood** etc.

## 9. Measurement of Efficiency

### Labour Efficiency Ratio

- ✓ The Labour **Efficiency** Ratio, also known as the productivity ratio, measures the **effectiveness** of labour utilization in a given period.
- ✓ It is calculated by comparing the **actual** output or production achieved by a **workforce** to the standard or **expected** output.
- ✓ A **higher** ratio indicates **more** efficient utilization of **labour** resources, while a **lower** ratio may suggest **inefficiencies** or underperformance.

$$\text{Labour Efficiency Ratio} = \frac{\text{Expected time to produce the output (in hours)}}{\text{Actual time to produce the output (in hours)}} \times 100 \%$$

#### Example

During July 2022, a factory produced 3,600 units of a product. The expected production time is 3 direct labour hours for each unit. The actual number of direct labour hours worked in the month was 10,000 hours.

$$\text{Efficiency ratio} = \frac{(3,600 \times 3 \text{ hours})}{10,000 \text{ hours}} \times 100\% = 108\%$$

It is important to note that, when a labour efficiency ratio is calculated, the actual hours worked should exclude any hours recorded as idle time.

### Capacity Utilization Ratio

- ✓ Employees may not be **consistently** involved in active tasks while at the **workplace**. Instances of employee "idle" time can occur for various **reasons**, including waiting for the next assignment or during **production** interruptions caused by machinery **breakdowns**.

$$\text{Capacity Utilisation Ratio} = \frac{\text{Hours Spent in active workings}}{\text{Total Hours available for work}} \times 100 \%$$

#### Example

A production department has 6 employees who each work 40 hours a week. In a particular week, the recorded idle time was 25 hours.

Total hours available for work = 6 employees × 40 hours = 240 hours.

$$\text{Capacity utilisation ratio} = \frac{(240 - 25)}{240} \times 100\% = 89.6\%$$

### Production Volume Ratio

- ✓ Labour activity can also be **measured** by a production volume ratio which is calculated as follows:

$$\text{Production Volume Ratio} = \frac{\text{Expected time to produce the output}}{\text{Total Hours available for work}} \times 100 \%$$

- ✓ Otherwise, the **production** volume ratio can be calculated as follows:

$$\text{Production volume ratio} = \text{Labour efficiency ratio} \times \text{Capacity utilisation ratio}$$

## 10. Measurement of Labour Turnover

- ✓ It is essential for any **organisation** to measure the Labour Turnover. This is **necessary** for having an idea about the turnover in the organisation and also to compare the labour turnover of the previous **period** with the current one. The following methods are available for measurement of the labour turnover:
- ✓ **Additions Method:** Under this method, **number** of **employees** added during a particular period is taken into **consideration** for computing the Labour Turnover. The method of computing is as follows:

$$\text{Labour Turnover} = \frac{\text{No Of Additions}}{\text{Average No Of Workers during the period}}$$

- ✓ **Separation Method:** In this method, instead of taking the **number** of employees added, number of employees left during the period is taken into **consideration**. The method of computation is as follows:

$$\text{Separation Method} = \frac{\text{No Of Separations}}{\text{Average No Of Workers}}$$

- ✓ **Replacement Method:** In this method neither the **additions** nor the **separations** are taken into consideration. The number of employees replaced is taken into **consideration** for computing the labour turnover.

$$\text{Replacement Method} = \frac{\text{No Of Replacement}}{\text{Average No Of Workers}}$$

- ✓ **Flux Method:** Under this method Labour Turnover is computed by taking into consideration the **additions** as well as **separations**. The turnover can also be computed by taking **replacements** and **separations** also. Computation is done as per the following methods:

$$\text{Flux Method} = \frac{\text{No. Of Separations} + \text{No. Of Accessions}}{\text{Average No Of Workers}}$$

Note:

$$\text{Average No. Of Workers} = \frac{\text{No of Employees at the Beginning} + \text{No of Employees at the end}}{2}$$

## 11. Overtime Premium and its Treatment

### Overtime

- ✓ Work done beyond normal working hours is known as '**overtime work**'. Overtime payment is the **amount** of **wages** paid for working beyond normal working hours. Overtime payment consist of two elements- (i) **Normal wages** for overtime work and (ii) **Premium** payment for overtime work.
- ✓ **Overtime premium:** The **rate** for overtime work is **higher** than the normal time rate; usually it is at **double** the normal rates. The **extra amount** so paid over the normal rate is called **overtime premium**.

✓ Causes of Overtime and Treatment of Overtime premium in cost accounting

| Causes  | Treatment   |
|---|---|
| (1) The customer may agree to bear the entire charge of <b>overtime</b> because <b>urgency of work</b> .  | (1) If <b>overtime</b> is resorted to at the desire of the customer, then overtime premium may be <b>charged to the job directly</b> .  |
| (2) Overtime may be called for to make up any <b>shortfall in production</b> due to some unexpected development.  | (2) If <b>overtime</b> is required to cope with general production programmes or for meeting urgent orders, the <b>overtime premium</b> should be <b>treated as overhead cost</b> of the particular department or cost centre which works overtime. |
| (3) Overtime work may be necessary to make up a <b>shortfall in production</b> due to some <b>fault of management</b> .   | (3) If <b>overtime</b> is worked in a department due to the fault of another department, the overtime premium should be <b>charged to the latter department</b> .   |
| (4) <b>Overtime</b> work may be resorted to, to secure an out-turn in <b>excess</b> of the <b>normal output</b> to take advantage of an expanding market or of <b>rising demand</b> | (4) <b>Overtime</b> worked on account of abnormal conditions such as flood, earthquake etc., should not be charged to cost, but to <b>Costing Profit and Loss Account</b> .   |

## 12. Core Theory Topics

### Key Concepts and Terminologies

- Primary Packing: **Necessary for product integrity and saleability (production-related).**
- Secondary Packing: **Needed only for transportation (selling-related).**
- Carriage Inward: **Cost included in raw material cost.**
- Carriage Outward: **Part of distribution cost.**
- Revaluation Method (Tools): **Reflects residual value at period-end.**
- Ind AS 2: **Governs inventory valuation for accounting purposes.**
- Net Realisable Value (NRV): **Sale price less cost of completion/sale.**
- Abnormal Losses: **Not part of cost of production — charged off.**

### CAS - 7: Principles for Measuring Employee Cost

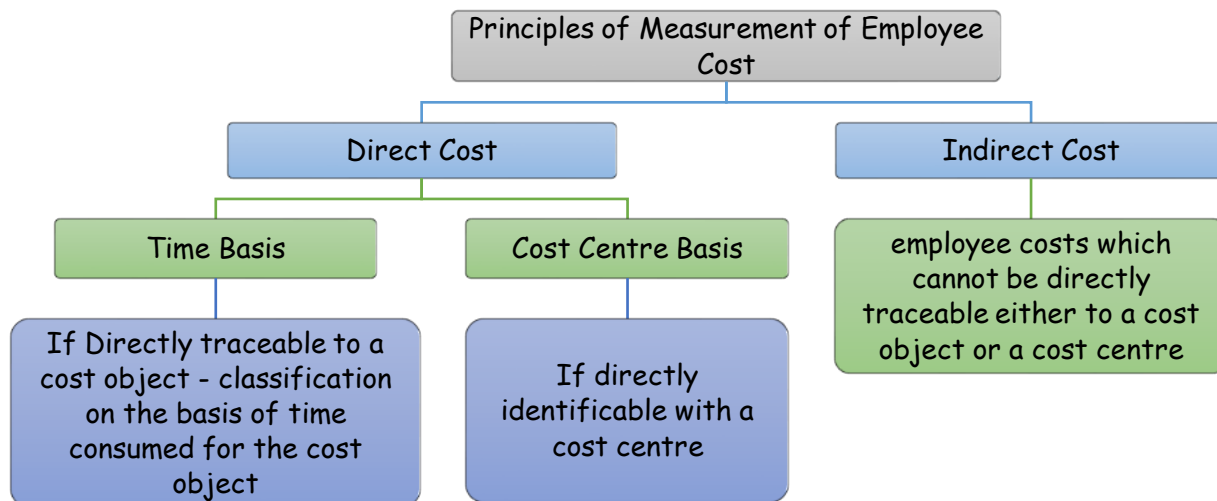
|    |  |
|----|--|
| 1. | Basic Composition<br>Employee cost includes <b>gross pay</b> (basic pay + allowances) and <b>employer's cost</b> for benefits. |
| 2. | Bonus & Ex-Gratia  |

|     |  |
|-----|--|
|     | Both <b>statutory bonuses</b> and <b>profit-linked</b> bonuses are included. <b>Ex-gratia</b> in lieu or in addition to bonus is also included.  |
| 3.  | <b>Managerial Remuneration</b><br>Remuneration to <b>executive directors</b> and <b>statutory officers</b> is included, whether fixed or profit-linked. Remuneration to <b>non-executive directors</b> is <b>excluded</b> from employee cost (included in <b>Administrative Overheads</b> ). |
| 4.  | <b>Retrenchment / VRS / Termination Cost</b><br>These are <b>amortized</b> over the period benefiting from such cost.  |
| 5.  | <b>Imputed Costs</b><br>Not included in employee cost.   |
| 6.  | <b>Idle Time Cost</b><br>Calculated as:<br>$\text{Idle Hours} \times \text{Hourly Rate}$ (For the respective employee or group)  |
| 7.  | <b>Standard Costing &amp; Variance</b><br>✓ <b>Normal variances</b> = Included in employee cost<br>✓ <b>Abnormal variances</b> = Treated as <b>Abnormal Cost</b>   |
| 8.  | <b>Grants, Subsidies, Incentives</b><br>Deducted from <b>employee cost</b> if directly related.  |
| 9.  | <b>Abnormal Costs</b><br><b>Material and quantifiable abnormal costs</b> are <b>excluded</b> from employee cost.   |
| 10. | <b>Penalties &amp; Damages</b><br>Payments made to <b>statutory authorities</b> or third parties = <b>Excluded</b> from employee cost.   |
| 11. | <b>Fringe Benefits (e.g. Housing, Transport)</b><br>Valued at <b>total cost of resources consumed</b> to provide these benefits.   |
| 12. | <b>Recoveries from Employees</b><br>Deducted from gross employee cost (e.g., employee pays partial rent for provided housing).   |
| 13. | <b>Change in Accounting Principles</b><br>Permitted only if: <ul style="list-style-type: none"> <li>▪ Required by law</li> <li>▪ Needed for compliance with standards</li> <li>▪ Results in better presentation or measurement of cost statements</li> </ul>                                 |

#### Key Notes:

- ✓ Employee cost is broader than just salary—it includes all employer-incurred expenses to maintain, retain, or retire employees.

- ✓ Managerial remuneration is included only if linked to active operational roles (e.g., executive directors).
- ✓ Subsidies or incentives received for employee-related costs must reduce the cost reported.
- ✓ Treatment of idle time, standard costing variances, and termination costs is essential for accurate cost reporting.



## Key Steps in Effective Labour Cost Management

|    |   |
|----|---|
| 1. | <b>Production Planning</b><br>Involves scheduling, routing, machine loading, and work study to ensure labour is efficiently used.     |
| 2. | <b>Labour Budget</b><br>Set cost targets and compare actual vs budgeted labour costs.   |
| 3. | <b>Labour Standards</b><br>Pre-set standards for expected labour cost per unit or job for control and efficiency.                     |
| 4. | <b>Performance Reports</b><br>Regular reports to measure labour efficiency and productivity.  |
| 5. | <b>Incentive Schemes</b><br>Both <b>monetary</b> and <b>non-monetary</b> incentives can improve labour productivity.                  |
| 6. | <b>Labour Cost Accounting</b><br>Track and analyze direct/indirect labour, idle time, overtime, turnover cost, and incentive effects. |

## Departments Involved in Labour Cost Management

| Department         | Role   |
|--------------------|--|
| Personnel Dept.    | Hiring, training, compensation policies, workforce planning.         |
| Engineering Dept.  | Optimizing workflows, reducing manual effort, increasing efficiency. |
| Time-Keeping Dept. | Recording attendance, actual hours worked, overtime, idle time.      |
| Payroll Dept.      | Accurate disbursement of salaries, bonuses, deductions.              |

Cost Accounting Dept. Classification, variance analysis, standard cost setting, cost reporting.

## Importance of Labour Cost Management

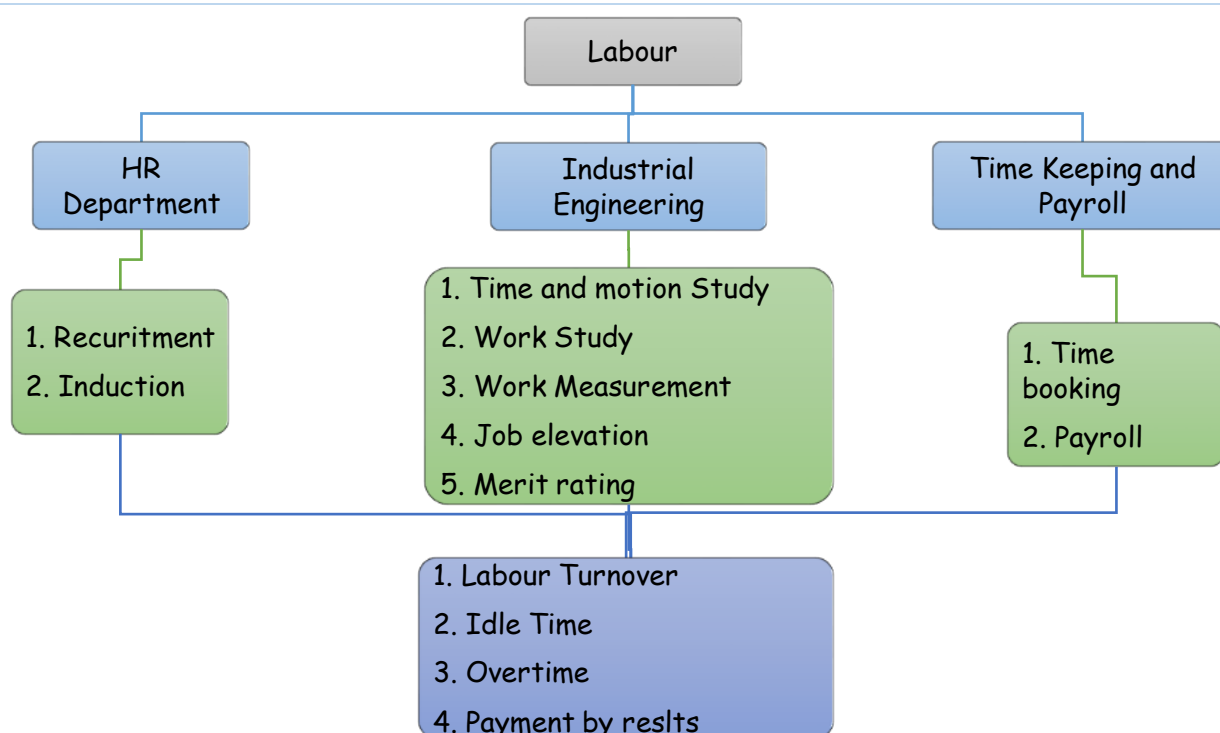
- ✓ Controls labour cost and improves productivity.
- ✓ Aids in pricing, inventory costing, and profit analysis.
- ✓ Influences managerial decisions and financial planning.
- ✓ Supports effective use of human resources.

## Factors for Controlling Employee Cost

| Factor                                 | Purpose   |
|--|---|
| 1. Manpower Assessment                 | Avoid over/under staffing.                      |
| 2. Time-keeping & Time-booking Control | Track work hours and reduce unproductive time.  |
| 3. Time and Motion Study               | Analyze time efficiency for specific tasks.     |
| 4. Idle Time & Overtime Control        | Monitor engagement, reduce extra labour costs.  |
| 5. Turnover Control                    | Reduce hiring/training costs through retention. |
| 6. Workforce Planning                  | Allocate resources efficiently within budget.   |
| 7. Time & Attendance Systems           | Ensure accurate work-time tracking.             |
| 8. Productivity Enhancement            | Use training and tools to boost performance.    |
| 9. Automation & Tech Adoption          | Reduce manual labour and optimize processes.    |
| 10. Employee Training                  | Improve output and reduce inefficiencies.       |

### Conclusion

Labour cost is a **sensitive and significant** component of total cost. Effective management ensures **cost control, productivity improvement, and operational efficiency**, which are crucial for profitability and competitiveness.



| ◊ Labour Cost Management: Departmental Roles and Techniques |  |
|---|--|
| 1.  | <p><b>Human Resource (HR)</b></p> <ul style="list-style-type: none"> <li>✓ Forecasting and analyzing personnel expenses.</li> <li>✓ Preparing labour cost scenarios.</li> <li>✓ Aligning with finance for informed decisions.</li> <li>✓ Tracking personnel expenses.</li> <li>✓ Improving ROI on labour cost through analysis of positions, trends, and overtime.</li> <li>✓ Supports recruitment decisions using cost data.</li> </ul>   |
| 2.  | <p><b>Industrial Engineering (IE)</b></p> <ul style="list-style-type: none"> <li>✓ Applies systematic methods to optimize productivity, processes, and resource use.</li> <li>✓ Focus areas include:               <ol style="list-style-type: none"> <li>1. <b>Workforce Planning &amp; Allocation</b> <ul style="list-style-type: none"> <li>✓ match manpower with production targets.</li> </ul> </li> <li>2. <b>Time &amp; Motion Studies</b> <ul style="list-style-type: none"> <li>✓ improve efficiency by analyzing and eliminating waste.</li> </ul> </li> <li>3. <b>Process Optimization</b> <ul style="list-style-type: none"> <li>✓ apply lean principles to cut waste and improve output.</li> </ul> </li> </ol> </li> </ul> |
| 3.  | <p><b>Time-Keeping &amp; Payroll</b></p> <ul style="list-style-type: none"> <li>✓ Recording attendance, hours worked, overtime, and payroll calculations.</li> <li>✓ Ensures accurate wage disbursement and labour cost reporting.</li> </ul>  |

| Work Study Components under IE Department |  |
|---|--|
| 1.  | <p><b>Work Study</b></p> <ul style="list-style-type: none"> <li>✓ A scientific analysis to improve work methods, resource utilization, and minimize waste.</li> <li>✓ Encompasses Time Study, Motion Study, Method Study, and Work Measurement.</li> </ul> |
| 2.  | <p><b>Time Study</b></p> <ul style="list-style-type: none"> <li>✓ Measures the time needed for each job element.</li> <li>✓ Helps in setting realistic production standards for planning, scheduling, and performance evaluation.</li> </ul>               |
| 3.  | <p><b>Motion Study</b></p> <ul style="list-style-type: none"> <li>✓ Focuses on eliminating unnecessary motions.</li> <li>✓ Aims to reduce fatigue, streamline actions, and enhance efficiency.</li> <li>✓ Applies Principles of Motion Economy.</li> </ul> |
| 4.  | <p><b>Method Study</b></p> <ul style="list-style-type: none"> <li>✓ Examines existing work methods to find better ways of performing tasks.</li> </ul>   |
| 5.  | <p><b>Work Measurement</b></p> <ul style="list-style-type: none"> <li>✓ Determines standard time norms for jobs.</li> </ul>  |

|   |
|---|
| <ul style="list-style-type: none"> <li>✓ Useful for:             <ol style="list-style-type: none"> <li>a. Incentive wage schemes</li> <li>b. Utilization of men/machines/materials</li> <li>c. Production control</li> <li>d. Setting labour standards</li> <li>e. Cost control &amp; reduction</li> </ol> </li> </ul> |
|---|

| Job Evaluation |  |
|----------------|--|
| 1.             | <p><b>Job Evaluation</b></p> <ul style="list-style-type: none"> <li>✓ A systematic assessment of the relative worth of jobs.</li> <li>✓ Helps create a fair wage structure.</li> <li>✓ Ensures internal equity and compensation planning.</li> </ul> |

### Methods of Job Evaluation

| Method                  | Explanation  | Key Points   |
|-------------------------|--|--|
| 1. Point Ranking Method | Each job is analyzed using specific job factors like skill, effort, responsibility, hazards, etc. Each factor is given a weight or point value based on importance. Total points determine the job rank. | <ul style="list-style-type: none"> <li>✓ Logical and detailed</li> <li>✗ Complex to assign points</li> <li>✓ Helps design structured wage systems</li> </ul>                       |
| 2. Ranking Method       | Jobs are ranked in order of importance based on skill, experience, working conditions, etc. Ranking can be ascending or descending. Wage levels depend on rank.  | <ul style="list-style-type: none"> <li>✓ Simple and cost-effective</li> <li>✓ Suitable for small organizations</li> <li>✗ Not ideal for complex or large job structures</li> </ul> |
| 3. Grading Method       | Jobs are placed into predefined grades/classes after evaluating complexity, supervision, responsibility, etc. Wage scale is based on the assigned grade.   | <ul style="list-style-type: none"> <li>✓ More structured than ranking</li> <li>✓ Based on job analysis</li> <li>✓ Suitable for moderate-sized organizations</li> </ul>             |

### Merit Rating

| Concept         | Explanation  | Objectives  |
|-----------------|--|---|
| 1. Merit Rating | Evaluation of individual employee performance, unlike job evaluation (which rates the job). Used for promotion, increment, and performance analysis. | <ol style="list-style-type: none"> <li>a. Promotion &amp; reward decisions</li> <li>b. Wage and incentive system design</li> <li>c. Assess job suitability</li> </ol> |

|               |  |   |
|---------------|--|---|
|               |  | <ul style="list-style-type: none"> <li>d. Help workers improve</li> <li>e. Evaluate work ethic, initiative, etc.</li> </ul> |
| 2. Limitation | May become subjective, leading to bias and disputes. Past performance may be overemphasized. |   |

## Timekeeping, Time Booking, and Payroll

| Aspect                                     | Explanation  | Purpose / Benefits   |
|--|--|--|
| 1. Time Keeping                            | Recording in and out timings of workers during regular hours. Essential for wage calculation, discipline, and statutory compliance.                  | <ul style="list-style-type: none"> <li>a. Calculates time-based wages</li> <li>b. Encourages punctuality</li> <li>c. Ensures accurate benefit computation (PF, gratuity, etc.)</li> <li>d. Helps in overhead absorption</li> </ul> |
| 2. Time Booking                            | Recording time spent by workers on specific jobs, processes, or production orders. Helps in cost allocation and efficiency analysis.                 | <ul style="list-style-type: none"> <li>a. Determines job-wise labour cost</li> <li>b. Assists in product costing</li> <li>c. Aids in idle time detection</li> </ul>  |
| 3. Contrast (Time Keeping vs Time Booking) | <p><b>Time Keeping:</b> Focuses on attendance and payroll accuracy.</p> <p><b>Time Booking:</b> Focuses on job-specific labour hour utilization.</p> | Both are critical for cost control, performance analysis, and statutory records.   |

### ◇ Distinguishing Features of Time Keeping and Time Booking

| Aspect            | Time Keeping  | Time Booking  |
|-------------------|---|---|
| 1. Purpose        | Attendance & wage calculation                                   | Recording time spent on specific jobs/operations                                    |
| 2. Focus          | Ensures effective labour utilization and total wage computation | Helps determine job-wise labour cost, control idle time, and overhead apportionment |
| 3. Recording      | Start and end of worker's shift                                 | Start and end time of each job performed  |
| 4. Responsibility | Done by Time Keeper   | Done through job-based records  |
| 5. Impact         | Ensures discipline, punctuality                                 | Facilitates differential piece rates, job efficiency                                |

|            |                              |  |
|------------|------------------------------|--|
| 6. Summary | Tracks total time at factory | Tracks <b>productive time per job</b> , including <b>idle time reasons</b> |
|------------|------------------------------|--|

### Requirements of an Effective Time-Keeping System

| Key Requirement         | Explanation  |
|-------------------------|--|
| Prevent Proxy           | No one should mark attendance for another              |
| Piece Worker Attendance | Include system for <b>piece-rate employees</b>         |
| Arrival & Departure     | Must capture <b>both times accurately</b>              |
| Mechanical Method       | Prefer <b>machine-based systems</b> to reduce disputes |
| Late Recording          | Must record and enforce <b>late arrivals</b>           |
| Simple & Smooth         | Avoid <b>queues/delays</b> in marking attendance       |
| Regular Review          | Fix errors and loopholes periodically                  |

### Methods of Time Keeping

| Method                 | Description   | Limitations                   |
|------------------------|---|-------------------------------|
| 1. Attendance Register | Workers sign in/out manually                        | Queues, chance of proxy       |
| 2. Disc/Token Method   | Metal disc with ID collected by timekeeper          | Manual errors, proxy possible |
| 3. Clock Cards         | Workers punch cards at entry/exit                   | No job-wise time info         |
| 4. Bio-metric System   | Uses <b>fingerprint / retina / face</b> recognition | Accurate, <b>costly</b> setup |

### Objective of Time Booking

|    |   |
|----|---|
| 1. | Measure productive time<br>Helps identify and reduce <b>idle time</b> |
| 2. | Assess work quantity & value<br>Determines output-based wages         |
| 3. | Calculate earnings<br>Basis for <b>wages &amp; bonuses</b>            |
| 4. | Evaluate worker efficiency<br>Supports performance appraisals         |

### Methods of Time Booking

| Method               | Description               | Highlights                            |
|----------------------|---------------------------|---------------------------------------|
| 1. Daily Time Sheet  | Worker records time daily | High accuracy, more paperwork         |
| 2. Weekly Time Sheet | Same as daily but weekly  | Less paperwork, risk of memory errors |
| 3. Job Ticket        | Time in/out for each job  | Job-wise tracking                     |

|                     |   |                                    |
|---------------------|---|------------------------------------|
| 4. Labour Cost Card | One card per job passed through workers | Shows <b>aggregate labour cost</b> |
| 5. Time & Job Card  | Combined <b>attendance + job time</b>   | No need for separate records       |

#### ◇ Role of the Payroll Department

|    |   |
|----|---|
| 1. | Wage Calculation<br>Based on clock cards/time sheets                              |
| 2. | Prepare Wage Sheets<br>Includes <b>gross wages, deductions, net wages</b>         |
| 3. | Maintain Records<br>Individual payroll & departmental summaries                   |
| 4. | Fraud Prevention<br>System of <b>internal checks</b> , avoid <b>ghost workers</b> |
| 5. | Cost Linkage<br>Coordinates with <b>Cost Accounting Dept</b> for analysis         |

#### ◇ Role of the Cost Accounting Department

|    |  |
|----|--|
| 1. | Classify Labour Costs<br><b>Direct</b> and <b>Indirect</b>   |
| 2. | Compare Actual vs Budgeted<br>Supports <b>variance analysis</b>  |
| 3. | Unit Cost Calculation<br>Helps in <b>cost control</b>  |
| 4. | Report for Management<br>Data used for <b>decision</b> making, pricing, and <b>efficiency</b> tracking |

#### ◇ Payroll Activities & Responsibilities

| Activity                                 | Responsible Department           |
|--|----------------------------------|
| <b>Attendance</b> & Time Details         | <b>Time-Keeping</b> Department   |
| <b>Employee</b> List & Details           | Personnel / HR <b>Department</b> |
| Computation of Wages & <b>Incentives</b> | <b>Payroll</b> Department        |
| <b>Payment</b> to Employees              | Cost Accounting Department       |
| Statutory <b>Liabilities</b> Discharge   | Cost Accounting Department       |

#### Labour Turnover

|    |  |
|----|--|
| 1. | Definition<br>Change in <b>labour force</b> composition due to employees <b>leaving</b> and new ones joining |
|----|--|

## Types of Labour Turnover

|    |   |
|----|---|
| 1. | Voluntary<br>Resignation, personal <b>decisions</b>   |
| 2. | Involuntary<br><b>Layoffs</b> , dismissals  |
| 3. | Avoidable<br><b>Poor</b> working <b>conditions</b> , low pay, <b>disputes</b> , etc. (can be minimized) |
| 4. | Unavoidable<br><b>Retirement</b> , death, seasonal <b>retrenchment</b> , etc. (not in control)          |

## ◇ Causes of Labour Turnover

|    |   |
|----|---|
| 1. | Personnel Causes<br><b>Dissatisfaction</b> , job <b>mismatch</b> , personal responsibilities          |
| 2. | Unavoidable Causes<br><b>Retrenchment</b> , material shortage, seasonal trade                         |
| 3. | Avoidable Causes<br><b>Low</b> pay, disputes, poor working conditions, <b>lack</b> of <b>benefits</b> |

## Cost of Labour Turnover

## Preventive Costs (to reduce turnover)

|    |   |
|----|---|
| 1. | Employee Benefits<br><b>Retention</b> through <b>perks</b> (insurance, pension, etc.) |
| 2. | Training & Development<br>Skill <b>enhancement</b> , job satisfaction                 |
| 3. | Wellness Programs<br>Physical & <b>mental</b> well-being <b>support</b>               |
| 4. | Competitive Compensation<br>Market-aligned salaries to avoid <b>attrition</b>         |
| 5. | Recognition Programs<br>Acknowledgment and <b>morale</b> boosting                     |

## Replacement Costs (incurred after turnover)

|    |  |
|----|--|
| 1. | Recruitment Expenses<br>Advertising, interviews, <b>screening</b>  |
| 2. | Training & Orientation<br>Preparing <b>new</b> hires for job roles |
| 3. | Productivity Loss  |

|    |   |
|----|---|
|    | Output drops due to <b>inexperience</b>                               |
| 4. | Wastage<br>Errors, <b>unfinished</b> work by exiting <b>employees</b> |

#### ◇ Treatment of Labour Turnover in Cost Accounting

|    |   |
|----|---|
| 1. | Preventive Costs<br>Treated as <b>overheads</b> & apportioned based on <b>number of employees</b>                               |
| 2. | Replacement Costs<br>✓ If department-specific → charge to <b>that department</b><br>✓ If general → apportion to all departments |

#### Overtime

|    |  |
|----|--|
| 1. | Definition<br>Work done beyond <b>normal working hours</b> , paid at <b>premium rates</b> (often double) |
|----|--|

#### Causes of Overtime

- Increased workload
- Tight deadlines
- Staff shortages
- Seasonal demand
- Urgent customer orders
- Emergencies

#### CAS-7 Definition

|    |   |
|----|---|
| 1. | " <b>Overtime Premium</b> is the extra amount payable beyond the normal wages and salaries for work beyond normal hours." |
|----|---|

#### Components of Overtime Cost

|    |   |
|----|---|
| 1. | Standard Cost<br>Charged to production order or cost center |
| 2. | Premium Portion<br>Depends on cause (explained below)       |

#### Treatment of Overtime Premium (As per CAS-7 Para 6.6)

|    |   |
|----|---|
| 1. | Customer Rush Order<br>Charge directly to <b>job or product</b> |
|----|---|

|    |  |
|----|--|
| 2. | General Work Pressure<br>Treat as <b>overheads</b>                             |
| 3. | Departmental Delay<br>Charge to <b>concerned department</b>                    |
| 4. | Uncontrollable Circumstances<br>Charge to <b>Costing Profit &amp; Loss A/c</b> |



#### Disadvantages of Overtime

- Higher labour cost
- Worker fatigue and safety concerns
- Quality deterioration
- Work-life imbalance
- Increased employee turnover
- Disrupted routine operations
- Reduced innovation
- Higher training costs due to attrition

#### ◆ Idle Time

|            |  |
|------------|--|
| Definition | Time when employees/machines are <b>paid</b> but <b>not productive</b> |
|------------|--|

#### ◆ CAS-7 Definition

Idle Time = **Paid time** - **time booked to cost objects**

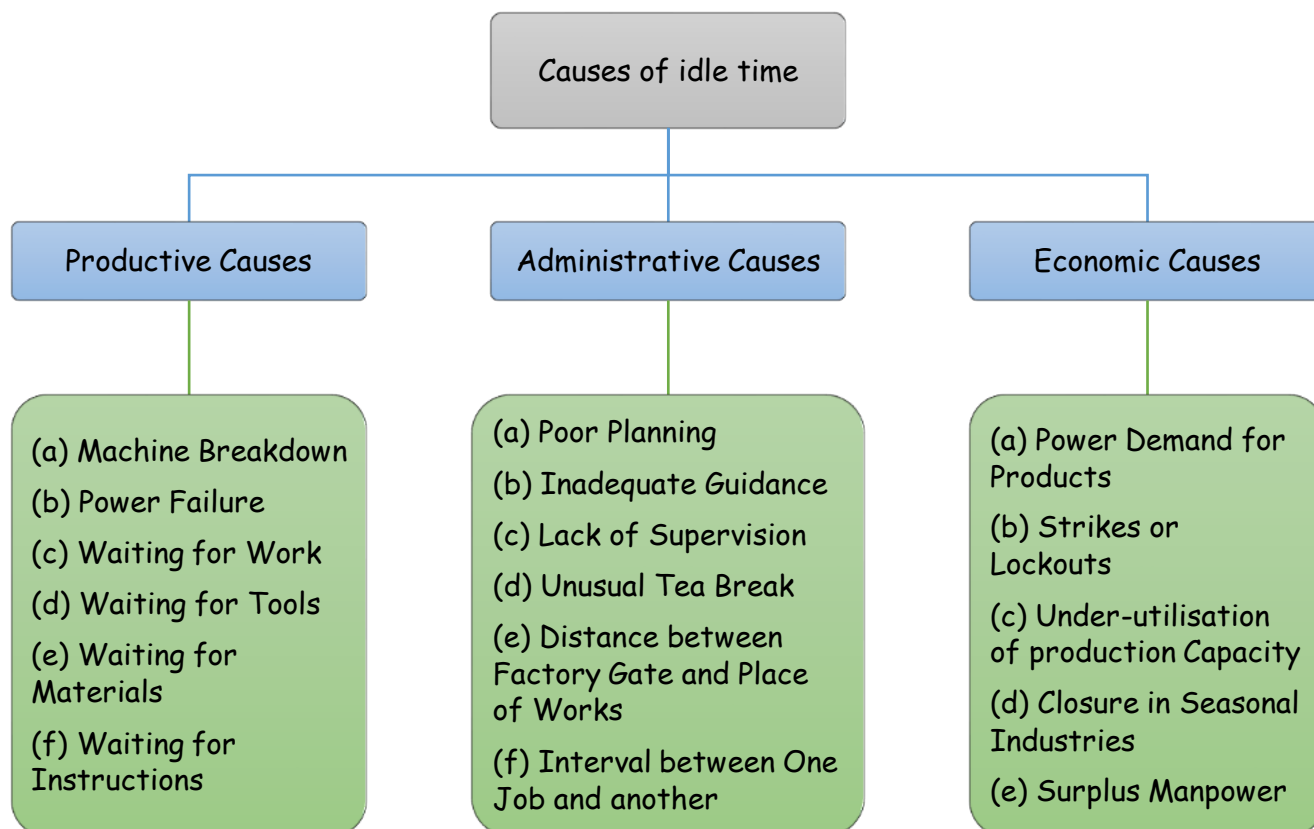
Cost of Idle Time = **Idle Hours** × **Hourly Rate**

#### ◆ Idle Time Ratio

$$\text{Idle Time Ratio} = \left( \frac{\text{Idle Hours}}{\text{Total Hours}} \right) \times 100$$

#### Classification of Idle Time

|    |  |
|----|--|
| 1. | Normal Idle Time<br>Unavoidable (e.g., rest breaks, machine setup)     |
| 2. | Abnormal Idle Time<br>Due to inefficiencies (e.g., breakdowns, delays) |



### Treatment of Normal and Abnormal Idle Time

| Type of Idle Time     | Definition   | Treatment  |
|-----------------------|--|--|
| 1. Normal Idle Time   | Regular, expected, and inherent in any production process (e.g., breaks, routine maintenance). | <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Included in standard cost</li> <li><input checked="" type="checkbox"/> Absorbed into production cost</li> <li><input checked="" type="checkbox"/> Booked to factory/works overheads</li> <li><input checked="" type="checkbox"/> Tracked using standing order numbers for control purposes</li> </ul>           |
| 2. Abnormal Idle Time | Unexpected, non-routine disruptions (e.g., power failure, raw material delay, strikes).        | <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Not included in standard cost</li> <li><input checked="" type="checkbox"/> Charged directly to affected job/unit or</li> <li><input checked="" type="checkbox"/> Transferred to Costing P&amp;L Account depending on system</li> <li><input checked="" type="checkbox"/> Investigated for prevention</li> </ul> |

### CAS - 7 Guidelines on Idle Time Treatment

|   |  |
|---|--|
| <input checked="" type="checkbox"/> Unavoidable Idle Time (Significant Periods) | Charged to Production/Standing Order being worked on |
|---|--|

|   |      |      |  |
|---|------|------|--|
| <input checked="" type="checkbox"/> Normal (Short/Expected)     | Idle | Time | Booked to <b>Factory or Works Overheads</b> under separate standing order numbers                                |
| <input checked="" type="checkbox"/> Abnormal (Heavy/Unexpected) | Idle | Time | <b>Not included in cost</b> ; adjusted via <b>Costing Profit &amp; Loss A/c</b> or <b>Integrated P&amp;L A/c</b> |

◇ Summary Table: Idle Time Cost Treatment

| Item   | Charged to   |
|--|--|
| 1) Cost of Normal & Controllable Idle Time     | <input checked="" type="checkbox"/> <b>Factory Overheads</b>                 |
| 2) Cost of Normal but Uncontrollable Idle Time | <input checked="" type="checkbox"/> <b>Jobs (via inflated wage rates)</b>    |
| 3) Cost of Abnormal & Uncontrollable Idle Time | <input checked="" type="checkbox"/> <b>Costing Profit &amp; Loss Account</b> |

| General Principles for Designing Remuneration Systems |   |
|---|---|
| 1.  | <b>Simplicity</b><br>The system should be <b>easy to understand</b> with clear segments.  |
| 2.  | <b>Acceptability</b><br>Employees must be able to accept the method <b>without doubts</b> .   |
| 3.  | <b>Flexibility</b><br>Should <b>adapt to future changes</b> or variations.  |
| 4.  | <b>Stabilize Labour Turnover</b><br>A good method helps <b>reduce turnover</b> caused by dissatisfaction.                           |
| 5.  | <b>Fair Wages</b><br>Should ensure <b>fairness</b> —benefiting both <b>employer (productivity)</b> and <b>employee (earnings)</b> . |
| 6.  | <b>Incentives</b><br><b>Incentive payments</b> should be integrated to boost productivity.  |
| 7.  | <b>Reduce Absenteeism</b><br>Must help minimize <b>avoidable absences</b> .   |
| 8.  | <b>Improve Output</b><br>Final goal: <b>higher production</b> and <b>better quality</b> .   |

### A. Time Rate Method

| Type                            | Key Features  | When Used   | Pros   | Cons  |
|---------------------------------|---|---|--|---|
| 1. Time Rate at Ordinary Levels | Fixed <b>rate per hour</b> ; wages paid based on <b>time worked</b> , not output. | i. <b>Skilled jobs</b> , where <b>quality &gt; quantity</b><br>ii. <b>Unquantifiable work</b><br>iii. <b>Interdependent jobs</b><br>iv. <b>Machine-paced work</b><br>v. <b>Trainees or learners</b> | <input checked="" type="checkbox"/> Assures <b>minimum income</b><br><input checked="" type="checkbox"/> Focus on <b>quality</b> | <input checked="" type="checkbox"/> No <b>incentive</b> for efficiency<br><input checked="" type="checkbox"/> May cause <b>demotivation</b> |

|   |   |   |   |   |
|---|---|---|---|---|
|   |   | vi. Where <b>continuous supervision</b> isn't possible          |   |   |
| 2. <b>Time Rate at High Wage Levels</b> | Like ordinary time rate but with <b>higher pay rates; overtime not allowed.</b>       | To <b>attract talent</b> and motivate performance               | <input checked="" type="checkbox"/> <b>Attracts skilled workers</b> | <input checked="" type="checkbox"/> <b>Costly</b> if productivity does not increase |
| 3. <b>Graduated Time Rate</b>           | <b>Time rate varies</b> based on personal attributes and <b>cost of living index.</b> | Where <b>personal quality &amp; inflation adjustment</b> matter | <input checked="" type="checkbox"/> <b>Fair and flexible</b>        | <input checked="" type="checkbox"/> <b>May be complex to manage</b>                 |

|    |   |
|----|---|
|    | ◇ <b>B. Piece Rate Method (Payment by Results)</b>  |
| 1. | <b>Performance-Based</b><br>Wages are <b>based on output</b> . Higher the output, higher the wages. |
| 2. | <b>Flat Rate</b><br>Workers get a <b>fixed rate per unit</b> produced or per time worked.           |
| 3. | <b>Incentive Focused</b><br>Strong motivation for <b>productivity and efficiency</b> .              |
| 4. | <b>Suitability</b><br>Best for <b>measurable output</b> and <b>routine tasks</b> .                  |
| 5. | <b>Considerations</b><br>Must ensure <b>fair implementation, equity, and work quality</b> .         |
| 6. | <b>Limitation</b><br>Can lead to <b>quality compromise, work stress, or neglect of team tasks</b> . |

### Advantages and Disadvantages of Piece Rate System

| Advantages  | Details   |
|---|---|
| <input checked="" type="checkbox"/> <b>Incentive for Productivity</b>         | Encourages higher output since more work equals more pay.               |
| <input checked="" type="checkbox"/> <b>Individual Performance Recognition</b> | Rewards are tied directly to <b>individual effort</b> and performance.  |
| <input checked="" type="checkbox"/> <b>Effort-Earnings Link</b>               | Clear and fair relationship between <b>work done and wages earned</b> . |

| <input checked="" type="checkbox"/> Simple and Transparent     | Easy to understand and administer— $wages = rate \times output$ .                        |
|--|--|
| <input checked="" type="checkbox"/> Cost Control               | Employer pays only for actual production— <b>better labour cost management</b> .         |
| Disadvantages  | Details  |
| <input checked="" type="checkbox"/> Quality Sacrifice          | Workers may <b>compromise quality</b> to increase quantity.                              |
| <input checked="" type="checkbox"/> Stress and Fatigue         | Pushing for more output may lead to <b>overwork and exhaustion</b> .                     |
| <input checked="" type="checkbox"/> Difficulty in Rate Setting | Fair piece rates are <b>hard to determine</b> , especially across varied tasks.          |
| <input checked="" type="checkbox"/> Lack of Teamwork           | Encourages <b>individual focus</b> at the expense of collaboration.                      |
| <input checked="" type="checkbox"/> Potential Exploitation     | Employers might <b>fix unrealistic targets or low rates</b> .                            |
| <input checked="" type="checkbox"/> Worker Resistance          | Workers may <b>oppose</b> this system fearing <b>job insecurity or unfair earnings</b> . |

### Types of Piece Rate Systems

| Type                       | Description  | Benefits   | Limitations   |
|----------------------------|--|--|---|
| 1. Straight Piece Rate     | Fixed rate per unit produced. e.g., ₹10/unit × 300 units = ₹3,000.                               | <input checked="" type="checkbox"/> Simple and strong incentive<br><input checked="" type="checkbox"/> Increased productivity<br><input checked="" type="checkbox"/> Lower unit cost | <input checked="" type="checkbox"/> Penalizes inefficiency due to reasons beyond control.                                     |
| 2. Differential Piece Rate | <b>Multiple piece rates</b> based on <b>efficiency levels</b> . Higher efficiency = higher rate. | <input checked="" type="checkbox"/> Motivates higher performance<br><input checked="" type="checkbox"/> Rewards efficiency<br><input checked="" type="checkbox"/> Reduces idle time  | <input checked="" type="checkbox"/> Complex to administer<br><input checked="" type="checkbox"/> Risk of perceived unfairness |

## CHAPTER 10: PROCESS COSTING

### 1. Introduction

- ✓ **Process** costing is a **method** of costing used mainly in manufacturing where units are continuously mass-produced through **one** or **more processes**.
  - ✓ In process costing, it is the **process** that is **costed** (unlike job costing where each job is costed).
  - ✓ The **method** used is to take the **total cost** of the process and **average** it over the **units** of production.
  - ✓ **Process** costing is a 'form of costing applicable to **continuous processes** where process costs are attributed to the number of units produced. This may involve estimating the **number** of **equivalent** units in stock at the **start** and **end** of the **period** under consideration.'
- CIMA Official Terminology
- ✓ **Process** Costing is a method of **Costing** which is used in the following **industry**
    - **Oil** refining
    - The manufacture of **soap**
    - **Paint** manufacture
    - Food and drink **manufacture**

### 2. Process Costing Vs Job/Batch Costing

| Aspect                      | Process Costing  | Job/Batch Costing   |
|-----------------------------|--|---|
| 1. Nature of Production     | <b>Continuous</b> and Mass Production                              | <b>Intermittent</b> and Customized Production                   |
| 2. Identifiability of Units | <b>Indistinguishable</b> Units (Homogeneous Products)              | <b>Distinguishable</b> Units (Heterogeneous Products)           |
| 3. Cost Accumulation        | <b>Accumulates</b> costs by production process or <b>stage</b>     | <b>Accumulates</b> costs by job or <b>batch</b>                 |
| 4. Cost Assignment          | <b>Average</b> Cost per Unit is calculated for each <b>process</b> | <b>Actual</b> Cost per Unit is calculated for each <b>job</b>   |
| 5. Application              | Used in <b>industries</b> with <b>standardized</b> production      | Commonly <b>applied</b> in industries with <b>customization</b> |
| 6. Industries               | <b>Chemical</b> manufacturing, food processing                     | Custom <b>furniture</b> manufacturing, construction             |
| 7. Timing of Costing        | Applied throughout <b>continuous</b> production processes          | Applied to specific, distinct jobs or <b>batches</b>            |

|                             |   |   |
|-----------------------------|---|---|
| 8. Calculation of Unit Cost | Total <b>costs</b> of a process divided by total <b>units</b> | Total <b>costs</b> of a job or batch divided by <b>quantity</b> |
|-----------------------------|---|---|

### 3. Valuation of Output in each Process

#### Procedure:

- ✓ **Debit** The Process Account with All its **Expenses**.
- ✓ **Credit** The Process Account with Normal Loss Scrap **Income**.
- ✓ Find The **Estimated Cost Per Unit** of Output.
 
$$\frac{\text{Total cost} - \text{Normal Loss Scrap Income}}{\text{Input} - \text{Normal Loss units}}$$
- ✓ Find The **Value** of Abnormal **Loss** or Abnormal **Gain**.
- ✓ **Adjust** The Normal Loss Account with **Cash** or Abnormal **Gain**.
- ✓ Transfer The Net **Balance** of Abnormal **Loss** or Abnormal **Gain** To Costing **Profit and Loss** A/c.

### 4. Costing Procedure in Process Costing

#### A. Material

- ✓ Raw **materials** required for each **process** is drawn from stores against material **requisitions**. Proper **procedure** like preparing and authorizing the **requisition**, pricing of the issues, return of materials to the stores, transfer of material from one **process** to another should be followed while issuing the **materials**.
- ✓ Cost of **materials** consumed should be computed as per the method **employed** for pricing of the issues and the cost should be debited to the **process** account.

#### B. Labour

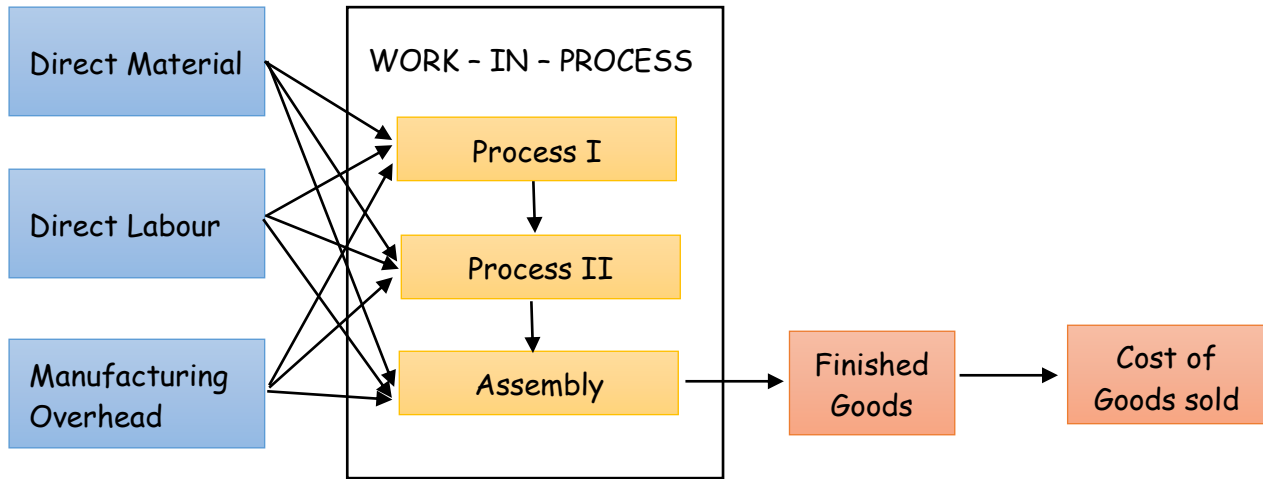
- ✓ **Wages** paid to workers and supervisory **staff** should be charged to the particular **process** if they can be **identified** with it. If workers work on two or more **processes**, proper allocation should be made according to some **basis** like time spent on each process.

#### C. Direct Expenses

- ✓ If **expenses** are **identifiable** with a particular process, they should be **charged** to that process. For example, cost of electricity, **depreciation** may be charged **directly** to a process if they are **identifiable** with it.

## D. Overheads

- ✓ By **nature**, overheads are indirect expenses and hence cannot be identified with a particular process. These expenses can be apportioned on some **suitable** basis and **charged** to the **process**.



Preparation of Process Accounts

## 5. Treatment of Normal, Abnormal Loss and Abnormal Gain

### A. Normal Process Loss:

- ✓ It is the **loss** which is unavoidable on account of **inherent** nature of production process. Such loss can be **estimated** in advance on the basis of past **experience** or available data.
- ✓ The **normal** process loss is recorded only in terms of **quantity** and the cost per unit of usable production is **increased accordingly**.
- ✓ **Treatment in Cost Accounts:** Where scrap **possesses** some **value** as a waste product or as raw material for an earlier **process**, the value thereof is credited to the **process account**. This **reduces** the cost of normal output; process **loss** is shared by usable units.

### B. Abnormal Process Loss:

- ✓ Any loss caused by **unexpected** or abnormal conditions such as plants **breakdown**, sub-standard materials, carelessness, accident etc., or **loss** in excess of the margin anticipated for normal process loss should be regarded as **abnormal process loss**.
- ✓ **Treatment in Cost Accounts:** Abnormal Loss Account is credited with **realizable** scrap value, if any. The balance is **written** off to Costing **Profit** and **Loss** Account.
- ✓ The units of **abnormal** loss or gain are calculated as under: **Abnormal loss (or gain) = Total Loss - Normal Loss**.  
The valuation of **abnormal** loss should be done with the help of the **formula** below:

Value of

$$\text{Abnormal Loss} = \frac{\text{Total cost incurred in the process} - \text{Scrap Income of Normal Loss units}}{\text{Input units} - \text{Normal Loss units}} \times \text{Abnormal Loss units}$$

### C. Abnormal Process Gain:

- ✓ Normal **loss** is an estimate which is based on **expectation** in process industries in normal condition but slight **differences** are bound to occur between the actual and the **anticipated losses** of a process.
- ✓ These differences will not always represent **increased loss**, on occasions the **actual loss** will be less than that expected. Thus, when actual loss in a process is less than the expected, it results in an **abnormal gain**. The value of the gain will be calculated in similar manner to an **abnormal loss**.
- ✓ **Treatment in Cost Accounts:** The Abnormal Gain Account is to be **debited** for the loss of income on account of less **quantity** of sale of **scrap** available as a result of **Abnormal gain** and **Normal Process Loss Account credited** accordingly. The balance is **transferred** to Costing **Profit and Loss Account** as **abnormal gain**.

Value of Abnormal Gain =

$$\frac{\text{Total cost incurred in the process} - \text{Scrap Income of Normal Loss units}}{\text{Input units} - \text{Normal Loss units}} \times \text{Abnormal Gain units}$$

#### Doubt Busters:

1. Abnormal Loss is valued separately and taken to Costing P/L A/c.
2. Normal Loss is not valued separately but its presence inflates the per unit cost of expected good units. (Refer Classroom Discussion)

#### Example: Abnormal Losses and Gains

Suppose the input to a process is 1,000 units at a cost of Rs.4,500. Normal loss is 10% and there is no opening or closing inventories. Determine the accounting entries for the cost of output and the cost of the loss if actual output was

- (i) 860 units (so that actual loss is 140 units)
- (ii) 920 units (so that actual loss is 80 units)

**Solution:**

Before we demonstrate the use of the 'four-step framework' we will summarise the way that the losses are dealt with.

- (a) Normal loss is given no share of cost.
- (b) The cost of output is therefore based on the expected units of output, which in our example amount to 90% of 1,000 (Normal loss being 10%) = 900 units.
- (c) Abnormal loss is given a cost, which is written off to the income statement via an abnormal loss/gain account.
- (d) Abnormal gain is treated in the same way, except that being a gain rather than a loss, it appears as a debit entry in the process account (as it is a sort of input, being additional

unexpected units), whereas a loss appears as a credit entry in this account (as it is a sort of output)

(i) Output is 860 units

**Step 1 - Determine output and losses**

If actual output is 860 units and the actual loss is 140 units:

|                            | Units |
|----------------------------|-------|
| Actual loss                | 140   |
| Normal loss (10% of 1,000) | 100   |
| Abnormal loss              | 40    |

**Step 2 - Calculate cost per unit of output and losses**

The cost per unit of output and the cost per unit of abnormal loss are based on expected output.

$\text{Cost Incurred} \div \text{Expected Output} = ₹ 4,500 \div 900 \text{ units} = ₹ 5 \text{ per unit}$

**Step 3 - Calculate total cost of output and losses**

Normal loss is not assigned any cost.

|                            | (₹)          |
|----------------------------|--------------|
| Cost of output (860 × ₹ 5) | 4,300        |
| Normal loss                | 0            |
| Abnormal loss (40 × ₹ 5)   | 200          |
| <b>Total Cost</b>          | <b>4,500</b> |

**Step 4 - Preparation of necessary accounts**

Dr. Process Account Cr.

| Particulars       | Units | (₹)   | Particulars                    | Units | (₹)   |
|-------------------|-------|-------|--------------------------------|-------|-------|
| To, Cost incurred | 1,000 | 4,500 | By Normal loss                 | 100   | 0     |
|                   |       |       | By Output (finished goods a/c) | 860   | 4,300 |
|                   |       |       | By Abnormal loss               | 40    | 200   |
|                   | 1,000 | 4,500 |                                | 1,000 | 4,500 |

Dr. Abnormal Loss Account Cr.

| Particulars     | Units | (₹) | Particulars | Units | (₹) |
|-----------------|-------|-----|-------------|-------|-----|
| To, Process a/c | 40    | 200 | By P/L A/c  | 40    | 200 |

(ii) Output is 920 units

**Step 1- Determine output and losses**

If actual output is 920 units and the actual loss is 80 units:

|                            | Units |
|----------------------------|-------|
| Actual loss                | 80    |
| Normal loss (10% of 1,000) | 100   |

Abnormal gain 20

Step 2- Calculate cost per unit of output and losses:

The cost per unit of output and the cost per unit of abnormal gain are based on expected output.

$$= \text{Cost Incurred} \div \text{Expected Output} = ₹ 4,500 \div 900 \text{ units} = ₹ 5 \text{ per unit}$$

(Whether there is abnormal loss or gain does not affect the valuation of units of output. The figure of ₹ 5 per unit is exactly the same as in the previous paragraph, when there were 40 units of abnormal loss.)

Step 3- Calculate total cost of output and losses

|                            | (₹)   |
|----------------------------|-------|
| Cost of output (920 × ₹ 5) | 4,600 |
| Normal loss                | 0     |
| Abnormal gain (20 × ₹ 5)   | (100) |
|                            | 4,500 |

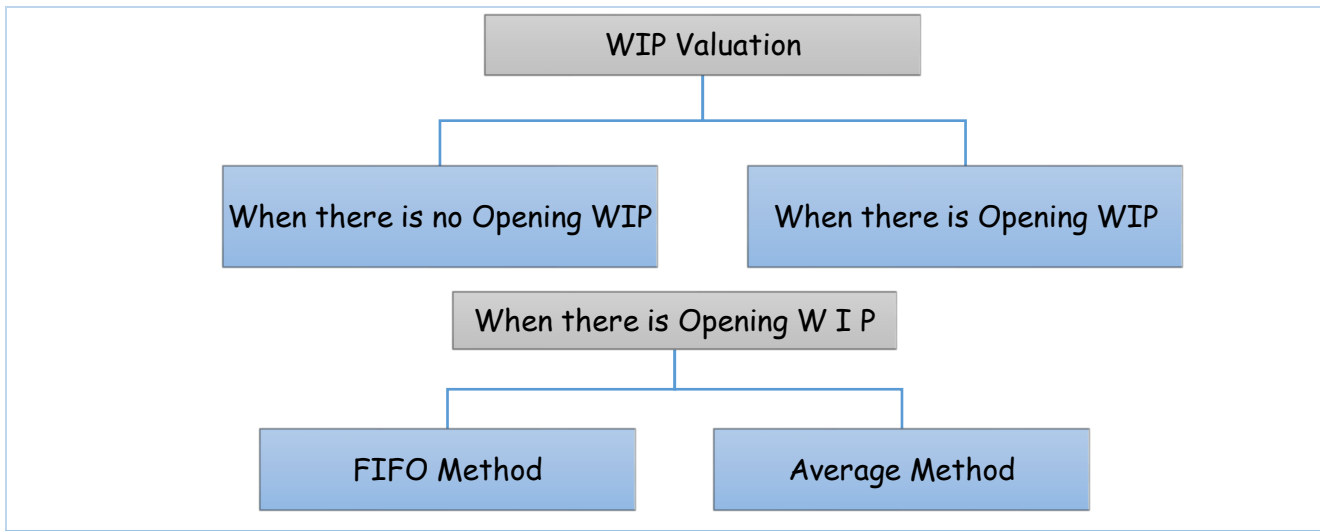
Step 4- Preparation of necessary accounts

| Dr.                  |       |       | Process Account                |       |       | Cr. |  |  |
|----------------------|-------|-------|--------------------------------|-------|-------|-----|--|--|
| Particulars          | Units | (₹)   | Particulars                    | Units | (₹)   |     |  |  |
| To Cost incurred     | 1,000 | 4,500 | By Normal loss                 | 100   | 0     |     |  |  |
| To Abnormal gain a/c | 20    | 100   | By Output (finished goods a/c) | 920   | 4,600 |     |  |  |
|                      | 1,020 | 4,600 |                                | 1,020 | 4,600 |     |  |  |

| Dr.         |       |     | Abnormal Gain Account |       |     | Cr. |  |  |
|-------------|-------|-----|-----------------------|-------|-----|-----|--|--|
| Particulars | Units | (₹) | Particulars           | Units | (₹) |     |  |  |
| To P/L A/c  | 20    | 100 | By Process a/c        | 20    | 100 |     |  |  |

## 6. Valuation of Work in Progress

- ✓ The **valuation** of work-in-process presents a good deal of **difficulty** because it has units under different stages of **completion** from those in which work has just begun to those which are only a step short of completion.
- ✓ **Work-in-process** can be valued on **actual** basis, i.e., materials used on the **unfinished** units and the actual amount of labour expenses involved.
- ✓ However, the degree of **accuracy** in such a case **cannot** be **satisfactory**. An alternative method is based on converting partly finished units into **equivalent** finished units.



### FIFO - First in First Out Method:

- ✓ Under this **method** the units completed and **transferred** are taken from both opening work-in-process (WIP) and **freshly introduced** materials/inputs. The cost to complete the opening WIP and other completed units are calculated **separately**.
- ✓ The cost of **opening WIP** is added to cost incurred on completing the incomplete (WIP) units into complete one. The total cost of units **completed** and **transferred** is calculated by adding **opening WIP** cost to cost on **freshly introduced inputs**.
- ✓ In this method the **closing** stock of work in process is valued at **current cost**.

### Weighted Average Method:

- ✓ Under this **method**, the cost of **opening work-in-process** and cost of the **current** period are **aggregated** and the aggregate **cost** is divided by **output** in terms of completed units.
- ✓ The **equivalent** production in this case **consists** of work-load already contained in opening work-in-process and work-load of **current** period.
- ✓ The main difference between **FIFO** method and average method is that units of opening work in process and their cost are taken in full under **average method** while under FIFO method only the **remaining** work done now is **considered**.

## 7. Steps in Process Costing

Steps:

Step-1: Analysis of physical flow of **production** units

Step-2: Statement of **Equivalent** units

| Input       |       | Output      |       | Equivalent Units |       |
|-------------|-------|-------------|-------|------------------|-------|
| Particulars | Units | Particulars | Units | %                | Units |
| xxx         | xxx   | xxx         | xxx   | xxx              | xxx   |

Step-3: Statement of cost per **Equivalent** unit

| Particulars | Cost (₹) | Equivalent Units | Cost per Equivalent Units |
|-------------|----------|------------------|---------------------------|
| xxx         | xxx      | xxx              | xxx                       |

Step-4: Statement of **Apportionment** of total **cost** to units completed and W I P

Step-5: Preparation of **Process A/c**

## 8. Inter Process Profit

- ✓ The **output** of one process is transferred to the **subsequent** process at **cost price**. However sometimes, the **transfer** is made at cost plus certain **percentage** of **profit**. This is done when each process is treated as a **profit center**.
- ✓ In such case, the **difference** between the **debit** and **credit** side of the process account represents profit or loss and is **transferred** to the **Profit and Loss** Account. The stocks at the end and at the beginning contain an element of **unrealized** profits, which have to be **written** back in this method.
- ✓ If the profit element contained in the **closing inventory** is **more** than the profit element in the **opening** inventory, profit will be **overstated** and vice versa. Profit is realized only on the goods sold, thus to obtain the actual profit the main task would be to calculate the profit element contained in the **inventories**.
- ✓ In order to compute the **profit element**, in closing inventory and to obtain the **net realized** profit for a period, three columns have to be shown in the **ledger** for showing the **cost**, **unrealized** profit and the transfer price.
- ✓ In certain instances, the output of a **particular** process is conveyed to the subsequent process by **incorporating** a specific percentage of **profit**, termed as **inter-process** profit. The **fundamental** rationale behind this **approach** is to bill the next process not at the transferor's cost but at its **market** selling price. This **methodology** aids in evaluating the **profitability** of each product. Conversely, it introduces **challenges** in assessing the value of closing stock and **unrealized** profit.
- ✓ The determination of the provision for **unrealized** profit on **closing stock** for each process can be accomplished through a **straightforward** formula.

$$\text{Value of Closing Stock} * \text{Total Profit on the Process} \div \text{Total Cost to the Process}$$

## 9. Core Theory Topics

### Features of Process Costing

| S. No. | Feature | Simplified Description | Key Words Highlighted |
|--------|---------|------------------------|-----------------------|
|--------|---------|------------------------|-----------------------|

|    |  |   |   |
|----|--|---|---|
| 1. | Sequential Processing                    | The output of one process becomes the input to the next, continuing till the final product is completed.  | Output, Input, Final Process, Finished Product                |
| 2. | Continuous Production & Work-in-Progress | Due to continuous production, there is usually closing work-in-progress. Since all units are homogeneous, it's hard to identify cost per unit individually. | Work-in-Progress, Continuous, Homogeneous Mass, Cost per Unit |
| 3. | Process Loss                             | There may be losses during production such as wastage, spoilage, or evaporation.  | Loss, Spoilage, Wastage, Evaporation                          |
| 4. | By-Products and Joint Products           | Production may result in a single product or multiple outputs like by-products or joint products.   | By-Product, Joint Products, Output                            |

## CHAPTER 11: JOINT & BY PRODUCTS

### 1. Introduction

- ✓ **Joint products** are two or more products **separated** in a **process** each of which has a significant value **compared** to the other.
- ✓ Joint products are two or more **products** which are **output** from the **same processing** operation, but which are **indistinguishable** from each other up to their point of **separation**.
- ✓ Joint products are two or more products that are **simultaneously produced** from a **common input** or set of **inputs**, and they typically share common **production processes** up to a certain point.

### 2. Features of Joint and By Products

#### Joint and By Products

- ✓ **Common Inputs:** Joint products arise from the **same raw materials** or inputs. These **inputs** undergo a **common production process** until a certain **stage**, after which they diverge into **separate** products.
- ✓ **Simultaneous Production:** Joint products are **produced** at the same **time** and within the same production process. They are not produced **sequentially** or separately.
- ✓ **Independent Identity:** Each joint product has its own **independent** identity and can be sold as a **separate** and **distinct** product.
- ✓ **Separable and Marketable:** Joint products must be **separable** from each other, meaning they can be **identified** and **quantified** independently. Additionally, each product must be marketable, meaning there is a **demand** for it in the market.
- ✓ **Common Costs Up to Split-off Point:** Joint products share common **costs** up to a specific point in the production process known as the "**split-off point**." Beyond this point, the products become **distinct**, and any further processing costs are specific to **each** product.

#### By Products

- ✓ A by-product is an **incidental** product from a **process** which has an **insignificant** value compared to the main product(s). It may be said to be a **supplementary** or **secondary** product (arising as the result of a process) whose value is small **relative** to that of the **principal** product.
- ✓ A by-product is 'output of some value **produced** incidentally while **manufacturing** the main product'.

CIMA Official terminology

| Feature                     | Joint Product   | By-Product  |
|-----------------------------|---|---|
| 1. Definition               | Two or more <b>products</b> derived from a <b>common input</b> or production process.           | A <b>secondary</b> product that is produced alongside the <b>main product</b> but is <b>not</b> the <b>primary</b> focus of production. |
| 2. Simultaneous Production  | Produced at the <b>same time</b> within the same <b>production process</b> .                    | Produced <b>concurrently</b> but may not share the <b>exact</b> same <b>production</b> process.   |
| 3. Independence of Identity | Each <b>product</b> has its own <b>independent</b> identity and can be sold <b>separately</b> . | The <b>primary</b> product is the main focus, and the <b>by-product</b> is typically of lesser <b>importance</b> .                      |
| 4. Separability             | Products are <b>separable</b> and can be identified and quantified independently.               | Main product is the primary focus, and the <b>by-product</b> may <b>not</b> be <b>easily separable</b> or marketable.                   |
| 5. Value Independence       | The <b>value</b> of one product is <b>independent</b> of the quantities of other products.      | The <b>value</b> of the by-product may be dependent on the <b>main</b> product's <b>production</b> .                                    |
| 6. Examples                 | Products from <b>oil refining</b> (gasoline, diesel, jet fuel).                                 | <b>Sawdust</b> from lumber milling, which is a <b>by-product</b> when producing lumber.   |



#### 4. Methods for Allocation of Joint Cost

- ✓ In case of joint products, the main **objective** of accounting of the cost is to **apportion** the joint costs incurred up to the **split** off point. The manufacturing **process** is same up to a certain stage and after crossing that stage, each product has distinct **manufacturing process**.
- ✓ The total cost of **production** of the joint product will be cost incurred up to the **split** off point duly **apportioned** plus the cost incurred after the split off point. The cost after the split off point can be identified **easily**.
- ✓ The following methods are **adopted** for apportionment of joint cost:

**Physical Quantity Method:** Under this method, cost **apportionment** is made in **proportion** to the **volume** of production. These physical measures may be units, pounds, litres, kilos, tonnes, gallons etc.

**Average Unit Cost Method:** Under this method, the joint cost is **apportioned** to the joint products by computing the **average** unit **cost** of the **product** units. The average unit cost is computed by dividing the total manufacturing cost by the total **number** of **units produced** of all products.

#### Doubt Busters:

It should be noted that the physical unit method also follows the same steps of calculation as followed under Average unit cost method, ultimately giving the same outcome.

**Weighted Average Method:** Under this method, **weights** are **assigned** to each unit based upon size of the units, difference in type of labour employed, material consumption, market share, efforts of labour required and so on. The joint cost is **apportioned** on the basis of the **weights assigned** to each product.

**Selling Price Method:** Under this method, the joint cost is **apportioned** on the basis of sales value at the **split off point**. The logic is that a **product** should bear the share of the joint cost according to its **sale** price. If sales price is **higher** than that of the other products, more share of **joint cost** should be charged to that **product** and if it is comparatively **less** than that of other products, less share of **joint cost** should be **charged** to the same.

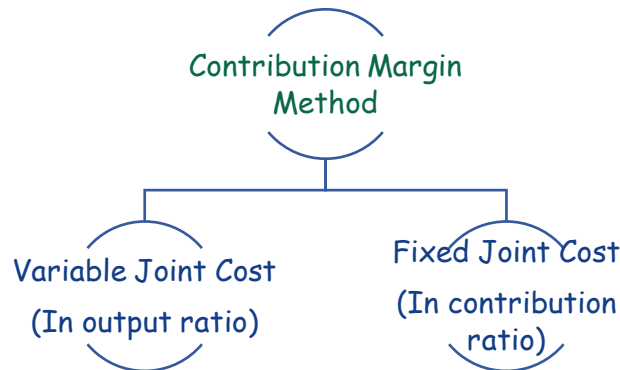
**Reverse Cost Method:** Refer Class Room Discussion

#### Contribution Margin Method:

- ✓ According to this method, **joint costs** are **segregated** into **two** parts - **variable** and fixed. The **variable** costs are apportioned over the joint products on the basis of units produced (average method) or physical quantities.
- ✓ In case the products are **further processed** after the point of **separation**, then all **variable**

cost incurred be **added** to the variable costs determined earlier.

- ✓ In this way total **variable** cost is arrived which is **deducted** from their respective sales values to ascertain their **contribution**. The **fixed** costs are then apportioned over the joint products on the basis of the **contribution** ratios.



### Net Realisable Value at Split off Point

- ✓ To arrive at the **sales value** at the **split-off point**, following are **deducted** from the sales value of joint products at **final stage** i.e. after **processing**:
  - **directly attributable** Selling and distribution expenses like freight, royalty, commission, etc. and
  - **Post split-off** processing cost.
- ✓ This method has **advantage** as relative **sales** value serves as a proxy for relative benefit **received** by each product from the **joint cost**.
- ✓ When **selling prices** for all products exist at split off, the **sales** value at split off method is the **preferred technique**.
- ✓ It is a relatively **simple technique** that depends on a common **basis** for cost allocation - revenues

| Particulars  | Product A<br>(₹) | Product B<br>(₹) | Product C<br>(₹) |
|--|------------------|------------------|------------------|
| Sales Value (Units after processing × Selling Price) | xxx              | xxx              | xxx              |
| Less: Profit Margin                                  | xxx              | xxx              | xxx              |
| Less: Selling & Distribution costs                   | xxx              | xxx              | xxx              |
| Less: Post split-off cost                            | xxx              | xxx              | xxx              |
| Net Realisable Value                                 | xxx              | xxx              | xxx              |

#### Doubt Busters:

- Split-off Point is a point in the production process where Joint Products emerging from the process gets separately identifiable.
- Split of Point has its importance in the joint product costing as joint cost incurred up to this point only and needs to be borne jointly by the products emerging from the common

process. Any cost incurred after Split of Point is a product specific cost and to be borne by the product concerned.

## Market value at the point of separation

- ✓ This method is used for the **apportionment** of joint **costs** to joint products upto the split off point. It is difficult to apply this method if the **market value** of the products at the point of **separation** is not **available**. It is a useful method when the realisable value of joint products at split-off (point of separation) is known and where **further processing** costs are incurred **disproportionately**.
- ✓ To determine the **apportionment** of joint costs over joint products, a factor known as **multiplying** factor is determined. This **multiplying factor** on **multiplication** with the sales values of each joint product gives rise to the proportion of **joint cost**.

$$\text{Multiply in Factor: } (\text{Joint Cost} \div \text{Total Sales Revenue}) \times 100$$

- ✓ Total **Sales Revenue** is sum of **production quantity multiplied** by the **market price** for each of the joint **products**.

## Market value after further processing

- ✓ The basis of **apportionment** of joint cost is the total sales value of **finished** products. The use of this method is **unfair** where further **processing** costs after the point of **separation** are **disproportionate** or when all the joint products are **not** subjected to further **processing**.

## CHAPTER 12: CONTRACT COSTING

### 1. Introduction

- ✓ **Contract costing** is basically, a job costing system that is **applied** to relatively **large cost units** that take a **considerable amount** of time to complete, such as construction and civil engineering work.
- ✓ It is a specific **accounting method** used to track and allocate **costs** associated with a particular **contract** or **project**.
- ✓ This method is particularly **relevant** in industries where **work** is undertaken on a project-by-project basis, such as **construction, manufacturing, or consulting**.
- ✓ The primary goal of **contract costing** is to determine the total cost of a **specific contract** and to allocate these costs **appropriately**.

### 2. Journal Entries

| Accounting of Costs of Contract  |              |               |
|--|--------------|---------------|
| Particulars  | Debit<br>(₹) | Credit<br>(₹) |
| <b>Materials supplied from the stores or purchased directly</b><br>Contract A/c (Contract No:) Dr<br>To Stores Ledger Control A/c (issued from stores)<br>To Cost Ledger Control A/c (direct purchase)   | xxx          | xxx           |
| <b>Transfer of excess material from one contract to another</b><br>Contract A/c (transferee contract no:) Dr<br>To Contract A/c (transferor contract no:)  | xxx          | xxx           |
| <b>Return of surplus materials the same is sold and the concerned contract account is credited with the price realized</b><br>Cost Ledger Control A/c Dr<br>Costing Profit & Loss A/c (loss) Dr<br>To Contract A/c (cost of material)<br>To Costing Profit & Loss A/c (profit) | xxx          | xxx           |
| <b>Any loss of materials due to theft or destruction</b><br>Costing Profit & Loss A/c Dr<br>To Contract A/c  | xxx          | xxx           |
| <b>Any stores items are used for manufacturing tools</b><br>Works Expenses A/c Dr<br>To Stores Ledger Control A/c  | xxx          | xxx           |

|   |     |     |     |
|---|-----|-----|-----|
| (with amount of stores used for works)                  |     |     |     |
| Contract A/c  | Dr  |     |     |
| To Works Expenses A/c                                   |     |     |     |
| (with amount of works used in the contract)             |     |     |     |
| <b>Employee (Labour) Cost</b>                           |     |     |     |
| Contract A/c  | Dr  | xxx |     |
| To Wages A/c  |     |     | xxx |
| To Outstanding Wages A/c                                |     |     |     |
| <b>Expenses</b>   |     |     |     |
| Contract A/c  | Dr  | xxx |     |
| To Direct Expenses A/c                                  |     |     | xxx |
| To Outstanding Direct Expenses A/c<br>(Direct Expenses) |     |     |     |
| Contract A/c  | Dr  |     |     |
| To Overheads A/c<br>(Indirect Expenses)                 |     |     |     |
| <b>Cost of Plant</b>                                    |     |     |     |
| Contract A/c.   | Dr. | xxx |     |
| To Plant and Machinery, A/c<br>(with cost)              |     |     | xxx |
| Plant and Machinery A/c (with WDV)                      | Dr. |     |     |
| To Contract A/c   |     |     |     |
| <b>Charge (depreciation)</b>                            |     |     |     |
| Contract A/c  | Dr  |     |     |
| To Depreciation on Plant and Machinery A/c              |     |     |     |
| <b>Cost of supervision and sub-contractors</b>          |     |     |     |
| Contract A/c  | Dr  |     |     |
| To Cost of Sub-Contract A/c                             |     |     |     |

### 3. Important Terminologies

- ✓ Work-in-Progress in **contract** costing refers to the **work** which is **not** complete on the **reporting** date.

Value of the work-in-progress = the cost of work completed, both certified and uncertified + the cost of work not yet completed + amount of estimated/ notional profit.

- ✓ In the **Balance Sheet** (prepared for management), the work-in-progress is usually shown under two heads, viz., **certified** and **uncertified**.

- ✓ The **cost** of **work** completed and certified and the **profit** credited will appear under the **head** 'certified' work-in-progress, while the **completed** work not yet **certified**, cost of material, employee and other expenses which has **not** yet reached the stage of **completion** are shown under the head "**uncertified**" work-in-progress.
- ✓ Cost of **Work Certified** or Value of Work Certified:  

$$\text{Value of Work Certified} = \text{Value of Contract} \times \text{Work certified (\%)}$$
- ✓ 
$$\text{Cost of Work Certified} = \text{Cost of work to date} - (\text{Cost of work uncertified} + \text{Material in hand} + \text{Plant at site})$$
- ✓ Cost of **Work Uncertified**: It represents the cost of the **work** which has been carried out by the contractor but has not been certified by the **expert**. It is always shown at **cost price**.
- ✓ **Retention Money**:  

$$\text{Retention money} = \text{Value of work certified} - \text{Payment made to contractor}$$
- ✓ **Notional Profit**  

$$\text{Notional profit} = \text{Value of work certified} - (\text{Cost of work to date} - \text{Cost of work not yet certified})$$
- ✓ **Estimated Profit**: It is the excess of the contract **price** over the **estimated** total cost of the contract. [can be calculated and feasible to **calculate** only in case of **contracts** whose end has neared].
- ✓ **Cost-plus** contract is a contract where the value of the contract is determined by **adding** an agreed **percentage** of **profit** to the total **cost**.
- ✓ **Escalation clause** in a contract **empowers** a contractor to **revise** the **price** of the contract in case of increase in the prices of inputs due to some **macro-economic** or other agreed reasons.

## 4. Profit on Incomplete Contract

**Profit on Incomplete Contract** - For the purpose of finding out the **portion** of the notional **profit** to be transferred to **Profit** and **Loss** Account, the contracts are divided in the following manner:

### I Contracts which have just commenced:

In this case **no portion** of the notional profit shall be **transferred** to **Profit** and **Loss** Account and the entire amount is kept as **reserve**. There are no hard and fast rules to determine that a particular **contract** is just commenced or reasonably **advanced** or almost complete. However, as per general norms, the contracts in which **less** than **1/4th** work is done are regarded as the contracts which have just **commenced**.

### II Contracts which have reasonably advanced:

In this case the **profit** to be transferred to Profit and Loss Account out of **notional** profit is based on the degree of completion of the **contract**. The degree of completion of the contract can be found out by comparing work certified and the **contract** price.

- If the degree of completion of work is ( $> 1/4$  and  $< 1/2$ ),  $1/3$ rd of the notional profit shall be transferred to Profit and Loss Account and the remaining amount would be kept as reserve.
- If the degree of completion of work is more than or equal to  $1/2$ ,  $2/3$ rd of the notional profit shall be transferred to Profit and Loss Account and the remaining amount would be kept as reserve.

The profit so arrived in the above manner shall further be reduced in the ratio of cash received to work certified. Thus, the formula is as follows:

$$\text{(Notional Profit} \times \frac{2}{3} \text{ or } \frac{1}{3} \text{ (as the case may be) } \times \left[ \frac{\text{Cash received}}{\text{Work Certified}} \right]$$

### III Contracts which are almost complete:

In this case the portion of the profit to be transferred to Profit and Loss Account is calculated by using the estimated total profit which is ascertained by subtracting the total cost to date and the additional estimated cost to complete the contract from the contract price. The different formulas for such computations of profit are as follows:

- Estimated Profit  $\times \frac{\text{Work certified}}{\text{Contract Price}}$
- Estimated Profit  $\times \frac{\text{Work certified}}{\text{Contract Price}} \times \frac{\text{Cash received}}{\text{Work Certified}}$
- Estimated Profit  $\times \frac{\text{Total cost to date}}{\text{Total Cost}}$
- Estimated Profit  $\times \frac{\text{Total cost to date}}{\text{Total Cost}} \times \frac{\text{Cash received}}{\text{Work Certified}}$

## 5. Core Theory Topics

### Key Features of Contract Costing

|    |  |
|----|--|
| 1. | <p><b>Construction Activities</b><br/>Mainly used in construction-based industries like building, bridge, shipbuilding, etc.</p>                                   |
| 2. | <p><b>Identification of Contracts</b><br/>Each contract/project is treated individually, whether it's a construction job, custom product, or specific service.</p> |
| 3. | <p><b>Direct Expenses</b><br/>Majority of costs are direct (e.g., materials, labour, plant, sub-contracts). Overheads are minimal and apportioned suitably.</p>    |
| 4. | <p><b>Accumulation of Costs</b><br/>All contract-specific costs are accumulated separately — includes direct materials, labour, and allocated overheads.</p>       |

|     |   |
|-----|---|
| 5.  | <p><b>Cost Allocation</b></p> <p>Direct costs are easily traceable; indirect costs are allocated using predetermined rates or standard methods.</p>   |
| 6.  | <p><b>Recording Revenue</b></p> <p>Revenue is recognized based on work progress or stage of completion.</p>   |
| 7.  | <p><b>Job Costing Nature</b></p> <p>A form of job costing where each contract is treated as a separate cost unit.</p>   |
| 8.  | <p><b>Profit Measurement</b></p> <p>Helps in measuring profitability by comparing contract revenue with total incurred costs.</p>   |
| 9.  | <p><b>Escalation Clause</b></p> <p>Contracts may have an escalation clause for cost increases due to inflation or market conditions.</p>  |
| 10. | <p><b>Part Payments &amp; Retention</b></p> <p>Progress payments are made based on architect certificates for completed work; includes retention money withheld until project completion.</p> |

## Types of Contracts in Contract Costing

| S. No. | Type of Contract                 | Description   | Example  |
|--------|----------------------------------|---|--|
| 1.     | Fixed Price Contracts            | A fixed amount is agreed between contractor and contractee for the entire project.                          | A contractor quotes ₹10,000 for a building. Both parties agree, and the contractor completes work at that price.   |
| 2.     | Contracts with Escalation Clause | Allows the price to vary in case of inflation or delays. A safeguard against cost increases.                | For a ₹10,000 contract with a 5% increase every 6 months of delay. If delayed by 18 months, price becomes ₹11,500. |
| 3.     | Cost Plus Contracts              | Contract value = Actual Cost + Fixed % Profit. The contractor is assured of profit and protected from loss. | If actual cost = ₹80,000 and agreed profit = 10%, contract value = ₹88,000.  |

## CHAPTER 13: OPERATING COSTING

### 1. Introduction

- ✓ **Cost Accounting** is traditionally associated with **manufacturing** companies, it is applicable for service companies as well.
- ✓ In the **modern** competitive market, with the increased **importance** of service sector, the need for cost accounting has also increased.
- ✓ The costing **method** applied in these (service) **industries** is known as '**Operating Costing**'.
- ✓ Operating costing is that **form** of operation costing which applies where **standardized** services are **provided** either by an **undertaking** or by a service cost centre within an undertaking.

CIMA Terminology

### 2. Service costing Vs Job/Batch/Contract/Process costing

- ✓ This table provides a **concise** overview of the key differences between **service** costing and job/batch/contract/ process costing in terms of the **nature** of output, unit of measurement, costing method, and **customization**.
- ✓ The key **differences** between service costing and job/batch/contract/process costing are presented below;

| Aspect                 | Service Costing                                | Job / Batch / Contract / Process Costing                                  |
|------------------------|--|---|
| 1. Nature of Output    | <b>Intangible</b> services                     | <b>Tangible</b> goods   |
| 2. Unit of Measurement | <b>Time</b> (e.g., per hour, per consultation) | <b>Physical</b> units (e.g., products, batches, contracts)                |
| 3. Costing Method      | Focuses on costs of providing <b>services</b>  | <b>Allocates</b> costs to specific jobs, batches, contracts, or processes |
| 4. Customization       | <b>Services</b> are often customized           | Goods may be standardized or <b>customized</b>                            |

### 3. Unit Cost Measure

- ✓ Service costing involves determining **unit** costs for different **business** elements in the service industry.
- ✓ The **primary** challenge associated with **service costing** lies in the **complexity** of defining a practical cost unit that **accurately** reflects the value of the service rendered. Often, the adoption of a **composite** cost unit may be considered more **suitable**.

- ✓ **Cost Unit:** A cost unit is a **standard** measure used in cost accounting to **quantify** and analyze costs associated with a **specific** product, service, or activity. It **represents** the basis for calculating the cost of **production** or delivery. The choice of a cost unit depends on the nature of the business and the specific context of **cost analysis**.

| Service                               | Cost Unit  |
|---------------------------------------|--|
| Road, rail and air transport services | Passenger/mile or kilometer, ton/mile, tonne / kilometer |
| Hotels                                | Occupied bed-night                                       |
| Education                             | Full-time student  |
| Hospitals                             | Patient  |
| Catering establishment                | Meal served  |

- ✓ A **composite** cost unit is an **aggregate** measure that **combines** various cost elements into a single unit for comprehensive cost analysis. It provides a **holistic** view by incorporating all relevant costs **associated** with a particular product, service, or activity.
- ✓ Composite unit may be computed in two ways.

- **Absolute (Weighted Average) basis:** The cost per **patient/day** (= the average cost of treating one **patient** for one day) or the cost per **hospital bed/day** (= the cost of maintaining one **hospital** bed in a hospital for one day). These costs are used by health service providers.
- **Commercial (Simple Average) basis:** It is the product of **average qualitative** and total quantitative factors.

**Average Cost Per Unit of Service = Total Cost Incurred in the Period ÷ Number of Service Units supplied in the period.**

**Cost Per Unit of Service = Total Cost of the Service ÷ Number of Units of Service**

## Transport Sector

- ✓ **Transport** undertakings include goods transport **organisations** as well as passenger transport organisations.
- ✓ The cost unit is either **ton kilometer** or **passenger kilometer**.
- ✓ The meaning is cost of carrying **one** ton over a **distance** of one kilometer or cost of carrying one **passenger** for a distance of one kilometer.
- ✓ The costs are shown under the following heads:
  - ✓ **Standing Charges or Fixed Costs:** These are the **fixed** costs, which remain constant irrespective of the **distance travelled**. These costs include the following costs:
    - **License** fees and insurance
    - Salaries of **drivers**, cleaners and conductors
    - Garage costs which include garage **rent** and other relevant **expenses**
    - **Depreciation** of the vehicle and other assets

- Taxes applicable
- Any other fixed charge like **administrative expenses** etc.
- ✓ **Variable Costs or Running Costs:** These costs include:
  - **Petrol** and diesel
  - **Lubricating oil**
  - **Grease**
  - Any other **variable** costs
- ✓ **Maintenance Charges:** These charges include **expenses** like **repairs** and **maintenance**, tyre, and other charges connected with maintenance like **servicing** of the vehicles etc.

### Doubt Busters:

1. For goods transport, we generally follow absolute basis of cost unit whereas for passenger transport, we follow commercial basis.
2. One round trip = To & From = 2 one-way trips
3. In general, we assume the following:
  - For Goods Transport = One side of a round trip is empty.
  - For Passenger Transport = Both sides of a round trip is occupied.
  - Operating cost of any service should NOT include Finance Cost and Abnormal Cost (like fines)

## 4. Hotel Sector

- ✓ Service costing is an **effective** tool in respect of **hotel** industry which run on commercial basis.
- ✓ Hence, it is necessary to compute the cost in **order** to determine the price of various services by the **hotel** and to find out the **profit** or loss at the end of a **particular** period.
- ✓ In this case, the costs **associated** with different services **offered** may be identified and cost per unit may be worked out.
- ✓ The cost unit may be **Guest - day** or **Room - day**. For calculation of **cost** per **guest** day or room day, estimated **occupancy** rates at different point of time are taken into **account**, for example, **peak** season or **lean** season.

## 5. Hospitals

- ✓ **Hospitals** provide various medical services to the **patients**. Hospital costing is applied to determine the cost of these **services**. A hospital may have different **departments** catering to many **services** to the patients - such as:
  - ✓ **Outdoor** - Patient
    - Admitted - Patient
    - **Medical** services like X - Ray, Scanning, etc.
    - General services like **Catering**, Laundry, Power house, etc.
    - **Miscellaneous** services like Transport, Pharmacy, etc.

- ✓ Unit of Cost - Common unit of Costs of various departments are as follows:
  - Outdoor - Patient - Per Out - Patient
  - Admitted - Patient - Per Room Day, Per Bed Day
  - Scanning - Per Case
  - Laundry - Per 100 items laundered Segregation of Cost
- ✓ The costs of hospital can be divided into fixed costs and variable costs.
- ✓ Fixed costs are based on timelines and irrespective of services rendered. For example, Staff Salaries, Depreciation on Building and Equipment, etc.
- ✓ Variable costs vary with the level of services rendered. For example, Laundry Charges, Cost of Food supplied to patients, Power etc.

### Doubt Busters:

1. Cost unit = Bed Days Occupancy or Patient Days Occupied  
= [No. of Beds or Patients x Days Operated per year x Occupancy (%)]
2. Generally, there is no season in hospitals.

## 6. Core Theory Topics

### Service Organizations - Overview

| Aspect        | Description  | Key Terms & Highlights  |
|---------------|--|---|
| 1. Definition | Entities that offer intangible services instead of tangible goods.     | Focus is on customer needs, service quality, and experience.                  |
| 2. Sectors    | Operate in diverse sectors like:                                       | Finance, Healthcare, Education, Hospitality, Consulting, Transportation, etc. |
| 3. Examples   | Banks, Insurance Companies, Hospitals, Schools, Hotels, Airlines, etc. | Client-centric, dependent on service delivery.                                |

### Key Characteristics of Service Organizations

| Characteristic       | Explanation   | Keywords Highlighted                                   |
|----------------------|---|--|
| 1. Intangibility     | Services cannot be touched or seen before consumption.  | Affects marketing and quality assurance.               |
| 2. Inseparability    | Services are produced and consumed simultaneously.      | Provider and consumer are interlinked during delivery. |
| 3. Perishability     | Services cannot be stored for later use.                | Must be consumed when produced.                        |
| 4. Heterogeneity     | Services are variable and may differ in each encounter. | Influenced by provider, customer, and context.         |
| 5. Lack of Ownership | Customers get benefits or outcomes, not ownership.      | Distinguishes services from physical products.         |

## CHAPTER 14: MARGINAL COSTING

### 1. Introduction

- ✓ **Marginal Costing** is not a method of costing like **job**, **batch** or **contract** costing. It is a **technique** of costing in which only **variable** manufacturing costs are considered while determining the cost of goods sold and also for **valuation** of **inventories**.
- ✓ This **technique** is based on the fundamental **principle** that the total **costs** can be divided into **fixed** and **variable**. While the total **fixed** costs remain **constant** at all levels of **production**, the **variable** costs go on **changing** with the **production** level.
- ✓ Marginal costing alias variable costing, which is the subject of this study note, is used when **short-term decisions** on matters such as product/service profitability is under consideration, but if long-term decisions need to be made, **long-run** average **costs** are required which an **absorption** costing system provides.

### 2. Marginal Cost Vs Marginal Costing

- ✓ **Marginal Cost**: Fully **absorbed** product costs include **fixed** overheads, whereas the **marginal** cost of a product usually consists of **variable** costs only. It is defined as the change in **aggregate** costs due to change in the **volume** of **production** by one unit.
- ✓ **CIMA** Official Terminology defines **marginal** cost as part of the cost of one **unit** of product or service that would be avoided if the unit were not produced, or that would **increase** if one **extra** unit were **produced**.
- ✓ The **marginal** production **cost** per **unit** of an item usually consists of the following:
  - Direct **materials**
  - Direct **labour**
  - Variable production **overheads**
- ✓ **Marginal Costing**: Marginal costing is an **alternative** method of costing where, only **variable** costs are charged as a cost of **sale** and a **contribution** is calculated. Closing **inventories** of work in progress or finished goods are valued at **marginal** (variable) production cost. Fixed costs are treated as a **period** cost, and are charged in full against profit in the accounting period in which they are incurred. It is defined as ascertainment of **cost** and measuring the impact on **profit** of the change in the **volume** of **output** or type of output. This is subject to one assumption and that is the fixed cost will remain **unchanged** irrespective of the change. Thus **marginal** costing involves firstly the ascertainment of the marginal cost and **measuring** the impact on **profit** of alterations made in the **production** volume and type.

For the **determination** of cost of a product or service under **marginal** costing, costs are classified into **variable** and **fixed**. All the **variable** costs are part of product and services while fixed costs are charged against **contribution** margin.

- ✓ **Contribution:** The term '**contribution**' is really short for 'contribution towards covering **fixed** overheads and making a **profit**'. The term is derived from the **concept** that the sales revenue generated through **sales** after covering up for **variable** cost of sales (without which the sales revenue cannot be generated) contributes towards **fixed** cost and after **recouping** the fixed cost the residue contributes towards **profit**.

### Example 1

Let us assume that a fountain pen named Shikhar is sold by Lotus Ltd. for ₹ 14,500. The direct material cost (cost of blank, nib, clip and trims) per unit is ₹ 3,200, the direct labour cost per unit is ₹ 4,100 and the variable production overheads cost per unit is ₹ 1,320. Fixed overheads per month are ₹ 1,00,000 and the budgeted production level is 100 units in a particular month.

The contribution is calculated as below:

| Particulars                       | (₹)    | (₹)   |
|-----------------------------------|--------|-------|
| Sale Price (per unit)             | 14,500 |       |
| Less: Variable cost of production |        |       |
| Direct material                   | 3,200  |       |
| Direct Labour                     | 4,100  |       |
| Variable production overheads     | 2,320  | 9,620 |
| Contribution per unit             |        | 4,880 |

In the above example, there is a contribution of ₹ 4,880 for each unit of sale of Shikhar. This implies that sale of one unit of the fountain pen contributes ₹ 4,880 initially towards fixed overheads of ₹ 1,00,000 which is spent for the month and after such fixed overheads is recovered, towards profit. In the given situation the budgeted production level is 100 units in a particular month. Thus, ₹ 4,88,000 is the total contribution for the month which contributes towards the recovery of fixed cost for the month (₹ 1,00,000). Thus, profit (contribution - fixed cost) is ₹ 3,88,000.

### 3. Marginal Costing Income Statement

- ✓ For the **determination** of **cost** of a product or service under marginal costing, costs are classified into **variable** and **fixed**. All the **variable** costs are part of **product** and services while **fixed** costs are charged against **contribution** margin.
- ✓ **Marginal Cost Statement**

| Particulars         | Amount (₹) |
|---------------------|------------|
| Sales               | XXX        |
| Less: Variable Cost | (XXX)      |
| Contribution        | XXX        |

|                  |       |
|------------------|-------|
| Less: Fixed Cost | (XXX) |
| Profit           | XXX   |

Selling Price Per Unit = Variable Cost Per Unit + Contribution Per Unit

## 4. Cost Volume Profit (CVP) Analysis

### Contribution

- ✓ It has been already discussed that the **fundamental** aspect of **CVP** analysis alias marginal costing is that the **excess** of **sales** value and the **variable** cost of sales contributes to the **fixed** cost (period cost) and after **recouping** fixed cost the residue contributes towards profit. Thus, the issue of contribution is **fundamental** to CVP analysis.

$$\text{Contribution Per Unit} = \text{SP Per Unit} - \text{VC Per Unit}$$

$$\begin{aligned} \text{Total Contribution} &= \text{Sales} \times \text{PV Ratio} \\ &= \text{Contribution Per Unit} \times \text{Units Sold} \\ &= \text{Total Sales} - \text{Total Variable Cost} \\ &= \text{Fixed Cost} + \text{Total Profit} \end{aligned}$$

### Break Even Point (BEP)

- ✓ **Contribution** is so called because it contributes initially towards **fixed costs** (which is for a particular period and remains **fixed** within a relevant **range** and then towards **profit**).
- ✓ As **sales** revenues grow from **zero**, the contribution also grows until it just covers the **fixed** costs. This is the **breakeven** point where neither **profits** nor **losses** are made. Thus, it is obvious that to **break** even, the amount of **contribution** must be **exactly** equal to the **fixed** costs.

$$\text{Break Even Sales (units)} = \frac{\text{Fixed Cost}}{\text{Contribution Per Unit}}$$

### Example 2

Suppose that ASA Ltd. manufactures a particular fountain pen called ASA Durga, incurring variable costs of ₹ 30 per unit and fixed costs of ₹ 20,000 per month. If the product sells for ₹ 50 per unit, then the breakeven point can be calculated as follows:

$$\text{Breakeven point in units} = \frac{\text{₹ } 20,000}{\text{₹ } (50 - 30)} = 1000 \text{ units per month}$$

This implies that if ASA Ltd. manufactures 1000 units of the fountain pen called ASA Durga, then the income statement of the manufacturer for the particular month would be as follows:

| Particulars                         | (₹) (per unit) | (₹) (1000 units) |
|-------------------------------------|----------------|------------------|
| Sale Price per unit                 | 50             |                  |
| Variable cost per unit              | 30             |                  |
| Contribution per unit               | 20             |                  |
| Total contribution (for 1000 units) |                | 20,000           |

|                          |  |        |
|--------------------------|--|--------|
| Fixed cost for the month |  | 20,000 |
| Profit                   |  | Nil    |

Thus, ASA Ltd. breaks even (no profit/no loss) at 1000 units per month.

It is obvious that;

Break-even point (in Amount) = Break-even point (in units) × Selling price per unit

In the above example, the Break-even point (in Amount) of ASA Ltd. is:

$$= \text{Break-even point (in units)} \times \text{Selling price per unit}$$

$$= 1000 \text{ units} \times ₹ 50.00 = ₹ 50,000.00$$

Thus, ASA Ltd. breaks even (no profit/no loss) when its sales revenue per month is ₹ 50,000.

## Margin of Safety (MOS)

- ✓ The **margin** of safety is the **difference** between the expected level of **sales** and the breakeven point. It is a **reflection** of the cushion. The larger the margin of safety, the more likely a **profit** will be made, i.e. if sales start to **fall** there is more leeway before the **organisation** begins to incur **losses**.

$$\text{Break Even Sales} + \text{Margin of Safety} = \text{Sales}$$

### Doubt Busters:

Larger the margin of safety, the higher is the chances of making profits. Hence, MOS is nothing but Profit generating Sales.

## Profit Volume Ratio (PVR)

- ✓ This **ratio** shows the proportion of **sales** available to cover **fixed** costs and **profit**. Contribution represents the **sales revenue** after deducting **variable** costs. This ratio is usually expressed in **percentage**.
- ✓ A **higher contribution** to sales ratio implies that the rate of **growth** of contribution is **faster** than that of sales. This is because, once the **breakeven** point is **reached**, **profits** shall grow at a faster rate when compared to a product with a lesser **contribution** to sales ratio.

- $$\text{PV Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

- $$\text{Total Sales (₹)} = \frac{\text{Fixed Cost} + \text{Profit}}{\text{PV Ratio}}$$

Dividing both the sides by Selling Price Per Unit we get,

- $$\text{Sales (units)} = \frac{\text{Fixed Cost} + \text{Profit}}{\text{Contribution Per Unit}}$$

- $$\text{PV Ratio} = \frac{\Delta \text{Contribution}}{\Delta \text{Sales}}$$

## Variable Cost Ratio

- ✓ The **variable** cost ratio is a cost **accounting** tool used to express a company's variable production costs as a **percentage** of its net **sales**. The primary motive of calculating the **ratio** is to consider costs that may be subject to variations with the **changes** in production levels and **compare** them to the amount of **revenues** generated by the sales of that particular **cycle** of **production**.

$$\text{Variable Cost Ratio} = \text{Variable Cost} \div \text{Net Sales}$$

$$\text{Variable Cost Ratio} = 1 - \text{Contribution Margin}$$

$$\text{Variable Cost Ratio} = 1 - \text{PV Ratio}$$

## Sales to Earn Target Profit

- ✓ Besides being able to determine the **break-even point**, CVP analysis determines the **sales** required to attain a particular **income** level or target **profit**. There are **two** ways in which target net income can be expressed:
  1. As a specific rupee **amount**
  2. As a **percentage** of sales
- ✓ As a **specific** rupee amount - As a specific rupee amount, the cost-volume **equation** specifying target profit is given as,

$$\text{Sales} = \text{VC} + \text{FC} + \text{target profit}$$

If  $q$  = volume in units, the above **relationship** can be rewritten as,

$$pq = uq + \text{FC} + \text{target profit}$$

Where,

$p$  = **sale** price per unit

$q$  = quantity **sold**

$u$  = **Variable** cost per unit

The above equation can be written as,

$$q(p - u) = \text{FC} + \text{target profit}$$

Here<sup>7</sup>  $(p - u)$  = contribution per unit

$$\Rightarrow q = \frac{\text{FC} + \text{target profit}}{(p - u)}$$

$$\Rightarrow \text{target profit sales volume} = \frac{\text{FC} + \text{target profit}}{\text{contribution per unit}}$$

Specifying target **profit** as a percentage of **sales**, the cost-volume equation is,

$$pq = uq + \text{FC} + \% (pq)$$

$$\Rightarrow q = \frac{\text{FC}}{(p - u) - \% (p)}$$

$$\Rightarrow q = \frac{\text{FC}}{\text{per unit contribution} - \text{profit as a \% of unit sale price}}$$

## Example 3

Suppose that ASA Ltd. manufactures a student level fountain pen and sales each fountain pen @ ₹ 25 per unit, the variable cost of sales of each fountain pen is ₹ 10 each and the fixed cost for a month is ₹ 15,000.

Assume that ASA Ltd. wishes to attain:

Case 1. A target profit of ₹ 15,000 before tax

Case 2. A target income of 20% of sales

Now,

in Case 1, target profit sales volume (in units) required is,

$$q_{\text{target profit}} = \frac{\text{Fixed cost} + \text{Target profit}}{(p - u)} = \frac{15,000 + 15,000}{(25 - 10)} = 2,000 \text{ units}$$

Check, at 2000 units the income statement is:

| Particulars                         | (₹)    |
|-------------------------------------|--------|
| Sales @ ₹ 25 per unit               | 50,000 |
| Less: Variable cost @ ₹ 10 per unit | 20,000 |
| Contribution                        | 30,000 |
| Less: Fixed Cost                    | 15,000 |
| Target profit                       | 15,000 |

In Case 2, the target income volume required is,

$$\Rightarrow q = \frac{FC}{(p - u) - \% (p)}$$

$$\Rightarrow q = \frac{15000}{(25 - 10) - (20\% \times 25)}$$

$$\Rightarrow q = \frac{15000}{(15 - 5)} = 1500 \text{ units}$$

Check, at 1500 units, the income statement is:

| Particulars                         | (₹)    |
|-------------------------------------|--------|
| Sales @ ₹ 25 per unit               | 37,500 |
| Less: Variable cost @ ₹ 10 per unit | 15,000 |
| Contribution                        | 22,500 |
| Less: Fixed Cost                    | 15,000 |
| Target profit                       | 7,500  |

Profit is targeted at 20% of sales = 20% of ₹ 37,500 = ₹ 7,500 (as calculated in the above income statement).

## Break Even Analysis

- ✓ Break-even **analysis**, a branch of CVP analysis, determines the **break-even sales**, which is the level of sales at which **total costs** equal total **revenue**.
- ✓ It refers to the **identifying** of the **point** where the **revenue** of the company starts exceeding its total cost i.e., the point when the **project** or company under **consideration** will start generating the **profits** by the way of studying the **relationship** between the **revenue** of the company, its **fixed** cost, and the **variable** cost.
- ✓ The break-even point, the **point** of no profit and no loss, provides **managers** with insights into **profit** planning. It can be computed in **three** different ways:
  - The **equation** approach
  - The **contribution** approach
  - The **graphical** approach
- ✓ **Cash Break Even Point**: When break-even point is calculated only with those **fixed** costs which are payable in **cash**, such a break-even point is known as **cash break-even point**. This means that **depreciation** and other **non-cash fixed** costs are **excluded** from the fixed costs in computing cash break-even point.

$$\text{Cash Break Even Point} = \text{Cash Fixed Cost} \div \text{Contribution Per Unit}$$

### Doubt Busters:

At Cash BEP, there will be a loss which is exactly equal to Non - Cash Exp (Depreciation)

## Equation Approach

- ✓ The **Equation** Approach is based on the **cost-volume equation**, which shows the **relationships** among **sales**, **variable** and **fixed** costs, and **profit**:
  - $S = VC + FC + \text{Profit}$  Where,
  - $S = \text{Sales revenue}$   $VC = \text{Total fixed cost}$   $FC = \text{Total fixed cost}$
- ✓ At the break-even sales **volume**,
  - $S = VC + FC + 0$  (by definition)
  - If  $q = \text{volume in units}$ , the above relationship can be rewritten as  $pq = uq + FC$
- ✓ **Where**,
  - $p = \text{sale price per unit}$
  - $q = \text{quantity sold}$
  - $u = \text{Variable cost per unit}$

### Example 4

If it is assumed that ASA Ltd. manufactures a student level fountain pen and sales each fountain pen @ ₹ 25 per unit, the variable cost of sales of each fountain pen is ₹ 10 each and the fixed cost for a month is ₹ 15,000.

We know,

At the break-even sales volume,

$$S = VC + FC + O.$$

And

If  $q$  = volume in units, the above relationship can be rewritten as,

$$pq = uq + FC$$

Where,

$p$  = sale price per unit

$q$  = quantity sold

$u$  = Variable cost per unit

Therefore,

$$25 \times q = 10 \times q + 15000$$

$$\text{or, } 15q = 15000$$

$$\text{or, } q = 1000 \text{ units}$$

Therefore, ASA Ltd. breaks even at a sales volume of 1,000 units.

## Contribution Approach

- ✓ The **Contribution Margin Approach**, another **technique** for computing the break-even point, is based on solving the **cost-volume equation** stated earlier.

Solving the equation,  $pq = uq + FC$  for  $q$  yields:

$$q_{BE} = \frac{FC}{(p - u)} = \frac{FC}{\text{Contribution per unit}}$$

Here  $q_{BE}$  = break-even unit sales volume

If the break-even point is desired in terms of Rupees, then

Break - even point in Rupees = Break-even point in units  $\times$  Unit sales price

$$\text{Break - even point in Rupees} = \frac{\text{Fixed Cost}}{\frac{P}{V} \text{ Ratio}}$$

## Graphical Approach

- ✓ The **Graphical Approach** is based on the so-called **break-even chart** as shown in Figure Sales revenue, variable costs, and fixed costs are **plotted** on the **vertical axis**, while **volume,  $x$** , is plotted on the **horizontal axis**. The break-even point is the **point** where the total sales **revenue line intersects** the total cost line. The chart can also **effectively** report **profit potentials** over a wide range of activity. The **profit-volume (P–V) chart**, as shown in Figure, focuses more directly on how **profits** vary with changes in **volume**. Profits are plotted on the **vertical axis**, while units of **output** are shown on the **horizontal axis**. Note that the slope of the **chart** is the unit **contribution margin**. The main advantage of the **profit-volume chart** is that it is capable of depicting clearly the effect on **profit** and breakeven **point** of any changes in the **variables**.

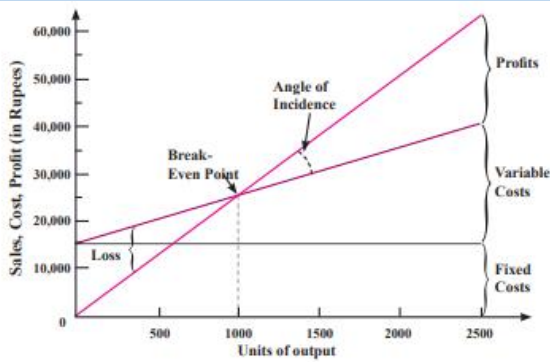


Figure 6.1: Break Even Chart

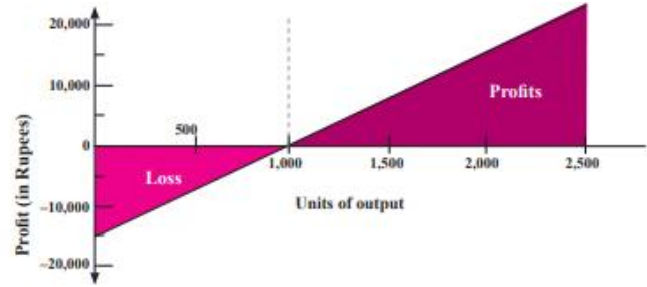


Figure 6.2 Profit-Volume Chart

The change In **profit** can be studied through **Break even charts** in different situations as mentioned below:

### 1. Increase in No. of Units

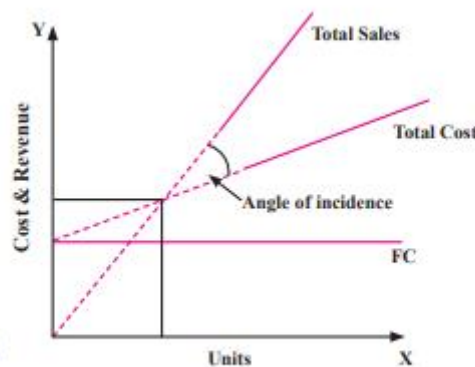


Figure 6.3: Change in BEP due to increase in No. of Units

In the above **chart**, if we clearly **observe** we find that there is **no change** in **BEP** even if there is **increase** or **decrease** in number of **units**.

### 2. Increase in Sales due to increase in selling price

NTS = New **Total Sales** line

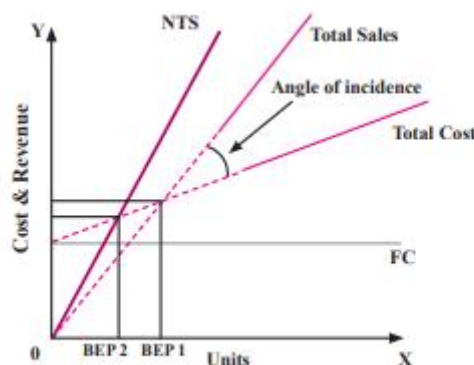


Figure 6.4: Change in BEP due to increase in Selling Price

From the above **chart**, we observe that **profit** is increased by **increasing** the **selling price** and also, if there is **change** in **selling price**, **BEP** also **changes**. If **selling price** is **increased**, then **BEP** **decreases**. If **selling price** is **decreased**, then **BEP** **increases**. Thus, we say that there is an **inverse** relationship between **selling price** and **BEP**

### 3. Decrease in variable cost

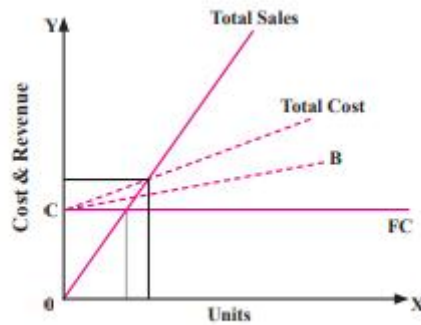


Figure 6.5: Change in BEP due to decrease in Variable cost

The **CB** line indicates decreased **total cost** line which also implies a decrease in **BEP**. From the above chart, it is **observed** that when **variable** costs are **decreased** profit increases. If there is **change** in **variable** cost, then **BEP** also **changes**. If variable cost **decreases**, then **BEP** also **decreases**. If variable cost **increases**, then **BEP** also **increases**. Thus, there is **direct relationship** between variable cost and **BEP**.

### 4. Change in fixed cost

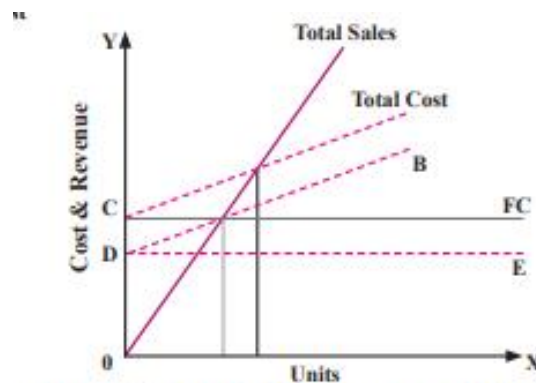


Figure 6.6: Change in BEP due to change in Fixed Cost

The **DE** and **DB** line indicate **decrease** in fixed cost and total cost respectively. From the above chart, it may be **observed** that there is increase in **profit** due to **decrease** in fixed cost. If fixed cost **increases** then **BEP** also **increases**. If fixed cost **decreases**, then **BEP** also **decreases**. Thus, there is a **direct relationship** between fixed cost and **BEP**.

### Non-linear break-even analysis

In **break-even** analysis discussed above, **linear** (straight line) **relationships** are assumed. **Sale price** per unit and **variable** cost per unit are assumed to **remain constant** but in all **practical** scenario it is reasonable to think that **increased** sales can be obtained only if **sales** prices are **reduced**. **Variable** cost per unit also does not remain **constant**, given price **rises** and other external as well as **internal** factors. **Empirical** studies suggest that the **average variable** cost per unit falls over some range of output and then begins to rise. Thus, **non-linear** relationships between cost **curves** and sale price may have to introduced though it complicates matters. In such case there would be two or more break even points. In such a case the **optimum** profit is earned where the difference between the **sales** and the total costs is the **largest**. It is obvious

that the business should produce only upto this level. This is being illustrated in the below mentioned chart.

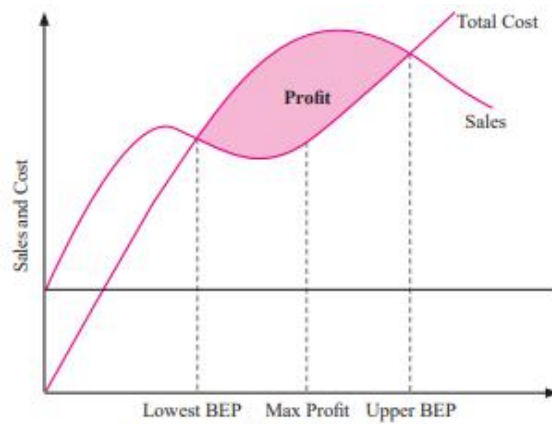


Figure 6.7: Non-Linear Break-Even Chart

## 5. Sensitivity Analysis

✓ **Rate of change** in one variable, with respect to change in **another** variable, Keeping other **variables** constant.

✓ **Example:**

PVR = 30%

What is the sensitivity of:

- i. 15% **increase** in SP on **sales** volume?
- ii. 10% **increase** in VC on **sales** volume?

Assume Total **Contribution** remains **unchanged**.

|   | Present   | Proposed                                  |  |
|---|-----------|---|--|
|   |           | (i) 15% increase in Selling Price         | (ii) 10% increase in Variable Cost on sales volume |
| Selling Price Per Unit                              | 100 (Let) | 115                                       | 100  |
| Less: Variable Cost Per Unit                        | 70        | 70  | 77   |
| Contribution per unit<br>(Selling Price x PV Ratio) | 30        | 45  | 23   |
| Total Contribution (Let)                            | 300       | Same 300                                  | Same 300   |
| Unit sold   | 10        | 6.67 units                                | 13.04 units  |
|   |           | $\frac{10 - 6.67}{10} = 33.33\%$ decrease | 30.4% increase                                     |

## 6. Limiting Factor or Key Factor Analysis

✓ In the **short** term, it may be that one of the inputs to a **business activity** is restricted in its availability. There may be a shortage of raw materials or a limited supply of **skilled labour**. There may be a delivery delay on **machinery** or a planning restriction which prevents the extension of a building on the **business** premises. There may then be a need to choose from a

range of **possible** activities so as to maximise short-term profit. The item which is **restricted** in availability is called the **limiting factor**.

- ✓ **CVP analysis** shows that maximisation of profit will occur if the **activity** is chosen which gives the highest **contribution per unit** of limiting factor.
- ✓ Steps to deal with key Factor
  1. **Identify** the key factor = **Key** factor is the one whose **requirement** > availability.
  2. Best use of available quantity of key factor i.e.,
    - a) **Ranking** of products  
Comparative **profitability** basis = **Contribution per Key Factor**
    - b) **Optimum Mix**  
**Allocation** of available key factor in order of **rank**

## 7. Shut Down Point

- ✓ Applicable under situation of **off season** or **recession**.
- ✓ A company may need to evaluate whether it should - (a) **Shut down** (temporary closure) (b) **continue** the operation
- ✓ **Non-Financial factors** influencing the decision-
  - Loss of **goodwill**
  - Availability of **labour**
  - Supplier **relationships**
  - **Security** reasons
  - Reopening **hassles**
  - **Laws** & Regulations

| Financial factors                 | Shut down | Continue |
|-----------------------------------|-----------|----------|
| Total Fixed Cost                  |           |          |
| - Unavoidable fixed cost          | xx        | xx       |
| - Avoidable fixed cost            | -         | xx       |
| - Extra cost of shut down - Total | xx        | -        |
| Fixed Cost                        | xx        | xx       |

- ✓ **Shut Down Sales** - It is the level of **sales** where the **company** is able to recover the **additional fixed** cost of continuing the **operations**. It is the **indifference** point between **Shut down** & **Continue** option.
- ✓ **Shut Down Sales** = 
$$\frac{\text{Fixed Cost} - \text{Extra Shutdown Cost}}{\text{PV Ratio}}$$
- ✓ Interpretation

| Expected sales    | Recommendations                   |
|-------------------|-----------------------------------|
| < Shut down point | Shut down (Low Fixed Cost Option) |

|  |                                     |
|--|-------------------------------------|
| = Shut down point  | Shut down or Continue               |
| > Shut down point  | Continue (Low Variable Cost Option) |
| <b>Doubt Busters:</b>  |                                     |
| The Shut Down Point Concept is based on Indifference Point Concept and the formula is derived from the Indifference Point formula $\frac{\text{Change in Fixed Cost}}{\text{Change in Contribution Per Unit}}$ |                                     |

## 8. Indifference Point

✓ Indifference = No difference = Equal

✓ Situation:

Two mutually exclusive option (SP must be constant)

| Cost Structure         | Option 1 | Option 2 |
|------------------------|----------|----------|
| FC                     | High     | Low      |
| Variable Cost Per Unit | Low      | High     |

✓ Indifference point = The level of sales where total cost or total profit under two options are equal.

✓ Indifference point =  $\frac{\text{Change in Fixed Cost}}{\text{Change in Variable Cost Per Unit}}$

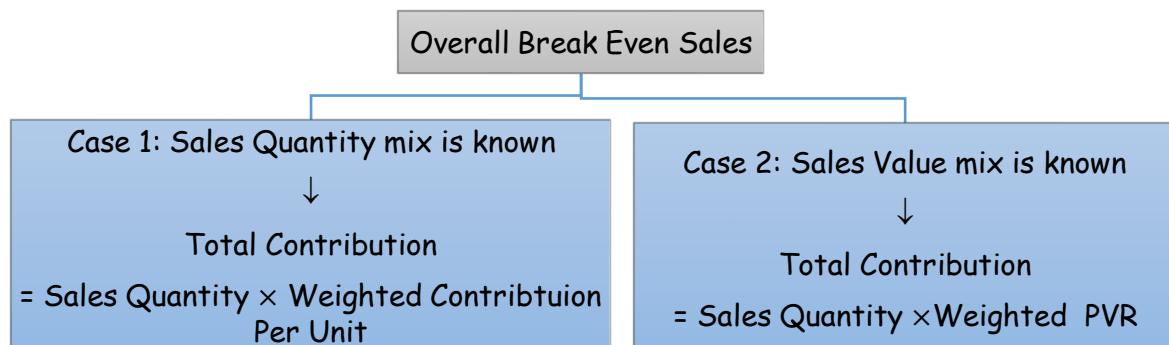
✓ Interpretations

| Expected Volume      | Recommendations          |
|----------------------|--------------------------|
| < Indifference point | Low Fixed Cost option    |
| = Indifference point | Any option               |
| > Indifference point | Low Variable Cost option |

## 9. Sales Mix

### Sales Quantity Mix Is Known

✓ In a multi-product environment, where more than one product is manufactured by using a common fixed cost, the break-even point formula needs some adjustments. The contribution is calculated by taking weights for the products. The weights may be of sales mix quantity or sales mix values.



## Sales Value Mix Is Known

Example:

| Particulars      | A   | B   | Total    |
|------------------|-----|-----|----------|
| Sales Mix        | 70% | 30% | 1,00,000 |
| P/V Ratio        | 50% | 40% |          |
| Total Fixed Cost |     |     | 4,70,000 |

Find BEP.

## Weighted Average PVR

|                           | A        | B        | Total                            |
|---------------------------|----------|----------|----------------------------------|
| Sales                     | ₹ 70,000 | ₹ 30,000 | ₹ 1,00,000 (or Let if not given) |
| P/V Ratio                 | 50%      | 40%      | -                                |
| Contribution              | 35,000   | 12,000   | 47,000                           |
| Weighted Average PV Ratio |          |          | $\frac{47,000}{1,00,000} = 47\%$ |

$$\therefore \text{Overall BES} = \frac{\text{Total Fixed Cost}}{\text{Weighted Average PV Ratio}} = \frac{4,70,000}{47\%} = ₹ 10 \text{ Lakhs}$$

$$\text{Sales Value of A} = ₹ 10,00,000 \times \frac{70}{100} = ₹ 7,00,000$$

$$\text{Sales Value of B} = ₹ 10,00,000 \times \frac{30}{100} = ₹ 3,00,000$$

## 10. Marginal Costing Vs Absorption Costing

### Income Statement (Absorption costing)

| Particulars   | Amount (₹) |
|---|------------|
| Sales   | XXX        |
| Production Costs:   |            |
| Direct material consumed  | XXX        |
| Direct labour cost  | XXX        |
| Variable manufacturing overhead   | XXX        |
| Fixed manufacturing overhead  | XXX        |
| Cost of Production  | XXX        |
| Add: Opening stock of finished goods<br>(Value at cost of previous period's production) | XXX        |

|   |            |
|---|------------|
| Less: Closing stock of finished goods                                     | XXX        |
| (Value at production cost of current period)                              | XXX        |
| <b>Cost of Goods Sold</b>   | <b>XXX</b> |
| Add: (or less) Under (or over) absorption of fixed Manufacturing overhead | XXX        |
| Add: Administration costs   | XXX        |
| Selling and distribution costs  | XXX        |
| <b>Total Cost</b>   | <b>XXX</b> |
| Profit (Sales - Total cost)   | XXX        |

## Income Statement (Marginal costing)

| Particulars  | Amount (₹) |
|--|------------|
| Sales  | XXX        |
| Variable manufacturing costs:  |            |
| - Direct material consumed   | XXX        |
| - Direct labour  | XXX        |
| - Variable manufacturing overhead                                      | XXX        |
| <b>Cost of Goods Produced</b>  | <b>XXX</b> |
| Add: Opening stock of finished goods                                   | XXX        |
| (Value at cost of previous period)                                     | XXX        |
| Less: Closing stock of finished goods (Value at current variable cost) | XXX        |
| <b>Cost of Goods Sold</b>  |            |
| Add: Variable administration, selling and dist. overhead               | XXX        |
| Add: Variable Selling and distribution costs                           | XXX        |
| <b>Total Variable Cost</b>   | <b>XXX</b> |
| <b>Contribution (Sales - Total variable costs)</b>                     | <b>XXX</b> |
| Less: Fixed costs (Production, admin., selling and dist.)              | XXX        |
| <b>Net Profit</b>  | <b>XXX</b> |

## 11. Core Theory Topics

| Features of Marginal costing |   |
|------------------------------|---|
| 1.                           | <b>Simple Costing Method</b><br>Marginal costing is <b>easy to understand</b> as it <b>does not allocate fixed overheads</b> to products.                               |
| 2.                           | <b>Avoidance of Arbitrary Allocation</b><br>Avoids <b>random distribution of fixed costs</b> , unlike absorption costing, ensuring more <b>accurate cost analysis</b> . |
| 3.                           | <b>Variable Costs Only</b>  |

|    |   |
|----|---|
|    | Considers <b>only variable costs</b> like <b>direct materials</b> , <b>direct labour</b> , and <b>variable overheads</b> . <b>Fixed costs</b> are treated as <b>period costs</b> .                                |
| 4. | <b>Contribution Margin Focus</b><br>Emphasizes <b>Contribution Margin</b> (Sales - Variable Costs), which helps in <b>profitability analysis</b> , <b>pricing</b> , and <b>product mix decisions</b> .            |
| 5. | <b>Effective for Decision-Making</b><br>Used for <b>short-term decisions</b> such as <b>special orders</b> , <b>pricing</b> , and <b>product selection</b> by focusing on <b>incremental costs and benefits</b> . |
| 6. | <b>Reporting Format</b><br>Separates <b>fixed</b> and <b>variable costs</b> in income statements to show <b>cost behavior</b> and impact on <b>profit</b> .   |
| 7. | <b>Internal Reporting Tool</b><br>Mainly used for <b>internal analysis</b> , helping managers assess <b>departmental performance</b> and <b>profit contribution</b> .   |

## Absorption Costing vs Marginal costing

### Comparison of Marginal Costing vs Absorption Costing

| Aspect                   | Marginal Costing  | Absorption Costing   |
|--------------------------|---|--|
| 1. Cost Consideration    | Considers <b>only variable costs</b> for product cost and inventory valuation.                    | Includes <b>both variable and fixed overheads</b> in product cost. |
| 2. Fixed Costs Treatment | Treated as <b>period costs</b> and <b>charged directly to Costing Profit &amp; Loss Account</b> . | <b>Allocated and absorbed</b> into units of production.            |

| Aspect                      | Marginal Costing   | Absorption Costing   |
|-----------------------------|--|--|
| 1. Cost Classification      | Only <b>variable manufacturing costs</b> are considered.   | Both <b>variable and fixed</b> manufacturing costs are included.                               |
| 2. Treatment of Fixed Costs | <b>Fixed</b> manufacturing costs are treated as <b>period costs</b> and are not allocated to products. | <b>Fixed</b> manufacturing costs are allocated to products as part of inventory valuation.     |
| 3. Income Statement         | <b>Separates</b> costs into fixed and variable categories.   | Absorbs all <b>manufacturing costs</b> into the cost of goods sold, including fixed overheads. |
| 4. Reporting Format         | Emphasizes <b>contribution margin</b> .  | Includes full <b>absorption</b> of all production costs.                                       |

|                           |  |  |
|---------------------------|--|--|
| 5. Decision Making        | Useful for <b>short-term</b> decision making and analyzing <b>contribution</b> margin. | Provides a <b>comprehensive</b> view of product costs but may lead to suboptimal <b>decisions</b> in some cases. |
| 6. Performance Evaluation | <b>Focuses</b> on contribution to covering <b>fixed</b> costs and generating profit.   | May provide distorted <b>performance measures</b> due to allocation of fixed overheads <b>costs</b> .            |

## Impact on Profit under Different Scenarios

| Scenario                         | Result (Marginal vs Absorption)                                  | Reason   |
|----------------------------------|--|--|
| 1. No Opening or Closing Stock   | <b>Profits are equal</b> under both methods.                     | No inventory impact.   |
| 2. Opening Stock = Closing Stock | <b>Profits are equal</b> if <b>fixed cost in stock is same</b> . | No net effect of fixed costs in inventory.   |
| 3. Closing Stock > Opening Stock | <b>Absorption costing shows higher profit</b> .                  | <b>Fixed overheads in closing stock</b> are carried forward, reducing cost.          |
| 4. Opening Stock > Closing Stock | <b>Marginal costing shows higher profit</b> .                    | <b>Fixed costs from previous period</b> in opening stock increase current year cost. |

## Fundamental Principle of Marginal Costing

|    |   |
|----|---|
| 1. | <b>Fixed Costs</b><br>Remain <b>unchanged</b> within the <b>relevant range</b> ; treated as <b>period cost</b> .    |
| 2. | <b>Impact of Extra Unit Sale</b><br>Profit increases by <b>Contribution = Selling Price - Variable Cost</b> .       |
| 3. | <b>Impact of Unit Loss</b><br>Profit decreases by <b>Contribution</b> of that unit.                                 |
| 4. | <b>Emphasis on Contribution</b><br>Focuses on <b>contribution margin</b> , useful for <b>decision-making</b> .      |
| 5. | <b>Avoidance of Arbitrary Allocation</b><br><b>Fixed costs not allocated</b> to products—avoids <b>distortion</b> . |

## Differential Cost Analysis

|    |   |
|----|---|
| 1. | <b>Definition</b><br><b>Differential Cost</b> (also called <b>Incremental Cost</b> ) is the <b>difference in total cost</b> between two alternative decisions or activity levels. |
| 2. | <b>Purpose / Use</b><br>Useful for decision-making like:  |

|    |   |
|----|---|
|    | <ul style="list-style-type: none"> <li>○ Change in activity level</li> <li>○ Make or buy</li> <li>○ Product mix changes</li> <li>✓ Accept/reject export offers, etc.</li> </ul>   |
| 3. | <p><b>How it's Calculated</b></p> <p>It is the <b>difference</b> between the cost of <b>one alternative</b> and the <b>other</b>.</p> <p>Example: Existing machine cost = ₹1,25,000;<br/>New machine cost = ₹1,05,000 → <b>Savings</b> = ₹20,000.</p> |
| 4. | <p><b>Accept/Reject Decision Rule</b></p> <p>If <b>Differential Cost is Negative</b> (i.e., proposed cost &lt; existing cost) → <b>Accept the proposal</b>.<br/>If Positive → <b>Reject</b>.</p>  |

## Essential Features of Differential Costs

|    |  |
|----|--|
| 1. | <p><b>Outside Accounting Records</b></p> <p>Analysis is done <b>outside accounting books</b>, but can be shown in <b>flexible budgets</b>.</p>                               |
| 2. | <p><b>Database Used</b></p> <p>Considers <b>total costs</b> (fixed + variable), <b>total revenues</b>, and <b>relevant investment factors</b>.</p>                           |
| 3. | <p><b>Focus on Total Costs</b></p> <p><b>Cost per unit is not relevant</b>. Only <b>total differential cost</b> matters.</p>   |
| 4. | <p><b>Cost-Benefit Analysis</b></p> <p><b>Compare total differential revenue with total differential cost</b>. Recommend change only if <b>revenue &gt; cost</b>.</p>        |
| 5. | <p><b>Only Differences Matter</b></p> <p>Ignore identical costs in both alternatives. Focus only on <b>differences in costs</b>.</p>   |
| 6. | <p><b>Common Base Point</b></p> <p>Compare costs from a <b>common reference point</b>, like current activity or output level.</p>  |
| 7. | <p><b>Future-Oriented</b></p> <p>Based on <b>future expected costs</b>, not just historical or standard costs.</p>   |
| 8. | <p><b>Optimal Choice Rule</b></p> <p>Choose the alternative that provides <b>maximum benefit</b> (i.e., <b>highest difference</b> between incremental revenue and cost).</p> |

## Differential Cost Analysis vs Marginal Costing - Simplified Comparison

| Aspect     | Differential Cost Analysis                                   | Marginal Costing   |
|------------|--|--|
| Definition | Difference in <b>total cost</b> between two alternatives.    | Focuses on <b>variable costs</b> ; <b>fixed costs</b> are treated as <b>period costs</b> . |
| Cost Basis | Based on <b>absorption costing</b> or <b>total costing</b> . | Based on <b>marginal (variable) costing</b> only.  |

|                              |   |  |
|------------------------------|---|--|
| <b>Fixed Costs Treatment</b> | Fixed costs are <b>included</b> in the analysis.  | Fixed costs are <b>excluded</b> from decision-making.  |
| <b>Similarity</b>            | When only variable costs change and <b>fixed costs remain constant</b> , marginal cost = differential cost. | Marginal cost is treated as <b>equal to differential cost</b> if <b>fixed cost difference is zero</b> .      |
| <b>Decision Use</b>          | Suitable for analyzing <b>alternative actions</b> , e.g., replace, make-buy, export offers.                 | Useful for <b>short-term internal decision-making</b> , e.g., pricing, product mix, special order decisions. |

## Limitations of Marginal Costing - Simplified Table

|    |   |
|----|---|
| 1. | <b>Assumption of Linear Behavior</b><br>Assumes <b>cost and revenue</b> behave in a straight line with activity levels, which may not always hold true.                               |
| 2. | <b>Difficulty in Cost Segregation</b><br>Costs often show <b>mixed behavior</b> , making it hard to divide into <b>fixed and variable</b> precisely.                                  |
| 3. | <b>Fixed Costs May Not Remain Constant</b><br>Assumes <b>fixed costs stay constant</b> , but they may <b>increase in steps</b> beyond a certain output level.                         |
| 4. | <b>Assumes Input = Output</b><br>Assumes <b>no inventory build-up</b> ; all production is sold, which may not reflect reality.  |
| 5. | <b>One Product Limitation</b><br>Simple marginal costing tools like <b>break-even analysis</b> handle <b>only one product at a time</b> .   |
| 6. | <b>Volume-Only Dependency Assumption</b><br>Assumes <b>cost behavior depends only on volume</b> , ignoring other factors like efficiency, resource constraints, or market conditions. |

## Applications of Marginal Costing

| Application Area   | Description   | Key Points / Highlights   |
|--------------------|---|---|
| 1. Cost Control    | Helps management <b>control costs</b> without increasing selling price. Segregates <b>fixed and variable costs</b> , allowing focus on <b>controllable variable costs</b> . | <ul style="list-style-type: none"> <li>✓ <b>Variable costs</b> can be controlled more easily.</li> <li>✓ <b>Fixed costs</b> usually uncontrollable at lower levels.</li> </ul>                      |
| 2. Profit Planning | Aids in <b>planning future profits</b> by analyzing the effect of changes in product mix, selling price, discontinuance of product, or introduction of a new product.       | <ul style="list-style-type: none"> <li>✓ Useful for <b>change analysis</b> (price, mix, products).</li> <li>✓ Cost split into <b>fixed and variable</b> supports <b>decision-making</b>.</li> </ul> |

|                        |  |   |
|------------------------|--|---|
| 3. Key Factor Analysis | Helps prioritize production when there is a <b>limiting factor</b> (e.g. raw material, labor, machine hours). Ensures <b>optimal use of scarce resources</b> for maximum profit.                   | <ul style="list-style-type: none"> <li>✓ Identifies <b>key/limiting factor</b>.</li> <li>✓ Maximizes <b>contribution per unit</b> of scarce resource.</li> <li>✓ Guides <b>optimal product mix</b>.</li> </ul>  |
| 4. Decision Making     | Provides <b>relevant cost data</b> for various strategic decisions. Differentiates between <b>fixed</b> and <b>variable costs</b> , enabling accurate <b>comparative analysis</b> of alternatives. | <p>Some common decisions include:</p> <ul style="list-style-type: none"> <li>✓ <b>Special pricing</b></li> <li>✓ <b>Recession pricing</b></li> <li>✓ <b>Make or Buy</b></li> <li>✓ <b>Export vs Domestic Sales</b></li> <li>✓ <b>Shutdown or Continue</b></li> <li>✓ <b>Product mix &amp; substitution</b></li> </ul> |

## Application of Marginal Costing for Decision Making

| Decision-Making Area                 | Simplified Explanation   | Key Points / Highlights  |
|--------------------------------------|--|--|
| 1. CVP Analysis (Cost-Volume-Profit) | Part of <b>marginal costing</b> , CVP analysis explains how <b>sales, costs, and profit</b> are related in the <b>short term</b> . It assumes that some costs are <b>fixed</b> within current <b>capacity</b> and is useful for <b>profit planning</b> . | <ul style="list-style-type: none"> <li>✓ Focus on <b>short-term decisions</b></li> <li>✓ Used when <b>capacity is limited</b></li> <li>✓ Helps in <b>cost control and profit analysis</b></li> </ul>                                     |
| 2. Special Order with Spare Capacity | If capacity is <b>not fully used</b> , a <b>special low-price order</b> can be accepted if it <b>covers variable cost</b> and gives <b>contribution</b> . Don't accept if capacity can be used better elsewhere.   | <ul style="list-style-type: none"> <li>✓ Accept if:                             <ul style="list-style-type: none"> <li>- <b>Price <math>\geq</math> Variable Cost</b></li> <li>- No <b>better use of capacity</b></li> </ul> </li> </ul> |
| 3. Abandoning a Line of Business     | A product line should <b>not be closed</b> if it gives <b>positive contribution</b> to fixed costs. Even if it's not covering total costs, it helps reduce overall losses. Fixed costs continue even after discontinuation.                              | <ul style="list-style-type: none"> <li>✓ Continue if <b>contribution <math>&gt;</math> 0</b></li> <li>✓ Ignore <b>arbitrary fixed cost allocation</b></li> </ul>   |
| 4. Limiting Factor                   | When a <b>resource is limited</b> (e.g., material, labour, space), choose the product or activity that gives the <b>highest contribution per unit</b> of that limited factor.  | <ul style="list-style-type: none"> <li>✓ Identify the <b>scarce resource</b>.</li> <li>✓ Maximise <b>contribution per unit</b> of that resource</li> </ul>   |

|  |  |   |
|--|--|---|
| <p>5. In-House vs Outsourced (Buy-in) Decision</p> | <p>Compare <b>variable cost</b> of in-house production / service vs outsourced cost. If <b>fixed costs</b> differ, adjust decision based on total impact.</p>  | <ul style="list-style-type: none"> <li>✓ Focus on <b>variable cost comparison</b></li> <li>✓ Adjust for <b>fixed cost difference</b> if relevant</li> </ul> |
| <p>6. Long-term vs Short-term View</p>             | <p>In the <b>short term</b>, fixed costs are constant; in the <b>long term</b>, all costs may become <b>variable</b> as business expands. CVP is a <b>short-term tool</b> and helps <b>maximize profits</b> within <b>existing capacity</b>.</p> | <ul style="list-style-type: none"> <li>✓ CVP is used for <b>short-term</b> planning</li> <li>✓ In <b>long-term</b>, all costs may vary</li> </ul>           |

# CHAPTER 15: STANDARD COSTING AND VARIANCE ANALYSIS

## 1. Introduction

- ✓ **Efficient** management of an **organisation pivots** on the two **fundamental** issues; **planning** and **controlling**. Planning is the fundamental **management** function, which involves **deciding** beforehand what is to be done, **when** is it to be done, **how** it is to be done and **who** is going to do it. **Planning** chalks out **exactly**, how to attain a specific **goal**.
- ✓ **Controlling**, on the other, enables the **management** to **review** the **actual** performance and locate the difference between the **planned** performance and **actual** performance.
- ✓ For **evaluating** performance, it is necessary to compare the **actual** performance with pre-determined **targets**. One of the important **parameters** of performance is the **cost** of production. It is of importance that the costs are **monitored** closely and there is a constant **comparison** of the actual costs with pre-determined **targets**.

## 2. Standard Cost and Standard Costing

- ✓ **Standard costs:** **Standard** costs are used as scale of **reference** to compare the **actual** cost with the **standard** cost with a view to determine the **variances**, if any, and **analyse** the causes of **variances** and take proper **measure** to control them.
- ✓ The **standard** cost serves as a basis of **cost** control and as a measure of **productive** efficiency when ultimately posed with an **actual** cost. Standard costs are used to **compare** the **actual** costs with the **standard** cost with a view to determine the variances, if any, and **analyze** the causes of **variances** and take proper measure to **control** them.
- ✓ **Standard costing:** Standard costing is a management accounting **technique** that is used to determine the **expected** costs of **producing** goods or services. It involves setting predetermined costs for various **elements** of **production**, such as **materials**, **labour**, and overheads, based on **historical** data, industry **benchmarks**, or engineering estimates. These predetermined costs, known as **standard** costs, serve as **benchmarks** against which actual costs are compared, allowing managers to identify **variances** and take corrective actions to control costs and **improve efficiency**.

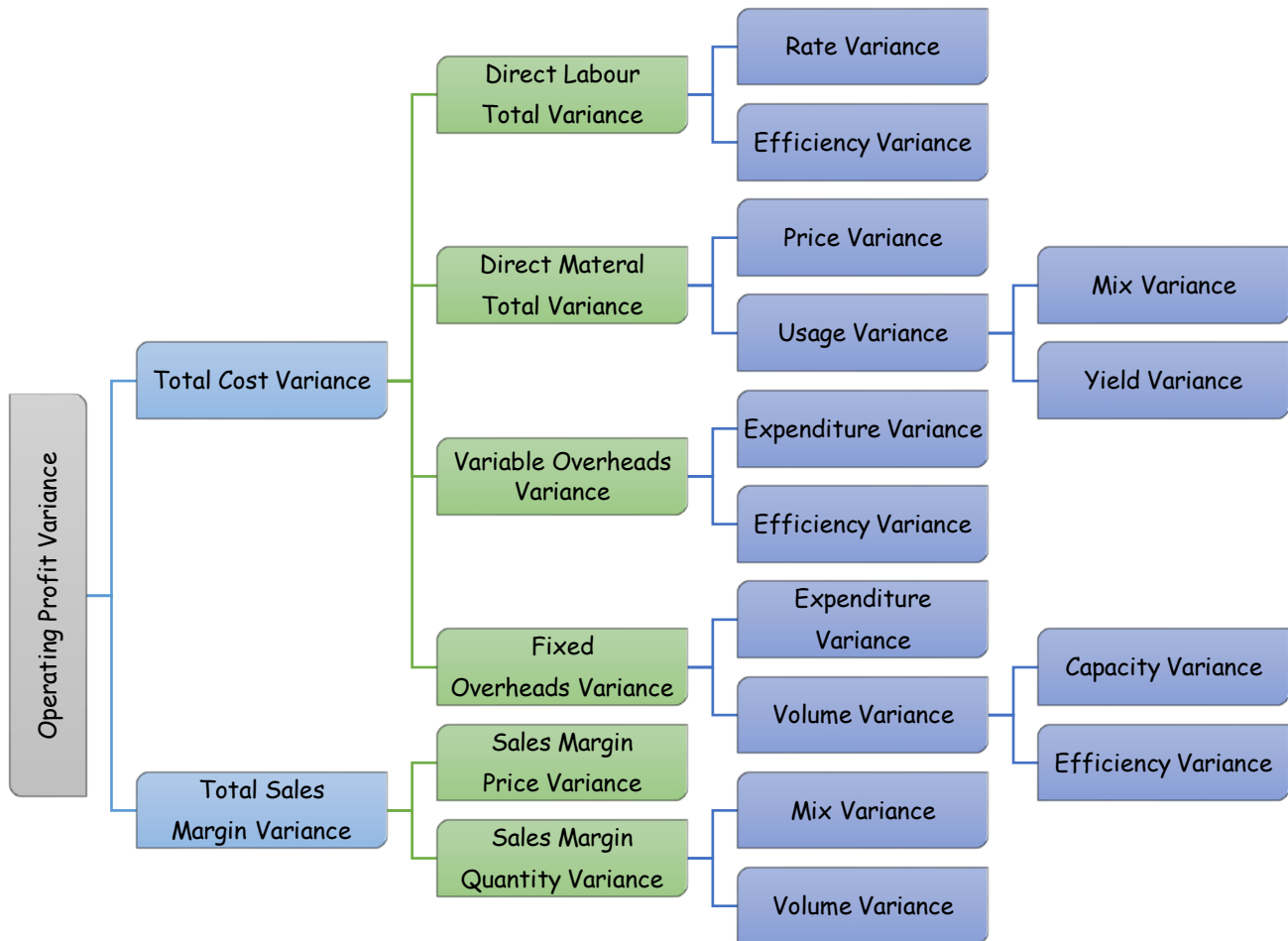
## 3. Types of variances

### A. Favourable and Adverse Variances

- ✓ **Favourable** variances are those which are **profitable** for the company and **adverse** variances are those which causes **loss** to the company. While computing cost variances favourable variance means **actual** cost is **less** than **standard** cost.

✓ On the other hand, **adverse** variance means **actual** cost is **exceeding** **standard** cost. The situation will be **reversed** for sales variance. **Favourable** variances mean **actual** is **more** than **budgeted** and **adverse** when actual is **less** than **budgeted**. Favourable variance in short denoted by capital 'F' and adverse variances by capital 'A'.

## 4. Classification of Variances



## 5 .Computation of Material Variances

### Material Cost Variance

✓ **Material cost** variance is the **difference** between **standard** cost of materials used and the **actual** cost of materials.

Material cost variance = (standard material cost of output produced - actual cost of material purchased)

Or

Material Cost Variance = [Standard Cost - Actual Cost]

Or

[(Standard Quantity × Standard Price) - (Actual Quantity × Actual Price)]

Reasons for variance: **Material cost** variance arises mainly because of either difference in **material price** from the standard price or difference in **material consumption** from standard consumption or **both** the reasons.

## Material Price Variance

- ✓ It measures **variance** arises in the material cost due to **difference** in **actual** material purchase price from **standard** material price.

[Actual quantity of material purchased × standard price) - Actual cost of material purchased]

Or

Actual Quantity (AQ) × {Standard Price (SP) - Actual Price (AP)}

Or

(SP - AP) × AQ

- ✓ **Reasons for variance:** **Material price** variance can also be calculated taking material used as **actual** quantity instead of material **purchased**. This method is also correct but does not serve the purpose of **variance** computation. Material price variance may arise from **variety** of **reasons** out of which some may be **controllable** and some may be beyond the control of the purchase department. If price variance arises due to **inefficiency** of purchase department or any other reason **within** the **control** of the company, then it is very important to report variance as early as possible and this can be done by taking **purchase quantity** as actual quantity for **price** variance computation.

### Doubt Busters:

Here actual quantity means actual quantity of material purchased. If in the question material purchase is not given, it is taken as equal to material consumed.

## Material Usage Variance

- ✓ It measures **variance** in material cost due to **usage/ consumption** of materials.

(Actual production × Standard Material per unit - Actual Material usage) × standard cost per kg, litre, other)

Or

Standard Price (SP) × {Standard Quantity (SQ) - Actual Quantity (AQ)}

Or

(SQ - AQ) × SP

\*Here actual quantity means actual quantity of material used.

- ✓ **Responsibility for material usage variance:** Material **usage** is the responsibility of production department and it is held **responsible** for **adverse** usage variance.
- ✓ **Reasons for variance:** Actual material **consumption** may differ from the **standard** quantity either due to **difference** in proportion used from standard proportion or due to difference in **actual** yield from **standard** yield.

## Material Mix Variance

- ✓ Variance in **material consumption** may arise due to difference in **proportion** actually used from the standard **mix/ proportion**.

(Quantity of material based on total material quantity split in standard proportions - Actual quantity of material) × standard cost per kg, litre, other}},

Or

[Standard Cost of Standard Mix - Standard Cost of Actual Mix]

Or

- ✓ When more than one type of Raw Material is used for producing a product

Standard Price (SP) × {Revised Standard Quantity (RSQ) - Standard Quantity (SQ)}

Or

SP × (RSQ - SQ)

## Material Yield Variance (Material Sub-usage Variance)

- ✓ Variance in **material consumption** which arises due to **yield** or productivity of the inputs. It may arise due to use of **sub- standard** quality of materials, **inefficiency** of workers or due to wrong processing.

(Standard Material Quantity Required For Actual Output - Actual Material Quantities Used In Standard Proportions) × Standard Cost Per Kg, Litre, Other

Or

Material Yield Variance = SYR [Actual Yield - Standard Yield]

Standard Cost (SC Per Unit) of Output × {Actual Yield (AY) - Standard Yield (SY)}

Or

SC Per Unit × (Standard Loss - Actual Loss)

## 6. Computation of Labour Variances

### Labour Cost Variance

- ✓ Amount paid to **employees** for their labour is generally known as employee or **labour** cost. In this chapter labour cost is used to denote employee's cost. Labour (employee) cost variance is the difference between **actual** labour cost and **standard** cost.

(Standard Hours Produced × Standard Direct Labour Rate Per Hour) - (Actual Hours Paid × Actual Direct Labour Rate Per Hour)

Or

(SH for actual yield × SR) - (AH × AR)

Or

Labour Cost Variance = [Standard Cost - Actual Cost]

Or

[(SH × SR) - (AH\* × AR)]

\*AH refers to Actual Hours Paid

Reasons for variance: **Difference** in labour cost arises either due to difference in the **actual** labour rate from the standard rate or difference in numbers of hours worked from **standard** hours.

## Labour Rate Variance

- ✓ **Labour rate** variance arises due to **difference** in **actual** rate paid from **standard** rate. It is very similar to material **price** variance.

$(\text{Actual Hours Paid} \times \text{Standard Direct Labour Rate Per Hour}) - (\text{Actual Hours Paid} \times \text{Actual Direct Labour Rate Per Hour})$

Or

$\text{Direct labour rate variance} = (\text{AH} \times \text{SR}) - (\text{AH} \times \text{AR})$

Or

$\text{Actual Hours (AH*)} \times \{\text{Standard Rate (SR)} - \text{Actual Rate (AR)}\}$

Or

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

- ✓ **Responsibility for labour rate variance:** Generally **labour** rates are influenced by the **external** factors which are beyond the control of the organisation. However, **personnel manager** is responsible for labour **rate negotiation**.

## Labour Efficiency Variance

- ✓ **Labour efficiency** variance arises due to deviation in the **working hours** from the **standard working hours**.

$(\text{Actual Production In Standard Hours} - \text{Actual Hours Worked}) \times \text{Standard Direct Labour Rate Per Hour}$

Or

$(\text{Actual hours worked} \times \text{Standard rate}) - \text{Standard labour cost for actual yield}$

Or

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

- ✓ **Responsibility for labour efficiency variance:** **Efficiency** variance may arise due to **ability** of the workers, **inappropriate** team of workers, **inefficiency** of production manager or foreman etc..

## Labour Mix or Gang Variance

- ✓ **Labour efficiency** variance which arises due to change in the **mix** or combination of different skill set i.e. number of **skilled** workers, **semi-skilled** workers and **un-skilled** workers.

Labour mix variance = (actual hours for grade - hours for grade based on total labour hours split in standard proportions) × (weighted average cost per hour - standard cost per hour)

Or

Standard Cost of Standard Mix of Labourers - Standard Cost of Actual Mix of Labourer

Or

Standard Rate (SR) × {Revised Standard Hours (RSH) - Actual Hours Worked (AH)}

Or

$[(RSH \times SR) - (AH \times SR)]$

## Labour Yield Variance

✓ Labour **efficiency** variance which arises due to **productivity** of **workers**.

(standard labour hours allowed for actual output - actual labour hours input) × standard weighted average cost per direct labour hour)

Or

Labour yield variance = (Actual yield or output - Standard yield or output for actual input) × Standard cost per unit

Or

Standard Rate (SR) × {Standard Hours (SH) - Revised Standard Hours (RSH)}

Or

Standard Cost (SC Per Unit) of Output × {Actual Yield (AY) - Standard Yield (SY)}

## Idle Time Variance

✓ It is calculated for the **idle hours**. It is **difference** between **paid** and **worked** hours.

Labour Idle Time Variance = [(Hours Paid - Hours Worked) × Standard Direct Labour Rate Per Hour]

Or

Standard Rate (SR) {Actual Hours Paid - Actual Hours Worked}

Or

Idle Time × SR

## 7. Core Theory Topics

### Standard Costing and Management by Exception (MBE)

| Concept          | Details   |
|------------------|---|
| Standard Costs   | Are <b>average expected unit costs</b> used as <b>benchmarks</b> for comparison. Since they are averages, <b>actual results may vary</b> .      |
| Variences        | The <b>difference between standard costs and actual costs</b> . Only <b>significant variences</b> are reported and investigated.                |
| Tolerance Limits | Set limits to decide which variences are <b>worthy of investigation</b> . This supports the principle of <b>Management by Exception (MBE)</b> . |

|                                  |           |  |
|----------------------------------|-----------|--|
| Management Exception Definition) | by (CIMA) | "The practice of concentrating on activities that require attention and <b>ignoring those which conform</b> to expectations." Standard or budget variances help identify these activities. |
|----------------------------------|-----------|--|

## Standard Costs vs Estimated Costs

| Point                   | Standard Costs   | Estimated Costs  |
|-------------------------|--|--|
| 1. Purpose              | Aim at what <b>costs should be</b> .   | Determine what <b>costs will be</b> .  |
| 2. Usage System         | Used in <b>Standard Costing system</b> .   | Used in <b>Budgetary Control</b> and <b>Historical Costing systems</b> .                           |
| 3. Role in Management   | Helps in <b>variance analysis</b> and <b>cost control</b> .                            | Used for <b>decision-making</b> , <b>profitability analysis</b> , and <b>price fixation</b> .      |
| 4. Basis of Calculation | Based on <b>scientific planning</b> , assumes <b>efficiency</b> and normal conditions. | Based on <b>past actual data</b> , includes <b>anticipated inefficiencies</b> and <b>wastage</b> . |
| 5. Focus                | Focuses on <b>cost control</b> .   | Focus is more on <b>advance pricing</b> and <b>profit estimation</b> , not cost control.           |

## Setting of Standard Costs

|    |  |
|----|--|
|    | <p><b>Process Sensitivity</b><br/>Setting <b>standard costs</b> is a <b>detailed and sensitive</b> process that requires <b>in-depth operational knowledge</b>.</p>  |
| 1. | <p><b>Operational Study</b><br/>Includes analysis of:</p> <ul style="list-style-type: none"> <li>✓ <b>Manufacturing methods and processes</b></li> <li>✓ <b>Organizational structure and responsibilities</b></li> <li>✓ <b>Cost centres, input/output units, expected efficiency</b></li> <li>✓ <b>Wastage, rejections, losses, and capacity utilization</b></li> </ul> |
| 2. | <p><b>Review of Existing System</b><br/>Review current <b>costing systems, records, and forms</b> used in the organization.</p>  |
| 3. | <p><b>Type of Standard</b><br/>Decide on using:</p> <ul style="list-style-type: none"> <li>✓ <b>Current Standards</b></li> <li>✓ <b>Basic Standards</b></li> <li>✓ <b>Normal Standards</b></li> </ul> <p>Choice depends on effectiveness in <b>cost control</b> and whether standards are integrated into <b>accounts</b> or used as <b>statistical data</b>.</p>        |
| 4. | <p><b>Account Classification</b><br/>Accounts must be properly classified so that <b>variances</b> can be tracked accurately.</p>  |
| 5. | <p><b>Responsibility Fixation</b></p>  |

|    |  |
|----|--|
|    | Individuals or departments <b>responsible for variances</b> must also be involved in <b>setting the standards</b> .  |
| 6. | <b>Additional Aspects</b><br>a. <b>Standards = Monetary Component + Resource Requirement</b><br>b. <b>Standard costing</b> is more often aligned with <b>marginal costing</b> than <b>absorption costing</b> . |

| Monetary Components of Standards |  |
|----------------------------------|--|
| 1.                               | <b>Standard Direct Material Prices</b><br>Set by the <b>Purchasing Department</b> considering: <ul style="list-style-type: none"> <li>✓ Existing <b>purchase contracts</b></li> <li>✓ <b>Supplier price discussions</b></li> <li>✓ <b>Market trends</b> in pricing</li> <li>✓ <b>Bulk discount availability</b></li> </ul>   |
| 2.                               | <b>Inflation Impact</b> <ul style="list-style-type: none"> <li>✓ If current price (₹10/kg) is used, <b>adverse variance</b> may occur as price rises.</li> <li>✓ If <b>mid-year estimated price</b> (₹11/kg) is used, <b>favourable</b> variance early on, <b>adverse</b> later.</li> <li>✓ Realistic standards must consider <b>price movements</b> throughout the year.</li> </ul> |
| 3.                               | <b>Standard Direct Labour Rates</b><br>Set through: <ul style="list-style-type: none"> <li>✓ Discussion with <b>Personnel Department</b></li> <li>✓ Reference to <b>payroll records</b></li> <li>✓ Agreements with <b>trade unions</b></li> </ul>  |
| 4.                               | <b>Labour Rate Setting</b> <ol style="list-style-type: none"> <li>a. <b>Separate hourly rate</b> for each labour grade/type</li> <li>b. Use of <b>average hourly rate</b> per grade (individual rates may vary).</li> <li>c. Similar <b>inflation issues</b> apply as with material prices.</li> </ol>   |

## Standard Resource Requirements & Problems in Setting Standards

| Standard Resource Requirements |   |
|--------------------------------|---|
| 1.                             | <b>Estimating Material &amp; Labour Requirements</b> <ul style="list-style-type: none"> <li>✓ <b>Technical specifications</b> are prepared by <b>production experts</b>.</li> <li>✓ These cover both <b>material usage</b> and <b>labour efficiency</b>.</li> </ul>   |
| 2.                             | <b>Standard Product Specification (Materials)</b> <ul style="list-style-type: none"> <li>✓ Specifies <b>quantities of each material</b> per unit of product.</li> <li>✓ Helps production operators understand the basis for <b>material control</b> and <b>wastage monitoring</b>.</li> </ul>   |
| 3.                             | <b>Standard Operation Sheet (Labour)</b> <ul style="list-style-type: none"> <li>✓ Lists <b>labour hours</b> expected from each <b>labour grade</b> and <b>department</b>.</li> <li>✓ Prepared through <b>work study</b> and communicated clearly to labour force.</li> <li>✓ May include <b>standard procedures</b> or <b>operating methods</b>.</li> </ul> |

| Problems in Setting Standards |  |
|-------------------------------|--|
| 1.                            | <b>Inflation Impact</b><br>✓ Inflation must be considered when setting <b>planned unit costs</b> .<br>✓ A method to <b>adjust for rising prices</b> must be built in.                                  |
| 2.                            | <b>Unrealistic Standards</b><br>✓ <b>Performance standards</b> must be <b>attainable</b> and agreed upon by all involved.<br>✓ Avoid overly <b>idealistic targets</b> .                                |
| 3.                            | <b>Material Quality Decision</b><br>✓ <b>Better quality materials</b> may reduce wastage but <b>increase cost</b> .<br>✓ This must be decided before setting standards.                                |
| 4.                            | <b>Price Estimation Challenges</b><br>✓ <b>Seasonal price variations</b> or <b>bulk discounts</b> may complicate <b>material price estimation</b> .  |
| 5.                            | <b>Time Constraints</b><br>✓ Setting <b>accurate standards</b> is <b>time-consuming</b> and may clash with deadlines.  |
| 6.                            | <b>System Setup Cost</b><br>✓ There are <b>costs involved</b> in establishing and maintaining a <b>standard costing system</b> .   |
| 7.                            | <b>Behavioural Resistance</b><br>✓ Managers may <b>resist standard costing</b> due to fear of <b>blame for adverse variances</b> .<br>✓ Leads to potential <b>motivational and acceptance issues</b> . |

| Advantages of Standard Costing |  |
|--------------------------------|--|
| 1.                             | <b>Supports Budgeting</b><br><b>Carefully planned standards</b> assist in effective <b>budget preparation</b> .                    |
| 2.                             | <b>Performance Benchmarking</b><br>Provides a <b>yardstick</b> for measuring <b>actual costs</b> against <b>standard costs</b> .   |
| 3.                             | <b>Cost Efficiency</b><br>Involves determining the <b>best materials and methods</b> , leading to potential <b>cost savings</b> .  |
| 4.                             | <b>Efficiency Motivation</b><br>Sets a <b>target of efficiency</b> for employees, encouraging <b>cost-consciousness</b> .          |
| 5.                             | <b>Variance Analysis</b><br>Enables <b>calculation of variances</b> , supporting <b>management by exception</b> .                  |
| 6.                             | <b>Focused Control Action</b><br>Only <b>significant variances</b> exceeding <b>tolerance limits</b> need management attention.    |
| 7.                             | <b>Simplified Bookkeeping</b><br>Easier to use than <b>FIFO, LIFO</b> , or <b>weighted average</b> costing methods.                |
| 8.                             | <b>Better Scheduling</b><br><b>Standard times</b> simplify <b>production planning and scheduling</b> .                             |
| 9.                             | <b>Employee Motivation</b><br><b>Performance standards</b> act as <b>goals</b> , encouraging employees to <b>achieve targets</b> . |

| Types of Standards |   |
|--------------------|---|
| 1.                 | <p><b>Definition of Standard</b><br/>A <b>standard</b> is a <b>norm</b> or <b>benchmark</b> used to <b>measure actual performance</b> and <b>assign responsibility</b> for <b>variances</b>.</p>  |
| 2.                 | <p><b>Purpose</b><br/>Helps in evaluating <b>efficiency</b>, monitoring <b>costs</b>, and <b>motivating employees</b> through <b>target setting</b>.</p>  |
| 3.                 | <p><b>Challenge in Setting Standards</b><br/>Companies must decide whether to <b>include unforeseen elements</b> like <b>spoilage</b>, <b>lost time</b>, and <b>breakdowns</b> while determining <b>standard costs</b>.</p>   |
| 4.                 | <p><b>Types of Standards</b><br/>Two main types:</p> <ul style="list-style-type: none"> <li>✓ <b>Ideal Standard</b> - Assumes <b>perfect operating conditions</b>, with <b>no inefficiencies</b>.</li> <li>✓ <b>Attainable Standard</b> - Based on <b>realistic conditions</b>, allowing for <b>normal losses</b> and <b>inefficiencies</b>.</li> </ul> |

## Types of Standards in Standard Costing

| Standard Type                           | Definition   | Key Points   |
|---|--|--|
| 1. Ideal Standard                       | Based on <b>maximum efficiency</b> , assuming <b>perfect operating conditions</b> with <b>no waste</b> , <b>idle time</b> , or <b>inefficiencies</b> . | <ul style="list-style-type: none"> <li>✓ Practically <b>unattainable</b>.</li> <li>✓ Results in <b>unfavourable variances</b>.</li> <li>✓ Can <b>demotivate</b> employees due to <b>unrealistic expectations</b>.</li> </ul> |
| 2. Attainable Standard                  | Based on <b>efficient but realistic conditions</b> , allowing for <b>normal waste</b> , <b>fatigue</b> , or <b>machine breakdowns</b> .                | <ul style="list-style-type: none"> <li>✓ <b>Achievable</b> and often <b>exceeded</b>.</li> <li>✓ Balances <b>motivation</b> and <b>efficiency</b>.</li> <li>✓ Encourages <b>morale</b> and <b>goal setting</b>.</li> </ul>   |
| 3. Current Standard                     | Reflects <b>current operating conditions</b> , including <b>present inefficiencies</b> and <b>wastage</b> .  | <ul style="list-style-type: none"> <li>✓ Easy to apply but may <b>fail to improve efficiency</b>.</li> <li>✓ Does <b>not promote performance uplift</b>.</li> </ul>  |
| 4. Basic Standard                       | A <b>long-term standard</b> that remains <b>unchanged</b> to <b>measure trends</b> in <b>performance</b> .   | <ul style="list-style-type: none"> <li>✓ May become <b>outdated</b>.</li> <li>✓ Used mainly for <b>long-term comparisons</b>, not for <b>active cost control</b>.</li> </ul>   |
| <h3>Criticisms of Standard Costing</h3> |  |  |

|    |  |
|----|--|
| 1. | <p><b>Lack of Flexibility</b><br/>Depends on <b>repetitive operations</b> and <b>homogeneous output</b>, which is less common in <b>dynamic markets</b>.</p> |
| 2. | <p><b>Static Assumptions</b><br/>Based on <b>stable business environments</b>—less relevant in today's <b>rapidly changing markets</b>.</p>                  |
| 3. | <p><b>Focus on Target vs. Improvement</b><br/>Assumes <b>meeting standards is enough</b>, rather than aiming for <b>continuous improvement</b>.</p>          |
| 4. | <p><b>Limited Use in Services</b><br/>Originally built for <b>mass production</b>, making it <b>less useful</b> in the <b>growing service industry</b>.</p>  |

| Use of Standard Costing in Practice |   |
|-------------------------------------|---|
| 1.                                  | <p><b>Profit Forecasting</b><br/>Projects <b>profit at various production levels</b>.</p>   |
| 2.                                  | <p><b>Planning &amp; Cost Control</b><br/>Aids in <b>decision-making</b>, <b>cost monitoring</b>, and <b>corrective actions</b>.</p>  |
| 3.                                  | <p><b>Volume-Cost Analysis</b><br/>Assesses <b>cost changes</b> and their <b>impact on sales</b>.</p>   |
| 4.                                  | <p><b>Efficiency Measurement</b><br/>Tracks <b>production performance</b> against <b>standards</b>.</p>   |
| 5.                                  | <p><b>Segment Evaluation</b><br/>Compares <b>departments</b>, <b>units</b>, or <b>products</b>.</p>   |
| 6.                                  | <p><b>Variance Analysis</b><br/>Highlights <b>differences between actual and standard costs</b>.</p>  |
| 7.                                  | <p><b>Employee Motivation</b><br/>Enables <b>performance-linked measurement</b> and <b>incentivisation</b>.</p>   |
| 8.                                  | <p><b>Industry Examples</b></p> <ul style="list-style-type: none"> <li>✓ <b>Automobile industry</b> - calculates cost of car production.</li> <li>✓ <b>Pharmaceutical industry</b> - computes drug manufacturing cost by assigning <b>overheads</b>.</li> </ul> |

## Standard Costing and budgetary control

**Budgetary control** and **standard costing** have the common **objective** of cost control by establishing **pre-determined targets**. These **two** techniques are **similar** in certain respects but differ in respect of other points. **Budgetary control** is a system of **planning** and **controlling** costs. It involves the **establishment** of budgets, **measurement** of actual performance,

comparison of **actual** performance with **budgeted** performance to develop the **deviations** and the analysis of the causes of **variations** for taking appropriate remedial **steps** .

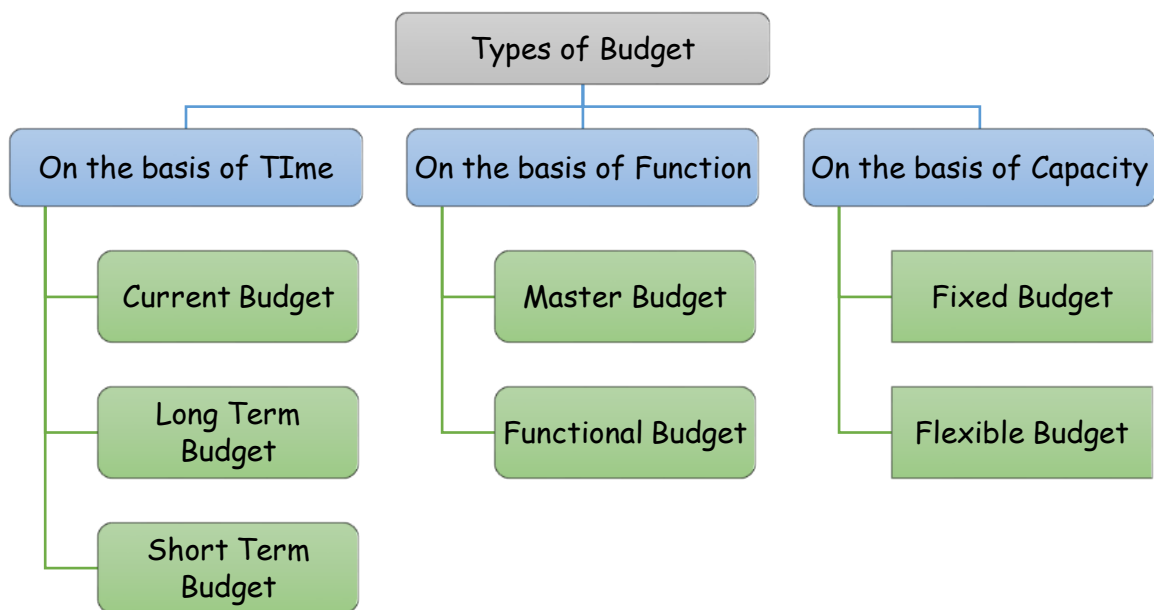
| Aspect               | Standard Costing  | Budgetary Control  |
|----------------------|---|--|
| 1. Definition        | Standard costing is a <b>technique</b> used to set <b>predetermined</b> costs for various elements of <b>production</b> , such as materials, labour, and overheads, to establish benchmarks for <b>comparison</b> with <b>actual</b> costs. | Budgetary control involves the <b>establishment</b> of <b>budgets</b> (financial plans) for various functions or activities within an organization and <b>comparing</b> actual <b>performance</b> against these budgets to <b>monitor</b> and control <b>financial</b> activities. |
| 2. Focus             | Focuses on setting <b>predetermined</b> costs for <b>individual</b> cost elements involved in the <b>production</b> process.  | Focuses on setting <b>financial</b> targets for overall <b>performance</b> , including revenues, expenses, and profits, across <b>different</b> functions or departments within the <b>organization</b> .  |
| 3. Time Horizon      | Typically <b>short-term</b> in nature, focusing on costs incurred during the <b>production</b> process.   | Can be <b>short-term</b> or <b>long-term</b> , depending on the <b>budget</b> period set by the organization, but often covers a <b>fiscal year</b> .  |
| 4. Purpose           | Primarily aimed at <b>cost control</b> and performance evaluation by comparing <b>actual costs</b> with standard costs to identify variances and take <b>corrective actions</b> .   | Aimed at <b>planning</b> , <b>coordinating</b> , and controlling overall financial activities by setting <b>targets</b> , allocating resources, and evaluating performance against <b>budgeted</b> figures.  |
| 5. Scope             | Primarily used in <b>manufacturing</b> industries where production costs are a significant <b>component</b> of overall expenses.  | Applicable to various types of <b>organizations</b> across different sectors, including <b>manufacturing</b> , <b>service</b> , and non-profit organizations.  |
| 6. Flexibility       | <b>Less flexible</b> compared to budgetary control as it <b>focuses</b> on predetermined costs based on <b>historical</b> data or industry standards.   | <b>More flexible</b> as it allows for adjustments to <b>budgets</b> based on <b>changing</b> circumstances, such as economic <b>conditions</b> or business <b>priorities</b> .   |
| 7. Control Mechanism | Focuses on <b>controlling</b> costs through <b>variance</b> analysis and  | Focuses on <b>controlling</b> overall financial performance by <b>monitoring</b> actual  |

|                           |   |   |
|---------------------------|---|---|
|                           | corrective actions to ensure that actual costs align with predetermined standards.  | performance against budgeted targets and taking corrective actions to address any deviations.   |
| 8. Performance Evaluation | Evaluates performance based on cost variances between actual and standard costs, focusing on efficiency and cost-effectiveness in production. | Evaluates performance based on variances between actual and budgeted figures across different financial categories, providing insights into overall financial health and performance. |

## CHAPTER 16: BUDGET & BUDGETARY CONTROL

### 1. Introduction

- ✓ **Budgeting** is a fundamental process in cost and **management** accounting that involves the formulation of a comprehensive plan for **allocating** resources and achieving organizational goals within a specified period.
- ✓ It serves as a **financial** roadmap, outlining expected **revenues**, expenses, and cash flows, while also providing a framework for decision-making, **performance** evaluation, and resource allocation. It plays a **crucial** role in organizational management by providing a structured approach to financial planning and **control**.
- ✓ **Budgetary** control, on the other hand, is the **systematic** process of planning, **coordinating**, and monitoring **financial** activities to ensure that actual **performance** aligns with budgeted **targets**. It facilitates the **implementation** of strategic **initiatives**, fosters accountability among stakeholders, and enhances **transparency** in financial management **practices**.



### 2. Types of Budgets

- ✓ **Functional Budget:** The functional **budget**, also referred as a **departmental budget**, is one which relates to any of the functions of an **organisation**. The number of functional budgets depend upon the size and nature of business. The following are the **commonly** used:
  - **Sales** Budget
  - **Purchase** Budget
  - **Production** Budget
  - **Selling and Distribution** Cost Budget
  - **Labour** Cost Budget

- Cash Budget
- Capital Expenditure Budget
- ✓ **Master Budget:** The **master** budget provides a consolidation of all the **subsidiary** budgets and normally consists of:
  - A **budgeted** income statement
  - Budgeted statement of **financial** position
  - A **cash** budget.
- ✓ Master Budget may be defined as a **summary** budget incorporating all the **functional** budgets, which has been finally **approved** and adopted.
- ✓ **Classification on the Basis of Capacity**
  - **Fixed** Budget: A fixed budget is designed to remain **unchanged** irrespective of the level of activity actually **attained**.
  - **Flexible** Budget: A flexible budget is a **budget** which is designed to change in accordance with the various level of **activity** actually attained. The flexible budget also called as Variable Budget or Sliding Scale **Budget**, takes both **fixed**, variable and **semi** fixed **manufacturing** costs into account.
- ✓ **Functional Budget:** The **functional** budgets are prepared for each function of the organisation. These budgets are normally prepared for a **period** of **one year** and then broken down to each month. The **CIMA** definition and the categorisation of the functional budget are discussed in the **previous** section. Some **illustration** on preparation of functional budget are given in the next section.

### 3. Flexible Budget

- ✓ A **flexible budget** is a budget which, by recognising the **difference** in behaviour between **fixed** and **variable** costs in relation to fluctuations in **output**, turnover, or other variable factors, is designed to change **appropriately** with such **fluctuations**.
- ✓ According to **CIMA**, "a **flexible** budget is defined as a budget which, by recognizing the difference between **fixed**, **semi**-variable and **variable** costs is designed to **change** in relation to the **level** of **activity** attained." Unlike static (fixed) budgets, the **flexible** budgets show the expected results of a **responsibility center** for different activity levels.
- ✓ While preparing a **flexible budget**, the expenses are classified into **three** categories viz.
  - Fixed,
  - Variable
  - Semi-variable.

#### 4. Fixed Budget

- ✓ A **budget** prepared on the basis of standard or **fixed level** of activity is known as **fixed budget**. It does **not** change with a **change** in the **level** of activities.
- ✓ According to **CIMA**, "a fixed budget is a budget designed to **remain unchanged** irrespective of the **level of activity** actually attained".
- ✓ A **fixed** budget shows the expected results of a **responsibility center** for only one activity level.
- ✓ Once the **budget** is prepared, it is not changed, even if the **level of activity changes**. Fixed budgeting is used by many **service companies** and for some **administrative** functions of manufacturing companies, such as **purchasing, engineering, and accounting**.
- ✓ **Fixed Budget** is used as an **effective tool** of cost control.

##### (i) Sales Budget

- ✓ **Sales** forecast is the commencement of **budgeting** and hence sales budget assumes primary importance. The quantity which can be sold may be the principal budget factor in many **business** undertakings. In any case in order to chalk out a realistic **budget** programme, there must be an **accurate sales forecast**.
- ✓ In estimating the **quantity** of sales for each **product**, past sales volumes are often used as a **starting** point. Once an estimate of the sales volume is obtained, the expected sales revenue can be determined by multiplying the **volume** by the expected unit **sales price**.
- ✓ The **sales budget** is prepared for each product. This includes:
  - the **quantity** of estimated sales and
  - the expected unit **selling price**. These data are often reported by **regions** or by **sales** representatives.

##### (ii) Production Budget

- ✓ **Production** Budget is a forecast of the **production** for the budget period of an organisation. Production budget is prepared in two parts, viz. production **volume** budget for the physical units of the products to be manufactured and the **cost of production** or manufacturing budget detailing the budgeted cost under **material**, labour, and factory **overhead** in respect of the products.
- ✓ Production budget is normally stated in **units of output**. Production should be carefully **coordinated** with the sales **budget** to ensure that production and sales are kept in balance during the period. The number of units to be manufactured to meet **budgeted sales** and **inventory** needs for each product is set forth in the production budget.

- ✓ Example of **production** budget:

## XYZ COMPANY

Production budget in units for the year ending March 31, 20....

|                                    | Products |   |
|------------------------------------|----------|---|
|                                    | A        | B |
| Budgeted sales                     |          |   |
| <b>Add</b> : Desired closing stock |          |   |
| Total quantity required            |          |   |
| <b>Less</b> : Opening stock        |          |   |
| Units to be produced               |          |   |

### (iii) Plant Utilisation Budget

- ✓ Plant **utilisation** budget represents, in terms of **working hours**, weight or other convenient units of plant **facilities** required to carry out the **programme** laid down in the production budget.
- ✓ The **main purposes** of this budget are:
  - To determine the load on **each process**, cost or groups of machines for the budget period.
  - To indicate the processes or **cost centres** which are overloaded so that corrective action may be taken such as: (i) **working overtime** (ii) sub- **contracting** (iii) **expansion** of production facility, etc.
  - To dovetail the **sales production** budgets where it is not possible to **increase** the **capacity** of any of the overloaded processes.
  - Where **surplus capacity** is available in any of the **processes**, to make effort to boost sales to utilise the **surplus** capacity.

### (iv) Direct Material Usage Budget

- ✓ The **steps** involved in the compilation of direct materials usage budget are as under:
  - The **quality** standards for each **item** of **material** have to be specified. In this connection, standardisation of size, quality, colour, etc., may be considered.
  - **Standard** requirement of **each item** of **materials** required should also be set. While setting the standard quality, **consideration** should be given to **normal loss** in process. The standard allowance for normal loss may be given on the basis of **past performance**, **test runs**, **technical estimates** etc.
  - Standard prices for each item of **materials** should be set after giving consideration to **stock** and **contracts** entered into.

## (v) Direct Material Purchase Budget

- ✓ The **production budget** is the starting point for determining the estimated quantities of direct materials to be **purchased**.
- ✓ Multiplying these **quantities** by the expected unit **purchase price** determines the total cost of **direct materials** to be **purchased**.
- ✓ Two important considerations that govern **purchase** budgets are as follows:
  - **Economic order quantity**.
  - **Re-order point** with safety stocks to cover fluctuations in demand.
- ✓ The **direct material** purchases budget helps management maintain inventory levels within reasonable limits. For this purpose, the **timing** of the direct materials purchases should be **coordinated** between the purchasing and **production** departments.

## (vi) Direct Labour Budget

- ✓ Once **sales** budget and **Production** budget are compiled and plant **utilisation** budget is decided detailed amount of the various **machine operations** involved and services required can be calculated. This will facilitate preparation of an estimate of **different grades** of **labour** required.
- ✓ From this, the **standard hours** required to be worked can be calculated the **total labour** component thus budgeted can be divided into **direct** and **indirect labour**. Standard **rates** of wages for each grade of labour can be introduced and then the direct and indirect **labour cost budget** can be prepared.

## (vii) Cash Budget

- ✓ **Cash budget** represents the cash requirements of the business during the budget period. It is the plan of **receipts** and **payments** of **cash** for the budget period, **analysed** to show the **monthly** flow of cash drawn up in such a way that the balance can be forecasted at **regular** intervals.
- ✓ The **cash budget** is one of the most important **elements** of the budgeted balance sheet. Information from the various operating budgets, such as the **sales** budget, the direct **materials** purchases budget, and the **selling** and administrative expenses budget, affects the **cash** budget.
- ✓ In addition, the **capital expenditures** budget, dividend policies, and plans for equity or **long-term debt financing** also affect the **cash** budget.

## (viii) Master Budget

- ✓ CIMA, London, defines it as "the **summary** budget, incorporating its component functional budgets, which is finally approved, adopted and employed."
- ✓ When all the necessary **functional** budgets have been prepared, the budget officer will prepare

the master budget which may consist of budgeted profit and loss account and budgeted balance sheet.

- ✓ These are in fact the budget summaries. When the master budget is approved by the board of directors, it represents a standard for the achievement of which all the departments will work.

## 5. Core Theory Topics

### Meaning of Budget (as per CIMA)

| Term           | Explanation   |
|----------------|---|
| Budget         | As per CIMA Official Terminology, a budget is a quantitative expression of a plan for a defined period. It may include planned sales volumes, revenues, costs, expenses, assets, liabilities, and cash flows. |
| Purpose Varies | A budget may mean different things to different people – such as a forecast, a resource allocation tool, a yardstick, or a target.  |

### Budget as a Forecast

| Aspect             | Details  |
|--------------------|--|
| Forecasting Nature | A budget includes forecasts of expected revenues, expenses, and financial outcomes for a given period (e.g., a fiscal year).       |
| Planning Tool      | It helps management plan the future by anticipating expected outcomes.   |
| Dynamic Nature     | A budget can become outdated due to unforeseen changes. When actual results diverge from the budget, new forecasts may be created. |
| Key Distinction    | A forecast is what is likely to happen. A budget is what the organisation wants to happen.   |

### Difference Between Budget and Forecast

| Basis             | Budget  | Forecast  |
|-------------------|---|---|
| Definition        | A planned target to be achieved.                                | An estimate of what is likely to occur.                         |
| Purpose           | Used as a control tool and performance yardstick.               | Used for planning and anticipating outcomes.                    |
| Nature            | Typically fixed for a period unless revised.                    | Can be frequently updated as new information becomes available. |
| Focus             | Emphasizes goals and objectives to be met.                      | Emphasizes probable events based on current trends and data.    |
| Use in Management | Used to set targets, allocate resources, and measure variances. | Used to adjust expectations and make real-time decisions.       |

| Forecasts   | Budgets   |
|---|---|
| ✓ Forecasts is mainly concerned with anticipated or probable event s. | ✓ Budget is related to planned events.  |
| ✓ Forecasts may cover for longer period (often in excess of a year).  | ✓ Budget is planned or prepared for a shorter period.                             |
| ✓ Forecast is only a tentative estimate.                              | ✓ Budget is a target fixed for a period.  |
| ✓ Forecast results in planning.                                       | ✓ Result of planning is budgeting.  |
| ✓ The function of forecast ends with the forecast of likely events.   | ✓ The process of budget starts where forecast ends and converts it into a budget. |
| ✓ Forecast usually covers a specific business function.               | ✓ Budget is prepared for the business as a whole.                                 |
| ✓ Forecasting does not act as a tool of controlling measurement.      | ✓ Purpose of budget is not merely a planning device but also a controlling tool.  |

### Essentials of a Budget

| Essential                | Description   |
|--------------------------|---|
| Future-Oriented          | It is prepared for a <b>specific future period</b> .          |
| Predefined Statement     | Created <b>before the time period begins</b> .                |
| Monetary or Quantitative | Expresses the <b>policy in numerical or financial terms</b> . |
| Predetermined Objective  | Designed to <b>achieve a specific goal</b> .                  |

### Objectives of Budgeting

| Objective     | Purpose / Benefit   |
|---------------|---|
| Planning      | Helps in preparing <b>financial plans</b> , setting <b>targets</b> for <b>income, expenses, and investments</b> , and guiding future actions.       |
| Coordination  | Aligns <b>departments and functions</b> towards <b>common strategic goals</b> , avoiding resource conflicts.  |
| Control       | Monitors actual performance <b>vs</b> budgeted targets, identifies <b>variances</b> , and ensures <b>efficient use of resources</b> .               |
| Evaluation    | Provides <b>benchmarks</b> for reviewing <b>organizational performance</b> , identifying <b>improvements</b> , and making <b>better decisions</b> . |
| Communication | Enhances <b>transparency and accountability</b> by clearly conveying <b>financial goals and expectations</b> to all stakeholders.                   |

### Benefits of Budgeting

| Benefit             | Description  |
|---------------------|--|
| Systematic Planning | Ensures the <b>planning of activities</b> is structured, making operations <b>smooth and organized</b> . |

|                              |   |
|------------------------------|---|
| Managerial Coordination      | Involves inputs from multiple management levels, promoting coordinated decision-making.       |
| Departmental Integration     | Promotes inter-department coordination since budgets are not made in isolation.               |
| Profitability & Control      | Helps in managing income and expenditure, supports profit planning, and guides key decisions. |
| Resource Availability        | Assures availability of working capital and resources through effective planning.             |
| Performance Evaluation       | Sets defined performance parameters to compare actual results with planned goals.             |
| Efficiency & Waste Reduction | Directs resources to productive use, thereby reducing wastage and losses.                     |

## The Budget Framework

| Aspect                          | Description  |
|---------------------------------|--|
| Budget Committee                | The coordinating body for budget preparation and administration. Headed by the Managing Director, assisted by a Budget Officer (usually a Cost Accountant). Includes representatives from sales, production, marketing, etc.                                   |
| Budget Period                   | Defined as the timeframe for which a budget is prepared and used. Typically annual, broken into monthly or quarterly control periods. May follow a Rolling Budget system (also called Continuous Budget) that updates as each month or quarter passes.         |
| CIMA Definition - Budget Period | "A period for which a budget is prepared and used, which may then be subdivided into control periods."   |
| Budget Manual                   | A document prepared by the Cost Accountant, outlining the objectives, procedures, and timetable for budget preparation. Distributed to all budget-responsible managers.  |
| CIMA Definition - Budget Manual | "A detailed set of guidelines and information about the budget process, including calendar of events, specimen forms, objectives, activities, and assumptions (e.g. inflation, interest rates)."   |
| Contents of Budget Manual       | <ol style="list-style-type: none"> <li>Budgetary objectives</li> <li>Organisation chart</li> <li>Description of principal budgets and inter-relationships</li> <li>Administrative and procedural steps</li> <li>Step-by-step preparation guidelines</li> </ol> |
| Responsibility for Budgets      | Responsibility lies with the Budget Holder - the manager who prepares and is also responsible for executing the budget. Examples:  |

- a. **Sales Manager** - sales budget, selling overheads
- b. **Purchasing Manager** - material purchase budget
- c. **Production Manager** - direct production cost budgets

## Budgetary Control: Overview & Objectives

| Category                     | Description   |
|------------------------------|---|
| Meaning                      | <b>Budgetary Control</b> is a <b>systematic process</b> where budgets prepared at the start of the accounting period are <b>compared with actual results</b> at the end to identify variances and apply <b>corrective actions</b> .   |
| Definition (as per standard) | It is the <b>establishment of budgets</b> aligned with executive responsibilities, followed by <b>continuous comparison</b> of actual vs. budgeted results to either: <ul style="list-style-type: none"> <li>• Take corrective actions to meet objectives</li> <li>• Revise the policy or budget as needed</li> </ul>   |
| Key Steps Involved           | <ol style="list-style-type: none"> <li>1. <b>Establish budgets</b> for each function/section</li> <li>2. <b>Compare actual performance</b> with budget</li> <li>3. <b>Assign responsibility</b> for deviations</li> <li>4. <b>Take remedial actions</b> for achieving objectives</li> <li>5. <b>Revise budgets</b> if required due to changes in environment</li> </ol> |

## Objectives of Budgetary Control

| Objective    | Purpose & Explanation   |
|--------------|---|
| Planning     | A <b>budget is a plan of action</b> . Budgeting enables <b>systematic planning</b> for the organisation over a specific period.   |
| Coordination | It helps in <b>aligning different departments</b> and ensures <b>cooperation</b> across the organisation toward <b>common goals</b> .   |
| Control      | Enables <b>monitoring of performance</b> by comparing actuals with <b>predetermined standards</b> . Variances are identified, analysed, and <b>corrective measures</b> are taken. |

## Budgetary Control vs Standard Costing

| Details    | Standard Costing   | Budgetary Control  |
|------------|--|--|
| Meaning    | A <b>cost accounting system</b> using <b>predetermined costs</b> to analyse <b>variances</b> and control operations. | A <b>planning tool</b> where management sets a <b>budget</b> for the future and compares it with actual performance. |
| Expressed  | Expressed in <b>both quantitative and monetary terms</b> .   | Expressed in <b>monetary terms only</b> .  |
| Objective  | Focused on <b>ascertaining and controlling costs</b> .   | Focused on <b>overall profitability</b> and the <b>financial position</b> of the business.                           |
| Emphasis   | Emphasis is on <b>what costs should be</b> .   | Emphasis is on <b>not exceeding cost limits</b> .  |
| Projection | It is a <b>projection of cost accounts</b> .   | It is a <b>projection of financial accounts</b> .  |

|         |                                      |                                    |
|---------|--------------------------------------|------------------------------------|
| Used by | Limited to manufacturing activities. | Applicable across all departments. |
|---------|--------------------------------------|------------------------------------|

## Advantages of Budgetary Control

| Advantage No.                | Explanation   |
|------------------------------|---|
| 1. Cost Reduction            | Helps in identifying areas where costs can be reduced effectively.        |
| 2. Policy Planning           | Aids top management in formulating policies and planning activities.      |
| 3. Department Coordination   | Facilitates coordination between departments by setting limits and goals. |
| 4. Profit Maximization       | Ensures higher profits through effective cost control.                    |
| 5. Performance Evaluation    | Enables continuous assessment of various budget centres.                  |
| 6. Supports Standard Costing | Lays a foundation for adopting standard costing practices.                |

## Limitations of Budgetary Control

| S. No. | Limitation                 | Description   |
|--------|----------------------------|---|
| 1      | Estimation-Based           | Budgets rely on forecasts and estimates, which lack precision and are not scientifically exact.                           |
| 2      | Mismatch with Actual Needs | Budgets may turn out to be inadequate or excessive, especially in a VUCA world (Volatile, Uncertain, Complex, Ambiguous). |
| 3      | People-Centric             | Effective implementation depends heavily on the cooperation, understanding, and willingness of people.                    |
| 4      | Time-Consuming             | Budgeting can be slow and less cost-effective when rapid business changes occur.  |

## Preparation of Budgets

### Types of Budgeting Process

| Type                       | Description   | Participation Level              |
|----------------------------|---|----------------------------------|
| Bottom-Up Budgeting        | Budget holders at all levels actively participate in setting their own budgets.                                       | ✓ High Participation             |
| Imposed/Top-Down Budgeting | Senior management sets budget allowances without allowing lower-level input.  | ✗ No Participation               |
| Negotiated Budgeting       | Budgets are determined through negotiation between budget holders and their reporting managers.                       | ↻ Moderate Participation         |
| Participative Budgeting    | Employees from lower levels contribute input, encouraging ownership and belonging. Also known as bottom-up budgeting. | ✓ High (Empowered) Participation |

## Stages in the Budgeting Process

| Stage                                      | Description  |
|--|--|
| 1. Communicating Budget Policy             | Top management <b>communicates budget guidelines</b> to those preparing budgets. Includes effects of <b>long-term plan</b> , such as changes in <b>sales mix</b> or activity levels.                     |
| 2. Identifying the Principal Budget Factor | Determine the <b>factor restricting performance</b> (usually <b>sales demand</b> ). Known as the <b>Principal Budget Factor</b> per <b>CIMA Terminology</b> . This factor guides all subsequent budgets. |
| 3. Order of Budget Preparation             | Budgets are prepared in the following <b>logical sequence</b> , assuming sales is the key factor:  |
| 4. Budget Negotiation                      | Budgets are <b>prepared at operational levels</b> and then <b>submitted to superiors</b> . Follows a <b>participative budgeting</b> approach.  |
| 5. Final Budget Acceptance                 | <b>Master Budget</b> is compiled once individual budgets are harmonized. <b>Top management</b> gives final approval after ensuring <b>alignment and negotiation</b> .                                    |
| 6. Budget Review                           | Regular comparison of <b>actual vs. budgeted performance</b> to provide feedback and initiate corrective action. Budgeting becomes a <b>continuous review process</b> .                                  |

### Conclusion:

The **Principal Budget Factor** is the **core driver** of the entire budgeting process. If not explicitly stated, it is assumed to be **sales**. The process begins with the **Sales Budget** and ends with the **Master Budget**, ensuring strategic alignment and financial control.

## Cash Budget - Overview & Usefulness

| Aspect          | Details   |
|-----------------|---|
| Definition      | A <b>Cash Budget</b> is a <b>statement of estimated future cash receipts and payments</b> , prepared to forecast <b>cash balances</b> at specific intervals. It includes <b>revenue and capital items</b> . |
| Purpose         | To identify <b>surplus or deficit</b> in cash over the budget period, enabling the business to either <b>invest surplus</b> or <b>arrange funds</b> to cover <b>deficits</b> .                              |
| CIMA Definition | "A detailed budget of estimated cash inflows and outflows incorporating both revenue and capital items."  |

## Usefulness of Cash Budget

| Cash Position      | Description                               | Recommended Actions   |
|--------------------|---|---|
| Short-term Surplus | Temporary excess cash over a short period | <ul style="list-style-type: none"> <li>❖ Make <b>short-term investments</b></li> <li>❖ Make <b>early payments</b> to avail discounts</li> </ul> |

|                      |  |  |
|----------------------|--|--|
|                      |  | <ul style="list-style-type: none"> <li>❖ Invest in <b>receivables/inventories</b> to drive sales</li> </ul>  |
| Short-term Shortfall | Temporary shortage of cash               | <ul style="list-style-type: none"> <li>❖ Arrange <b>overdraft</b> facilities</li> <li>❖ Reduce <b>receivables</b> quickly</li> <li>❖ <b>Delay payments</b> without incurring extra cost</li> </ul>           |
| Long-term Surplus    | Sustained excess cash over a long period | <ul style="list-style-type: none"> <li>❖ <b>Strategic expansion/diversification</b></li> <li>❖ Plan <b>long-term investments</b></li> <li>❖ Acquire <b>fixed assets</b></li> </ul>                           |
| Long-term Shortfall  | Sustained cash deficit                   | <ul style="list-style-type: none"> <li>❖ Raise <b>long-term finance</b> (e.g., equity)</li> <li>❖ Consider <b>divestment</b> or <b>shutdown</b></li> <li>❖ Explore <b>retrenchment strategies</b></li> </ul> |

### Most Common Method

| Method Name                | Description  |
|----------------------------|--|
| Receipt and Payment Method | A widely used format to prepare the <b>Cash Budget</b> , where all <b>expected cash receipts and payments</b> are recorded to estimate <b>closing cash balance</b> . |

### Fixed Budget vs Flexible Budget

| Aspect          | Fixed Budget   | Flexible Budget  |
|-----------------|--|--|
| Definition      | Budget prepared at a <b>fixed capacity level</b> (e.g. 80%) and does <b>not change</b> with activity level.  | Budget that is <b>adjusted for different activity levels</b> , recognizing cost behaviour. |
| CIMA Definition | "A budget set prior to the control period and not changed in response to activity, cost or revenue changes." | Recognises <b>cost behaviour patterns</b> and adjusts as volume changes.                   |
| Basis           | Prepared based on <b>sales forecast</b> and cost estimates (segregated into fixed & variable).               | Designed to accommodate <b>multiple levels of output or activity</b> .                     |
| Nature          | Used as <b>benchmark</b> for performance comparison.   | Preferred for <b>intelligent decision-making</b> due to flexibility.                       |
| Example         | Operating budget at <b>80% capacity</b> .  | Budget projecting <b>profit at 60%, 80%, 100% activity</b> .                               |
| Master Budget   | Treated as a fixed budget since it is based on <b>planned volume</b> .                                       | Functional budgets adjusted for actual activity levels.                                    |

### Advantages of Flexible Budget

| Advantage                  | Explanation   |
|----------------------------|---|
| Covers all activity levels | Useful for projecting costs/profits at <b>various volumes</b> . |
| Classifies overheads       | Segregates into <b>fixed, variable, and semi-variable</b> .     |

|                                |  |
|--------------------------------|--|
| Forecasts at different outputs | Allows <b>cost estimation</b> at changing levels.        |
| Improves decision-making       | Enables <b>comparative analysis</b> for better control.  |
| Compatibility                  | Can be used <b>with or without standard costing</b> .    |
| Pricing & tendering            | Supports <b>accurate cost estimation</b> for quotations. |

## Steps in Preparation of Flexible Budget

| Step   | Action                                 | Key Notes   |
|--------|--|---|
| Step 1 | <b>Determine cost behaviour</b>        | Classify as <b>Fixed, Variable, or Semi-variable</b> :<br>❖ Fixed costs stay constant<br>❖ Variable costs = constant per unit<br>❖ Semi-variable = decreasing cost per unit as volume increases |
| Step 2 | <b>Calculate budget cost allowance</b> | Formula:<br>❖ <b>Fixed cost</b> = constant<br>❖ <b>Variable cost</b> = units × rate<br>❖ <b>Semi-variable</b> = separate into fixed + variable parts  |

## Zero Base Budgeting (ZBB) - Summary Table

| Aspect                                | Description  |
|---------------------------------------|--|
| Definition                            | ZBB is a <b>budgeting method</b> where every activity is <b>re-evaluated from scratch</b> ("zero base") every time the budget is formulated. Each expense must be <b>fully justified</b> . Also known as <b>priority-based budgeting</b> . |
| Origin                                | Introduced by <b>Peter A. Pyhrr</b> at Texas Instruments (1969-70). First applied in <b>State of Georgia (USA)</b> by <b>Jimmy Carter</b> and later in India (Maharashtra) in the 1980s-90s.   |
| Difference from Traditional Budgeting | Unlike <b>incremental budgeting</b> , ZBB <b>does not assume past activity continuity</b> . Every activity is evaluated <b>independently</b> regardless of its past.   |
| Focus                                 | ZBB emphasizes <b>programs/activities</b> instead of <b>functional departments or line items</b> .   |

## Steps in Application of ZBB

| Step                             | Explanation   |
|----------------------------------|---|
| 1. Identify Activities           | Each activity is termed as a <b>Decision Package</b> (a documented activity evaluated for cost-benefit and priority). |
| 2. Justify Package               | Ensure each decision package <b>aligns with organisational goals</b> .  |
| 3. Determine Minimum Effort Cost | Calculate the <b>minimum cost</b> required to sustain the activity.   |
| 4. Evaluate Alternatives         | Explore <b>alternative methods</b> for better or cheaper options.   |

|                       |  |
|-----------------------|--|
| 5. Allocate Resources | Based on <b>cost-benefit analysis</b> , choose and fund the <b>most efficient packages</b> . |
|-----------------------|--|

### Benefits of ZBB

| Benefit                          | Explanation  |
|----------------------------------|--|
| 1. From Scratch Evaluation       | Activities are continued <b>only if justified</b> , not just repeated.           |
| 2. Efficient Resource Allocation | Promotes <b>cost-benefit analysis</b> , avoids <b>wastage and obsolescence</b> . |
| 3. Encourages Brainstorming      | Sparks <b>new ideas</b> and improves <b>staff involvement</b> .                  |
| 4. Enhances Communication        | Promotes <b>inter-staff communication</b> and <b>coordination</b> .              |
| 5. Cost Awareness                | Increases <b>managerial awareness</b> of input costs.                            |
| 6. Documentation                 | Requires thorough records, which <b>builds organisational memory</b> .           |

### Limitations of ZBB

| Limitation                      | Explanation   |
|---------------------------------|---|
| 1. Time Consuming               | ZBB is <b>detailed and lengthy</b> , requiring <b>extensive paperwork</b> .               |
| 2. High Cost                    | Preparation and implementation involve <b>significant costs</b> .                         |
| 3. Staff Morale                 | Staff may feel <b>insecure</b> if their functions are <b>discontinued</b> .               |
| 4. Subjectivity                 | <b>Ranking of activities</b> may become <b>biased or subjective</b> .                     |
| 5. Non-Financial Issues Ignored | Ethical or social responsibilities may get <b>overlooked</b> due to low-ranking packages. |

### Performance Budgeting - Summary Table

| Aspect     | Details  |
|------------|--|
| Definition | A <b>budgetary system</b> where <b>input costs</b> are linked to <b>performance/results</b> . Widely used in <b>Government and Public Sector Undertakings (PSUs)</b> .   |
| Focus      | Projects <b>Government activities</b> and corresponding <b>expenditure</b> over a budget period.   |
| Structure  | Budget is <b>classified</b> into: <ul style="list-style-type: none"> <li>• <b>Functions</b> (e.g., education, health, irrigation)</li> <li>• <b>Programs</b> under each function</li> <li>• <b>Activities/Projects</b> under each program</li> </ul> |

### Main Features

| Feature                 | Explanation  |
|-------------------------|--|
| Classification          | Based on <b>functions, programs, and activities</b>        |
| Objective Specification | Clear <b>objectives</b> set for each <b>program</b>        |
| Measurement Methods     | Use of <b>work measurement techniques</b> , where feasible |
| Target Setting          | Fixing <b>work targets</b> for each program/activity       |

## Process of Performance Budgeting

| Step                   | Explanation   |
|------------------------|---|
| 1. Set Objectives      | Define goals for each program clearly.  |
| 2. Resource Allocation | Allocate resources based on objectives.   |
| 3. Target Setting      | Fix annual, quarterly, and monthly targets for the organisation and its activity centres. |
| 4. Performance Ratios  | Set up performance/productivity ratios for evaluation.                                    |
| 5. Monitor & Compare   | Compare actuals with targets regularly.   |
| 6. Reporting           | Submit performance reports (physical & financial) to higher authorities.                  |

## Execution and Monitoring

| Agency Role       | Responsibility   |
|-------------------|--|
| Compiling Budgets | Done by Govt. Depts/Public Undertakings  |
| Review & Sanction | Higher authorities review and approve funds  |
| Execution         | Agencies ensure: <ul style="list-style-type: none"> <li>• Timely start</li> <li>• Steady expenditure</li> <li>• Avoid over/under-spending</li> <li>• Progress reporting</li> </ul> |

## Final Phase: Reporting

| Report Includes                         |
|---|
| • Physical performance achieved         |
| • Expenditure incurred                  |
| • Variances (with reasons) from targets |

## CHAPTER 17: COST ACCOUNTING STANDARDS

### 1. Introduction

- ✓ Cost Accounting Standards (CAS) are a set of guidelines and principles formulated to standardize the methods and processes involved in cost determination, measurement, and reporting.
- ✓ These standards provide a structured framework for organizations engaged in various industries to consistently and transparently account for costs related to their products, services, or operations.
- ✓ CAS are designed to enhance the reliability, comparability, and relevance of cost information, supporting effective cost management and decision-making.
- ✓ CAS contribute to the overall efficiency and effectiveness of cost and management accounting processes within organizations.

### 1. Core Theory Topics

The significance of CAS can be categorically stated as:

| Significance of CAS |  |
|---------------------|--|
| 1.                  | <p><b>Consistency</b><br/>CAS promote <b>uniformity</b> in cost accounting across time periods and departments. This helps in making <b>trend analysis</b> and <b>comparisons</b> meaningful.</p>            |
| 2.                  | <p><b>Comparability</b><br/>By applying the <b>same principles</b>, CAS make it easier to <b>compare costs</b> between companies in the <b>same industry</b>, aiding <b>benchmarking</b>.</p>                |
| 3.                  | <p><b>Transparency</b><br/>CAS ensure <b>clear disclosure</b> of cost information. This improves understanding for <b>management, investors, and regulators</b>, enabling better <b>decision-making</b>.</p> |
| 4.                  | <p><b>Improved Decision-Making</b><br/>CAS provide <b>reliable cost data</b> that supports decisions on <b>pricing, resource use, and cost control</b>.</p>  |
| 5.                  | <p><b>Regulatory Compliance</b><br/>CAS help meet <b>legal and regulatory requirements</b> in industries where such compliance is <b>mandatory</b>, building <b>trust and accountability</b>.</p>            |
| 6.                  | <p><b>Resource Allocation and Efficiency</b><br/>With <b>standardized practices</b>, CAS reveal the <b>true cost</b> of products/services, helping in <b>efficient use of resources</b>.</p>                 |
| 7.                  | <p><b>Cost Control</b><br/>CAS offer a <b>structured approach</b> to find and analyze <b>cost variances</b>, allowing companies to take <b>corrective actions</b> and improve <b>profitability</b>.</p>      |

## Evolution of Cost Accounting Standard

|    |  |
|----|--|
| 1. | <p><b>Pre-Independence Period</b></p> <p>Cost accounting was <b>basic</b> with <b>no standardization</b>. Focus was only on <b>simple costing methods</b> for financial reporting.</p>   |
| 2. | <p><b>Post-Independence Period</b></p> <p>Rapid <b>industrial growth</b> and <b>economic development</b> led to complex business operations, requiring a <b>structured cost accounting</b> approach.</p>   |
| 3. | <p><b>Formation of Professional Body</b></p> <p>In <b>1959</b>, the <b>Institute of Cost and Works Accountants of India (ICWAI)</b> was formed, now known as the <b>Institute of Cost Accountants of India (ICAI)</b> - a <b>major milestone</b> for cost accounting in India.</p>   |
| 4. | <p><b>Regulatory Mandates</b></p> <p>The <b>Government of India</b> recognized the role of cost accounting in <b>economic planning</b> and introduced <b>mandatory compliance</b> in select industries. Key developments:</p> <ul style="list-style-type: none"> <li>i) <b>Section 209(1)(d)</b><br/>Under <b>Companies Act, 1956</b>, companies had to maintain <b>cost records</b> for <b>production/acquisition</b> of goods and services.</li> <li>ii) <b>Cost Audit Rules, 1958</b><br/>Introduced under the <b>Companies Act, 1956</b>, requiring certain companies to undergo <b>cost audits</b> and submit reports to the government.</li> <li>iii) <b>Trigger for CAS</b><br/>Sections <b>209(1)(d)</b> and <b>233B</b> (cost audit provision) led to the <b>formal development of CAS</b>.</li> <li>iv) <b>Cost Audit (Report) Rules</b><br/>Set procedures for <b>cost record maintenance</b> and <b>audit report submission</b>. Important versions: <ul style="list-style-type: none"> <li>a. <b>1996 Rules</b><br/>Introduced and later <b>amended in 2011</b>.</li> <li>b. <b>2014 Rules</b><br/>Known as <b>Companies (Cost Records and Audit) Rules, 2014</b>, with amendments - latest in <b>July 2016</b>.</li> </ul> </li> </ul> |
| 5. | <p><b>Mandatory Cost Audit</b></p> <p>As per the <b>2014 Rules</b>, companies in <b>specific industries</b> or crossing <b>turnover thresholds</b> must conduct a <b>cost audit</b> to ensure accuracy in <b>cost records</b>, including <b>production and sales costs</b>.</p>  |

## Legal Provisions for Cost Records and Cost Audit

|    |  |
|----|--|
| 1. | <p><b>Companies Act, 2013</b><br/>Brought a <b>significant shift</b> in cost accounting, ensuring <b>transparency, accountability, and standardization</b> for certain companies.</p>  |
| 2. | <p><b>Section 148 - Cost Records &amp; Cost Audit</b><br/>Central provision under the Act for regulating <b>cost records</b> and <b>cost audits</b>.</p> <p>a. <b>Applicability</b><br/>The <b>Central Government</b> can mandate maintenance of cost records and audits for <b>specific classes of companies</b> in select industries.</p> <p>b. <b>Cost Audit</b><br/>The Government can <b>compel companies</b> to get a <b>cost audit</b> done, with scope defined in the rules.</p> <p>c. <b>Cost Accounting Records</b><br/>Companies under audit must maintain <b>detailed cost records</b>, including <b>cost of production, cost of sales, etc., as per industry</b>.</p> |
| 3. | <p><b>Companies (Cost Records and Audit) Rules, 2014</b><br/>Issued under <b>Section 148</b>, these rules define <b>who must maintain cost records and undergo audit</b>, along with <b>formats and procedures</b>.</p>  |
| 4. | <p><b>Rule 3 - Maintenance of Cost Records</b></p> <p>a. <b>Applicability</b><br/>Specifies classes of companies (e.g., <b>pharma, fertilizers, electricity, chemicals, cement</b>) that must maintain <b>cost records</b>.</p> <p>b. <b>Cost Records</b><br/>Lists the <b>details to be maintained</b>, tailored to each industry's <b>cost structure</b>.</p>  |
| 5. | <p><b>Rule 4 - Cost Audit Report</b></p> <p>a. <b>Appointment of Cost Auditor</b><br/>Companies covered must appoint a <b>qualified Cost Auditor</b> to review cost records.</p> <p>b. <b>Cost Audit Report</b><br/>Report includes <b>compliance status, adherence to Cost Accounting Standards, and other audit observations</b>.</p>  |

## Legal Provisions and Role of Cost Accounting Standards Board (CASB)

|    |   |
|----|---|
| 1. | <p><b>Rule 6 - Filing of Cost Audit Report</b></p> <p>a. <b>Submission to the Board</b><br/>The <b>Cost Auditor</b> must submit the <b>cost audit report</b> to the <b>Board of Directors</b> within <b>180 days</b> of the financial year end.</p> <p>b. <b>Board's Responsibility</b></p> |
|----|---|

|    |   |
|----|---|
|    | <p>The <b>Board</b> must send the report along with its <b>comments</b> (if any) to the <b>Central Government</b> within <b>30 days</b> of receiving it.</p>  |
| 2. | <p><b>Rule 8 - Submission to Central Government</b></p> <p>a. <b>Cost Auditor's Report</b><br/>                 The <b>Board</b> must submit the <b>Cost Auditor's report</b> and <b>Board's comments</b> to the <b>Central Government</b> within <b>30 days</b>.</p> <p>b. <b>Penalties for Non-compliance</b><br/> <b>Penalties</b> apply to both the <b>company</b> and its <b>officers</b> for not maintaining cost records or not complying with audit provisions.</p>   |
| 3. | <p><b>Cost Accounting Standards Board (CASB)</b><br/>                 Formed by the <b>Institute of Cost Accountants of India</b> to ensure <b>uniformity, consistency, and structure</b> in cost accounting.</p> <p>a. <b>Objective</b><br/>                 To develop <b>Cost Accounting Standards (CAS)</b> that guide <b>organizations, government bodies, regulators, and academia</b>.</p> <p>b. <b>Global Relevance</b><br/>                 CASB also considers <b>international practices</b> and ensures that Indian standards are aligned globally. If any standard contradicts law due to later changes, <b>the law will prevail</b>.</p>  |
| 4. | <p><b>Functions of CASB</b></p> <p>a. <b>Framework Issuance</b><br/>                 Develops and issues the <b>framework</b> for <b>CAS</b>.</p> <p>b. <b>Professional Guidance</b><br/>                 Provides <b>guidelines</b> for <b>Cost and Management Accounting professionals</b>.</p> <p>c. <b>Uniform Cost Statements</b><br/>                 Assists in preparing <b>uniform cost statements</b> under various <b>statutes</b>.</p> <p>d. <b>Interpretations</b><br/>                 Gives <b>interpretations</b> on standards when required.</p> <p>e. <b>Application Guidance</b><br/>                 Issues <b>guidance</b> on how to <b>apply a particular standard</b>.</p> <p>f. <b>Promotion of CAS</b><br/>                 Promotes <b>CAS</b> and <b>encourages adoption</b> in preparing <b>General-Purpose Cost Statements</b>.</p> <p>g. <b>Policy Advocacy</b><br/>                 Urges <b>Government</b> and authorities to <b>enforce CAS</b> for standardization.</p> <p>h. <b>User Education</b><br/>                 Educates <b>users and stakeholders</b> on the <b>need and benefits</b> of <b>CAS</b> compliance.</p> |

## CAS - 1 - Cost Accounting Standard on "Classification of Cost"<sup>5</sup>

This standard establishes a **framework** for systematically classifying **costs**, ensuring **transparency** and **comparability** in financial reporting for products or services.

1. **Introduction**  
CAS - 1 addresses the **principles** of cost classification to determine the **cost** of a product or **service**.
2. **Objective**  
The objective is to ensure **uniformity** and **consistency** in the classification of costs for **disclosure** and presentation in cost statements.
3. **Scope**  
Applies to cost statements requiring **classification**, presentation, and **disclosure**, including those needing **attestation**.
4. **Definitions**  
Defines key terms such as **abnormal** cost, **administrative** overheads, **conversion** cost, cost center, cost **object**, cost of **production**, and others.
5. **Principles of Classification Costs :**  
Costs are classified based on **nature**, traceability to a cost **object**, function, **behavior**, and production/**operation** process. The scheme ensures every cost item is classified.
6. **Classification of Costs:**
  - By Nature of **Expenses**: Material, Employee, and **Expenses**.
  - By Nature of **Traceability**: Direct and Indirect Costs.
  - By **Function**: Production, **Administration**, Selling, Distribution, Research, and Development.
  - By Nature of **Behavior**: Fixed, **Variable**, and **Semi-Variable** Costs.
  - By Nature of **Production/Operation** Process: Batch Cost, Process Cost, **Operation** Cost, **Contract** Cost, Joint Costs.
7. **Presentation**  
Cost items in the cost **statement** must be presented based on relevant **classification** **consistently** from period to period.
8. **Disclosure**  
Changes in cost **classification** are allowed only if required by **law** or compliance with a standard. **Material** changes must be disclosed in cost **statements**.

## CAS - 2 Cost Accounting Standard on "Capacity Determination"

This **standard** deals with the principles and methods of determining the **capacity** of a facility for producing goods or providing services by an **entity**. This standard deals with the **principles** and methods of **classification** and determination of capacity of an entity for **ascertainment** of the cost

of product or service, and the **presentation** and disclosure in cost statements.

1. **Objective**  
The objective of this **standard** is to bring **uniformity** and **consistency** in the principles and methods of determination of capacity with reasonable **accuracy**.
2. **Scope**  
This standard shall be applied to the **cost statements**, including those requiring **attestation**, which require determination of **capacity** for assignment of overheads.
3. **Determination of Capacity**  
**Capacity** shall be determined in terms of units of **production** or services or **equivalent machine or man hours**.
4. **Installed Capacity**  
Installed capacity is usually **determined** based on:
  - Technical specifications of **facility**.
  - Technical **evaluation**.
  - Capacities of individual or interrelated **production** or operation centres.
  - Operational **constraints** or capacity of critical machines or **equipment**.
  - Number of shifts or machine **hours** or man hours.
5. **Normal Capacity**  
Normal capacity is determined after suitable **adjustments** to the installed capacity. The adjustments may be of the following nature:
  - **Time** lost due to scheduled preventive or **planned** maintenance.
  - Number of **shifts** or machine hours or man **hours**.
  - Holidays, **normal** shut down days, normal **idle** time.
  - Normal time **lost** in batch change over.

## CAS - 3 Cost Accounting Standard on "Production and Operation Overheads"

1. **Introduction**  
CAS-3 addresses **principles** and methods for determining **Production** or **Operation Overheads**, focusing on classification, measurement, **assignment**, and disclosure for the cost of goods or **services**.
2. **Objective**  
The objective is to **ensure** uniformity and **consistency** in determining Production or Operation Overheads with reasonable accuracy.
3. **Scope**  
Applies to cost **statements** requiring classification, **measurement**, assignment, presentation, and disclosure of **Production** or Operation Overheads, including those needing **attestation**.
4. **Definitions**

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|    | Defines key terms such as <b>abnormal</b> cost, absorption of <b>Production</b> or Operation Overheads, administrative overheads, cost <b>center</b> , and <b>fixed</b> costs.  |
| 5. | <b>Principles of Measurement</b><br>Outlines principles for determining <b>Production</b> or <b>Operation</b> Overheads, covering procurement, <b>imputed</b> costs, abnormal costs, <b>subsidies</b> , fines, penalties, <b>credits</b> , and recoveries.                                  |
| 6. | <b>Assignment</b><br>Guidelines for assignment of <b>Production</b> or Operation Overheads, <b>emphasizing</b> traceability in an economically <b>feasible</b> manner, and the principles of cause and effect or <b>benefits</b> received.  |
| 7. | <b>Presentation</b><br><b>Production</b> or Operation Overheads are <b>presented</b> as a separate <b>cost</b> head. Detailed presentation includes <b>material</b> , element-wise, and <b>behavior-wise</b> details. Any under-absorption or <b>over-absorption</b> is <b>reconciled</b> . |
| 8. | <b>Disclosures</b><br>Disclosures include the <b>basis</b> of assignment, <b>foreign</b> exchange transactions, dealings with related parties, <b>subsidies</b> , credits, abnormal costs, <b>unabsorbed</b> overheads, and changes in cost <b>accounting</b> principles.                   |
| 9. | <b>Effective Date</b><br>Effective from <b>April 1, 2016</b> , for the preparation and <b>certification</b> of General-Purpose <b>Cost</b> Accounting Statements.   |

## CAS - 4 Cost Accounting Standard on "Cost of Production for Captive Consumption"

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| 1. | <b>Introduction</b><br>This standard was issued to <b>specify</b> the principles for determination of cost of production for <b>valuation</b> of goods meant for captive <b>consumption</b> , as required under the <b>Central Excise</b> Valuation (Determination of Price of Excisable Goods) Rules 2000. <b>CEBC</b> , vide circular No. 692/8/2003-CX dated 13-2-2003 had clarified that in case of captive <b>consumption</b> , cost calculation should be as per <b>CAS-4</b> only. With the introduction of Goods and Services Tax (GST) with effect from July 1, 2017, the concept of ' <b>captive consumption</b> ' is no more relevant for computing the tax <b>incident</b> . However, the concept of cost of production or <b>manufacture</b> is relevant under the GST laws where the value of <b>supply</b> of goods or services or both are determined based on <b>cost</b> . |
| 2. | <b>Objective</b>   |

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|    | The objective of this <b>standard</b> is to bring uniformity and <b>consistency</b> in the principles and methods of determining the cost of <b>production</b> or acquisition or supply of goods or provision of <b>services</b> as required under the provisions of GST Act / Rules.   |
| 3. | <b>Definition</b><br>definitions of cost of <b>production</b> , captive consumption and <b>normal</b> capacity is provided in para 4 of this <b>standard</b> .  |
| 4. | <b>Scope</b><br>This standard should be applied to cost <b>statements</b> which require classification, measurement, <b>assignment</b> , presentation, and <b>disclosure</b> of related costs for determination of the following under the relevant <b>provisions</b> of GST Acts / Rules.<br>(i) Determination of cost of <b>production</b> of goods;<br>(ii) Determination of cost of <b>acquisition</b> of goods;<br>(iii) Determination of cost of <b>supply</b> of goods;<br>(iv) Determination of cost of <b>provision</b> / supply of services; and<br>(v) Determination of value of supply of goods or services as per open <b>market</b> value or as per goods or services of like kind and <b>quality</b> . |

## CAS - 5 Cost Accounting Standard on "Determination of Average Cost of Transportation"

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| 1. | <b>Introduction</b><br>The cost accounting principles for <b>tracing</b> / identifying an <b>element</b> of cost, its allocation / <b>apportionment</b> to a product or service are well established. <b>Transportation</b> Cost is an important element of cost for procurement of <b>materials</b> for production and for <b>distribution</b> of product for sale. Therefore, cost <b>accounting</b> records should present transportation cost separately from the other cost of <b>inward</b> materials or cost of sales of <b>finished</b> goods. The Finance Act 2003 also specifies the certification requirement of <b>Transportation</b> Cost for claiming <b>deduction</b> while arriving at the assessable value of <b>excisable</b> goods cleared for home consumption / export. There is a need to standardize the record keeping of <b>expenses</b> relating to transportation and computation of <b>Transportation</b> Cost. |
| 2. | <b>Objective</b><br>(i) To bring <b>uniformity</b> in the application of <b>principles</b> and methods used in the determination of <b>averaged</b> / equalised <b>Transportation</b> Cost.<br>(ii) To prescribe the system to be followed for <b>maintenance</b> of records for collection of cost of transportation, its <b>allocation</b> / apportionment to cost centres, <b>locations</b> or products.<br>(iii) To provide <b>transparency</b> in the determination of cost of <b>transportation</b> .   |
| 3. | <b>Scope</b><br>This standard should be applied for <b>calculation</b> of cost of transportation required under any   |

statute or regulations or for any other purpose. For example, this **standard** can be used for:

- (i) Determination of **average** transportation cost for claiming the deduction for arriving at the assessable value of **excisable** goods.
- (ii) **Insurance** claim valuation.
- (iii) Working out claim for freight subsidy under **Fertilizer Industry** Coordination Committee.
- (iv) Administered price **mechanism** of freight cost element.
- (v) Determination of **inward freight** costs included or to be included in the cost of purchases attributable to the acquisition.
- (vi) Consumption of freight included in the value of **inventory** for accounting on inventory or valuation of **stock hypothecated** with Banks / Financial Institution etc.

## CAS - 6 Cost Accounting Standard on "Material Cost"

CAS 6 aims to **standardize** the determination and reporting of **material** costs, promoting consistency and transparency in cost accounting **practices**. It provides guidelines for valuation, assignment, **presentation**, and disclosure of **material** costs in cost statements, contributing to effective cost management and **decision-making**.

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| 1. | <p><b>Introduction</b></p> <p>CAS 6 focuses on <b>principles</b> and methods for determining <b>Material</b> Cost, covering various types of materials used in <b>production</b>. It excludes Packing <b>Materials</b>, as a separate standard is dedicated to that.</p>      |
| 2. | <p><b>Objective</b></p> <p>The primary objective is to establish <b>uniformity</b> and consistency in determining material costs with <b>reasonable</b> accuracy.</p>   |
| 3. | <p><b>Scope</b></p> <p>CAS 6 applies to cost statements requiring <b>classification</b>, measurement, assignment, presentation, and <b>disclosure</b> of material costs, including those requiring <b>attestation</b>.</p>  |
| 4. | <p><b>Definitions</b></p> <p>Defines terms like <b>abnormal</b> cost, administrative overheads, cost object, <b>defectives</b>, <b>imputed</b> costs, intermediate product, material cost, <b>production</b> overheads, scrap, standard cost, waste, and <b>spoilage</b>.</p> |
| 5. | <p><b>Principles of Measurement</b></p> <p>Details principles for the valuation of material <b>receipts</b> and issues, including the treatment of <b>abnormal</b> costs, waste, <b>spoilage</b>, and the inclusion of imputed costs.</p>                                     |
| 6. | <p><b>Assignment of Costs</b></p> <p>Outlines the basis for assigning costs to <b>products</b> or services, covering materials, <b>direct</b> expenses, and <b>indirect</b> materials.</p>  |
| 7. | <p><b>Presentation</b></p>  |

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|    | Cost statements should classify <b>direct</b> materials (e.g., raw <b>materials</b> , components) and <b>indirect</b> materials (e.g., tools, stores) under <b>suitable</b> heads.   |
| 8. | <b>Disclosures</b><br><b>Specifies</b> information to be disclosed in cost statements, including <b>quantity</b> and rates of major items, <b>valuation</b> basis, changes in accounting <b>principles</b> , excluded abnormal costs, demurrage or detention charges, <b>subsidies/grants</b> , and costs from <b>related</b> parties. |

## CAS - 7 Cost Accounting Standard on "Employee Cost"

CAS 7 aims to standardize the determination and **reporting** of **Employee Costs**, ensuring consistency and **transparency** in cost accounting practices. It provides guidelines for **valuation**, assignment, presentation, and disclosure of **Employee Costs** in cost statements, contributing to **effective** cost management and **decision-making**.

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| 1. | <b>Introduction</b><br>CAS 7 addresses the <b>principles</b> and methods for determining <b>Employee Cost</b> , covering its <b>classification</b> , measurement, assignment, <b>presentation</b> , and disclosure in cost <b>statements</b> .   |
| 2. | <b>Objective</b><br>The objective is to establish <b>uniformity</b> and <b>consistency</b> in determining Employee Cost with reasonable <b>accuracy</b> .  |
| 3. | <b>Scope</b><br>CAS 7 applies to cost <b>statements</b> requiring classification, <b>measurement</b> , assignment, <b>presentation</b> , and disclosure of Employee Cost, including those requiring <b>attestation</b> .   |
| 4. | <b>Definitions</b><br>Defines terms like abnormal cost, <b>abnormal</b> idle time, administrative overheads, cost object, direct <b>employee</b> cost, distribution <b>overheads</b> , employee cost, idle time, imputed costs, indirect employee cost, <b>marketing</b> overheads, overtime <b>premium</b> , production overheads, <b>selling</b> overheads, standard cost. |
| 5. | <b>Principles of Measurement</b><br>Specifies the ascertainment of <b>Employee Cost</b> , including gross pay, <b>bonuses</b> , remuneration to managerial <b>personnel</b> , separation costs, and treatment of <b>variances</b> . Excludes <b>imputed</b> costs.   |
| 6. | <b>Assignment of Costs</b><br>Outlines principles for assigning <b>Employee Costs</b> to cost objects, considering <b>traceability</b> and materiality. Covers <b>recruitment</b> costs, training costs, <b>overtime</b> premiums, and idle time costs.  |
| 7. | <b>Presentation</b>  |

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|    | Direct <b>Employee</b> Costs presented separately, while <b>indirect</b> costs are included in <b>overheads</b> related to functions like manufacturing, <b>administration</b> , and marketing. Cost statements should detail <b>resources</b> consumed, category-wise.  |
| 8. | <p><b>Disclosures</b></p> <p>Requires disclosure of <b>Employee</b> Cost attributable to <b>capital</b> works, separation costs, <b>abnormal</b> costs, penalties, subsidies, grants, <b>incentives</b>, payments to related parties, and costs in foreign exchange. <b>Disclosures</b> on changes in accounting <b>principles</b> are made where <b>material</b>, significant, and <b>quantifiable</b>.</p> |

## CAS - 8 Cost Accounting Standard on "Cost of Utilities"

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| 1. | <p><b>Introduction</b></p> <p>This standard deals with the <b>principles</b> and methods of determining the cost of <b>utilities</b>. This standard deals with the principles and methods of <b>classification</b>, measurement and assignment of cost of utilities, for <b>determination</b> of the cost of product or service and the <b>presentation</b> and disclosure in cost <b>statements</b>.</p>   |
| 2. | <p><b>Objective</b></p> <p>The objective of this standard is to bring <b>uniformity</b> and <b>consistency</b> in the principles and methods of determining the <b>cost</b> of utilities with reasonable <b>accuracy</b>.</p>   |
| 3. | <p><b>Scope</b></p> <p>This standard shall be applied to cost <b>statements</b> which require <b>classification</b>, measurement, assignment, <b>presentation</b> and disclosure of cost of utilities including those requiring <b>attestation</b>.</p> <p>For determining the cost of production to arrive at an <b>assessable</b> value of excisable utilities used for captive consumption, Cost Accounting <b>Standard 4</b> on Cost of Production for Captive <b>Consumption</b> shall apply. This standard shall not be <b>applicable</b> to the organisations primarily engaged in <b>generation</b> and sale of <b>utilities</b>. This standard does not cover issues related to the ascertainment and treatment of <b>carbon</b> credits, which shall be dealt with in a <b>separate</b> standard.</p> |

## CAS - 9 Cost Accounting Standard on "Packing Material Cost"

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| 1. | <p><b>Introduction</b></p> <p>This standard deals with the <b>principles</b> and methods of determining the <b>Packing Material</b> Cost. This standard deals with the principles and methods of <b>classification</b>, measurement and assignment of <b>Packing Material</b> Cost, for determination of the cost of <b>product</b>, and the <b>presentation</b> and disclosure in cost statements. <b>Packing Materials</b> for the purpose of this standard are classified into primary and secondary packing materials.</p> |
| 2. | <p><b>Objective</b></p>  |

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|    | The objective of this <b>standard</b> is to bring uniformity and <b>consistency</b> in the principles and methods of determining the packing <b>material</b> cost with <b>reasonable</b> accuracy.   |
| 3. | <p><b>Scope</b></p> <p>This standard should be applied to cost <b>statements</b>, which require <b>classification</b>, measurement, assignment, <b>presentation</b> and disclosure of Packing <b>Material</b> Cost including those requiring <b>attestation</b>.</p> |

## CAS - 10 Cost Accounting Standard on "Direct Expenses"

CAS-10 ensures a systematic approach to **Direct Expenses** accounting, promoting transparency and accuracy in cost reporting.

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| 1. | <p><b>Introduction</b></p> <p>CAS-10 focuses on determining, <b>classifying</b>, measuring, and assigning Direct Expenses. Pertains to the cost of a product or service and outlines <b>principles</b> for <b>presentation</b> and disclosure in cost <b>statements</b>.</p>  |
| 2. | <p><b>Objective</b></p> <p>Aims for <b>uniformity</b> and consistency in determining Direct <b>Expenses</b> with reasonable accuracy.</p>   |
| 3. | <p><b>Scope</b></p> <p>Applicable to cost statements requiring <b>classification</b>, measurement, assignment, and disclosure of <b>Direct</b> Expenses, including those needing attestation.</p>   |
| 4. | <p><b>Definitions</b></p> <p>Defines terms such as <b>Abnormal</b> Cost, Cost Object, Direct Employee Cost, Direct Expenses, Direct Material Cost, Imputed Costs, <b>Interest</b> and Finance Charges, Overheads, and <b>Standard</b> Cost.</p>   |
| 5. | <p><b>Principles of Measurement</b></p> <ul style="list-style-type: none"> <li>Emphasizes <b>traceability</b> for identification of Direct Expenses.</li> <li>Details the determination of Direct Expenses for <b>bought-out</b> resources, other than those incurred for such <b>resources</b>, and one-time payments.</li> <li>Addresses <b>amortization</b> of lump-sum expenses based on estimated <b>output</b> or benefit.</li> <li><b>Stresses</b> materiality, excluding <b>finance</b> costs from Direct <b>Expenses</b>, and avoiding imputed costs.</li> <li>Discusses treatment of standard costs, <b>variances</b>, subsidies, abnormal portions, penalties, and <b>recoveries</b>.</li> </ul> |
| 6. | <p><b>Assignment of Costs</b></p> <p>Assignment of Costs: Direct <b>Expenses</b> directly traceable to the cost <b>object</b> should be assigned to that object.</p>  |
| 7. | <p><b>Presentation</b></p>  |

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|    | Direct Expenses, if <b>material</b> , should be presented as a separate <b>cost</b> head with appropriate classification (e.g., subcontract <b>charges</b> , <b>royalties</b> ).  |
| 8. | <p><b>Disclosures</b></p> <ul style="list-style-type: none"> <li>• Specifies disclosure <b>requirements</b> related to the basis of distribution, <b>quantity</b> and rates, <b>standard</b> cost variances, expenses paid to <b>related</b> parties, foreign exchange transactions, subsidies/grants/<b>incentives</b>, credits/recoveries, abnormal portions, <b>penalties</b>, and <b>damages</b>.</li> <li>• Emphasizes material, significant, and <b>quantifiable</b> disclosures, which can be made in the body of the cost <b>statement</b>, footnotes, or as a separate <b>schedule</b>.</li> <li>• <b>Addresses</b> changes in cost accounting principles and methods with <b>material</b> effects.</li> </ul> |

## CAS - 11 Cost Accounting Standard on "Administrative Overheads"

CAS-11 ensures **transparency** and accuracy in accounting for **administrative** overheads, promoting standardized practices in cost accounting.

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| 1. | <p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>• CAS-11 outlines <b>principles</b> and methods for determining, <b>classifying</b>, measuring, and assigning administrative overheads.</li> <li>• Focuses on the cost of general <b>management</b> and <b>administration</b> activities in an <b>organization</b>.</li> </ul>   |
| 2. | <p><b>Objective</b></p> <p>Aims to establish <b>uniformity</b> and consistency in determining <b>administrative</b> overheads with reasonable <b>accuracy</b>.</p>   |
| 3. | <p><b>Scope</b></p> <p>Applicable to cost <b>statements</b> requiring classification, measurement, <b>assignment</b>, presentation, and disclosure of <b>administrative</b> overheads, including those needing <b>attestation</b>.</p>   |
| 4. | <p><b>Definitions</b></p> <p>Defines terms such as <b>Abnormal</b> Cost, Absorption of Overheads, <b>Administrative</b> Overheads, Cost Object, Imputed Costs, <b>Interest</b> and Finance Charges, <b>Normal</b> Capacity, and <b>Overheads</b>.</p>  |
| 5. | <p><b>Principles of Measurement</b></p> <ul style="list-style-type: none"> <li>• Administrative <b>overheads</b> represent the cost of shared <b>services</b>, infrastructure, and <b>general</b> management.</li> <li>• Involves employee costs, <b>utilities</b>, office supplies, legal <b>expenses</b>, and outside services.</li> <li>• Details the measurement of various elements within <b>administrative</b> overheads, including leased assets, <b>software</b> costs, and services procured from outside.</li> <li>• Stresses the <b>reduction</b> of subsidies/grants/incentives and excludes <b>abnormal</b></li> </ul> |

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|    | <p>administrative costs, fines, penalties, <b>damages</b>, and similar levies.</p> <ul style="list-style-type: none"> <li>Discusses credits/<b>recoveries</b>, treatment of changes in cost accounting <b>principles</b>, and emphasizes transparency in <b>disclosures</b>.</li> </ul>   |
| 6. | <p><b>Assignment of Cost</b></p> <ul style="list-style-type: none"> <li>Assigning <b>administrative</b> overheads involves <b>traceability</b> to a cost object in an economically feasible <b>manner</b>.</li> <li>Assignment principles include Cause and <b>Effect</b>, Benefits Received, and <b>rational</b> basis for general <b>management</b> costs.</li> </ul>   |
| 7. | <p><b>Presentation</b></p> <ul style="list-style-type: none"> <li><b>Administrative</b> overheads should be <b>presented</b> as a separate <b>cost</b> head in the cost statement.</li> <li>Element-wise <b>details</b> based on <b>materiality</b> should be presented.</li> </ul>   |
| 8. | <p><b>Disclosures</b></p> <ul style="list-style-type: none"> <li>Disclosures include the basis of <b>assignment</b>, inclusion of <b>imputed</b> costs, administrative overheads incurred in foreign exchange, transactions with related <b>parties</b>, subsidies/<b>grants</b>/incentives, <b>credits</b>/recoveries, abnormal portions, and penalties/<b>damages</b>.</li> <li>Emphasizes material, significant, and <b>quantifiable</b> disclosures, to be made in the body of the Cost Statement, <b>footnotes</b>, or as a separate schedule.</li> <li>Requires disclosure of <b>changes</b> in cost accounting principles with <b>material</b> effects.</li> </ul> |

## CAS - 12 Cost Accounting Standard on "Repairs and Maintenance"

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| 1. | <p><b>Introduction</b></p> <p>This standard deals with the <b>principles</b> and methods of determining the <b>Repairs</b> and Maintenance Cost.</p> <p>This standard deals with the principles and methods of <b>classification</b>, measurement and assignment of <b>Repairs</b> and Maintenance Cost, for determination of the cost of product or service, and the presentation and <b>disclosure</b> in cost statements.</p> |
| 2. | <p><b>Objective</b></p> <p>The objective of this standard is to bring <b>uniformity</b> and <b>consistency</b> in the principles and methods of determining the <b>Repairs</b> and Maintenance Cost with reasonable accuracy.</p>  |
| 3. | <p><b>Scope</b></p> <p>The standard should be applied to cost <b>statements</b>, which require <b>classification</b>, measurement, assignment, <b>presentation</b> and disclosure of Repairs and Maintenance Cost including those requiring <b>attestation</b>.</p>  |

## CAS - 13 Cost Accounting Standard on "Cost of Service Cost Centre"

|    |   |
|----|---|
| 1. | <p><b>Introduction</b></p> <p>This standard deals with the principles and <b>methods</b> of determining Cost of Service Cost Centres. This standard covers the service cost centre and excludes utilities and <b>repair</b> and maintenance costs dealt with in <b>CAS - 8 and CAS - 12</b> respectively. This standard deals with the principles and methods of <b>classification</b>, measurement and assignment of Cost of Service Cost <b>Centre</b>, for determination of the cost of product or service, and the presentation and disclosure in cost <b>statements</b>.</p> |
| 2. | <p><b>Objective</b></p> <p>The objective of this standard is to bring <b>uniformity</b> and <b>consistency</b> in the principles and methods of determining the Cost of Service Cost Centre with reasonable <b>accuracy</b>.</p>  |
| 3. | <p><b>Scope</b></p> <p>The standard should be applied to the <b>presentation</b> of cost statements, which require classification, <b>measurement</b> and assignment of Cost of Service Cost <b>Centres</b> including those requiring attestation.</p>  |

## CAS - 14 Cost Accounting Standard on "Pollution Control Cost"

|    |  |
|----|--|
| 1. | <p><b>Introduction</b></p> <p>This standard deals with the <b>principles</b> and methods of determining <b>Pollution Control Cost</b>. This standard deals with the principles and methods of <b>classification</b>, measurement and assignment of <b>Pollution Control Costs</b>, for determination of the cost of <b>product</b> or service, and the <b>presentation</b> and <b>disclosure</b> in cost statements.</p> |
| 2. | <p><b>Objective</b></p> <p>The objective of this standard is to bring <b>uniformity</b> and consistency in the principles and methods of determining the <b>Pollution Control Costs</b> with reasonable <b>accuracy</b>.</p>   |
| 3. | <p><b>Scope</b></p> <p>The standard should be applied to cost <b>statements</b>, which require classification, measurement, <b>assignment</b>, presentation and disclosure of <b>Pollution Control Costs</b> including those requiring attestation.</p>  |

## CAS - 15 Cost Accounting Standard on "Selling and Distribution Overheads"

|    |   |
|----|---|
| 1. | <p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>CAS-15 focuses on determining <b>principles</b> and methods for <b>Selling</b> and Distribution Overheads.</li> <li>Deals with classification, measurement, assignment, and <b>presentation</b> of these overheads for determining the cost of <b>sales</b> of products or services.</li> </ul> |
| 2. | <p><b>Objective</b></p>   |

|    |  |
|----|--|
|    | Aims to bring uniformity and <b>consistency</b> in determining <b>Selling</b> and <b>Distribution</b> Overheads with reasonable accuracy.  |
| 3. | <p><b>Scope</b></p> <p>Applicable to cost statements requiring <b>classification</b>, measurement, assignment, presentation, and disclosure of Selling and Distribution Overheads, including those needing <b>attestation</b>.</p>   |
| 4. | <p><b>Definitions</b></p> <p>Provides definitions for terms like <b>Abnormal Cost</b>, Absorption of Overheads, Cost <b>Object</b>, Distribution Overheads, Imputed Costs, <b>Indirect</b> Expenses, Marketing Overheads, Selling Overheads, and <b>Overheads</b>.</p>   |
| 5. | <p><b>Principles of Measurement</b></p> <ul style="list-style-type: none"> <li>• Selling and <b>Distribution</b> Overheads comprise the cost of resources consumed in related activities.</li> <li>• Resources procured from outside are determined at invoice or <b>agreed</b> price, net of applicable discounts, <b>taxes</b>, and duties.</li> <li>• Post-sales costs like <b>warranty</b> and after-sales <b>service</b> estimated reasonably.</li> <li>• <b>Excludes</b> imputed costs, abnormal costs, demurrage or detention charges, and penalties from Selling and <b>Distribution</b> Overheads.</li> <li>• Reduction of subsidies/grants/<b>incentives</b> and deduction of credits/recoveries are considered.</li> <li>• Encourages <b>transparency</b> in the disclosure of changes in cost accounting <b>principles</b>.</li> </ul> |
| 6. | <p><b>Assignment of Cost</b></p> <ul style="list-style-type: none"> <li>• Directly traceable <b>Selling</b> and Distribution Overheads assigned to relevant products or services.</li> <li>• Transportation cost follows <b>CAS-5</b> principles when relevant.</li> <li>• Assignment <b>principles</b> include Cause and Effect and Benefits <b>Received</b>.</li> </ul>  |
| 7. | <p><b>Presentation</b></p> <ul style="list-style-type: none"> <li>• Selling and Distribution Overheads presented as a <b>separate</b> cost head in the cost statement.</li> <li>• Allows the use of the term "<b>Marketing</b> Overheads" instead of "<b>Selling</b> and Distribution Overheads."</li> <li>• Element-wise details presented if <b>material</b>.</li> </ul>   |
| 8. | <p><b>Disclosures</b></p> <ul style="list-style-type: none"> <li>• Disclosures include the basis of <b>distribution</b>, Selling and Distribution Overheads in <b>foreign</b> exchange, services to related parties, subsidies/grants/<b>incentives</b> received, credits/recoveries, penalties/<b>damages</b>.</li> <li>• <b>Disclosures</b> made where material and significant, in the body of the Cost Statement,</li> </ul>   |

|    |   |
|----|---|
|    | <p>footnotes, or a separate <b>schedule</b>.</p> <ul style="list-style-type: none"> <li>Any change in cost accounting principles disclosed if <b>material</b>, with indication if the effect is not wholly or partly <b>ascertainable</b>.</li> </ul> |
| 9. | <p><b>Effective Date</b></p> <p>Effective Date: <b>CAS-15</b> is effective from the period commencing on or after 1st April 2013, for preparing and <b>certifying</b> General Purpose Cost Accounting <b>Statements</b>.</p>                          |

## CAS - 16 Cost Accounting Standard on "Depreciation and Amortisation"

|    |  |
|----|--|
| 1. | <p><b>Introduction</b></p> <p>This standard deals with the principles and methods of determining <b>Depreciation</b> and <b>Amortisation</b> Cost.</p> <p>This standard deals with the <b>principles</b> and methods of measurement and <b>assignment</b> of <b>Depreciation</b> and Amortisation for determination of the cost of <b>product</b> or service, and the presentation and disclosure in cost <b>statements</b>.</p> |
| 2. | <p><b>Objective</b></p> <p>The objective of this <b>standard</b> is to bring <b>uniformity</b> and consistency in the principles and methods of determining the Depreciation and <b>Amortisation</b> with reasonable accuracy.</p>   |
| 3. | <p><b>Scope</b></p> <p>This standard shall be applied to cost <b>statements</b> which require measurement, assignment, presentation and <b>disclosure</b> of Depreciation and <b>Amortisation</b>, including those requiring <b>attestation</b>.</p>   |

## CAS - 17 Cost Accounting Standards on "Interest and Financing Charges"

|    |   |
|----|---|
| 1. | <p><b>Introduction</b></p> <p>This standard deals with the <b>principles</b> and methods of determining <b>Interest</b> and <b>Financing</b> Charges.</p> <p>This standard deals with the principles and methods of <b>classification</b>, measurement and assignment of <b>Interest</b> and <b>Financing</b> Charges.</p>                                    |
| 2. | <p><b>Objective</b></p> <p>The objective of this standard is to bring <b>uniformity</b> and consistency in the principles, methods of determining and <b>assigning</b> the Interest and Financing Charges with reasonable <b>accuracy</b>.</p>  |
| 3. | <p><b>Scope</b></p> <p>This standard should be applied to cost <b>statements</b> which require classification, <b>measurement</b>, assignment, presentation and disclosure of <b>Interest</b> and Financing Charges including those requiring <b>attestation</b>. This standard does not deal with costs relating to risk management through derivatives.</p> |

## CAS - 18 Cost Accounting Standard on "Research and Development Costs"

|    |   |
|----|---|
| 1. | <p><b>Introduction</b></p> <p>This standard deals with the principles and methods of determining <b>Research</b> and Development Cost.</p> <p>This standard deals with the principles and methods of determining the Research and <b>Development</b> Costs and their classification, <b>measurement</b> and assignment for determination of the cost of <b>product</b> or service, and the presentation and disclosure in cost <b>statements</b>.</p> |
| 2. | <p><b>Objective</b></p> <p>The objective of this standard is to bring <b>uniformity</b> and consistency in the principles and methods of determining the Research and Development Costs with reasonable <b>accuracy</b> and <b>presentation</b> of the same.</p>  |
| 3. | <p><b>Scope</b></p> <p>This standard should be applied to cost statements that require <b>classification</b>, measurement, <b>assignment</b>, presentation and disclosure of Research and Development Costs including those requiring <b>attestation</b>.</p>   |

## CAS - 19 Cost Accounting Standard on "Joint Costs"

|    |   |
|----|---|
| 1. | <p><b>Introduction</b></p> <p>CAS-19 addresses the principles and methods for <b>measuring</b> and assigning Joint Costs, along with their <b>presentation</b> and disclosure in cost statements.</p>   |
| 2. | <p><b>Objective</b></p> <p>Aims to achieve uniformity and <b>consistency</b> in determining and assigning <b>Joint</b> Costs with reasonable accuracy.</p>  |
| 3. | <p><b>Scope</b></p> <p>Applicable to cost statements requiring classification, <b>measurement</b>, assignment, presentation, and <b>disclosure</b> of Joint Costs, including those requiring attestation.</p>   |
| 4. | <p><b>Definitions</b></p> <p>Provides <b>definitions</b> for terms such as By-Product, Cost Object, <b>Imputed</b> Cost, Joint Costs, Joint Product, Scrap, <b>Split</b> off Point, and Waste.</p>  |
| 5. | <p><b>Principles of Measurement</b></p> <ul style="list-style-type: none"> <li>• Measurement principles for <b>Joint</b> Costs up to the split-off point align with other cost accounting standards.</li> <li>• Costs incurred after the <b>split</b>-off point for each <b>Joint</b>/By-Product are measured based on resources consumed.</li> <li>• Further processing costs include <b>direct</b> and <b>indirect</b> costs.</li> <li>• Cost of processing by outside parties determined at <b>invoice</b> or agreed price, including</li> </ul> |

|    |   |
|----|---|
|    | <p>duties and taxes, net of applicable <b>discounts</b>, taxes, duties, and other attributable <b>expenditures</b>.</p> <ul style="list-style-type: none"> <li>Realized or realizable value of <b>scrap</b> or waste <b>deducted</b> from the cost of Joint Product.</li> <li>Any Subsidy/Grant/<b>Incentive</b> related to Joint Product/<b>By-Product</b> reduces the <b>ascertainable</b> cost.</li> <li>Penalties and <b>damages</b> paid to authorities or third <b>parties</b> not included in the cost.</li> </ul> |
| 6. | <p><b>Assignment</b></p> <ul style="list-style-type: none"> <li>Joint costs assigned to <b>Joint</b> Products based on benefits received, using methods like Physical Units, Net <b>Realizable</b> Value at split-off point, or Technical Estimates.</li> <li><b>By-Product</b> value estimated using Net Realizable Value or Technical Estimates.</li> </ul>   |
| 7. | <p><b>Presentation</b></p> <p>Cost statement presents <b>element</b>-wise costs of products produced <b>jointly</b> and the assigned value to <b>By-Products</b>.</p>   |
| 8. | <p><b>Disclosures</b></p> <ul style="list-style-type: none"> <li>Disclosures include the basis of Joint costs <b>allocation</b>, value assigned to <b>By-Products</b>, and any changes in cost accounting <b>principles</b> affecting Joint/<b>By-Products</b>.</li> <li>Material, significant, and <b>quantifiable</b> disclosures made in the body of cost statements, <b>footnotes</b>, or separate schedules.</li> </ul>  |
| 9. | <p><b>Effective Date</b></p> <p>CAS-19 effective from the period commencing on or after a <b>specified</b> date for preparing and certifying <b>General Purpose Cost Accounting Statements</b>.</p>   |

## CAS - 20 Cost Accounting Standard on "Royalty and Technical Know-How Fee"

|    |   |
|----|---|
| 1. | <p><b>Introduction</b></p> <p>This standard deals with the principles and methods of determining the amount of <b>Royalty</b> and <b>Technical</b> Know- How Fee.</p> <p>This standard deals with the principles and methods of <b>classification</b>, measurement and assignment of the amount of <b>Royalty</b> and Technical Know-How Fee, for determination of the cost of product or service, and their presentation and <b>disclosure</b> in cost statements.</p> |
| 2. | <p><b>Objective</b></p> <p>The objective of this standard is to bring <b>uniformity</b> and consistency in the principles and methods of determining the amount of <b>Royalty</b> and <b>Technical</b> Know-How Fee with reasonable <b>accuracy</b>.</p>  |
| 3. | <p><b>Scope</b></p>   |

This standard should be applied to cost **statements**, which require classification, measurement, assignment, **presentation** and disclosure of the amount of **Royalty** and Technical Know-How Fee including those requiring **attestation**.

## CAS - 21 Cost Accounting Standard on "Quality Control"

|    |   |
|----|---|
| 1. | <p><b>Introduction</b></p> <p>CAS-21 addresses <b>principles</b> and methods for measuring, <b>assigning</b>, presenting, and disclosing Quality <b>Control</b> costs in cost statements.</p>   |
| 2. | <p><b>Objective</b></p> <p>Aims to bring <b>uniformity</b> and consistency in determining and assigning <b>Quality Control</b> costs with reasonable accuracy.</p>  |
| 3. | <p><b>Scope</b></p> <p>Applicable to cost statements requiring <b>classification</b>, measurement, assignment, <b>presentation</b>, and disclosure of <b>Quality Control</b> costs, including those needing attestation.</p>  |
| 4. | <p><b>Definitions</b></p> <p>Provides definitions for terms such as <b>Abnormal Cost</b>, Cost Object, Defectives, <b>Imputed Costs</b>, Quality, <b>Quality Control</b>, Quality Control Cost, Scrap, Waste, and <b>Spoilage</b>.</p>  |
| 5. | <p><b>Principles of Measurement</b></p> <ul style="list-style-type: none"> <li>• <b>Quality Control</b> cost incurred in-house includes the aggregate cost of <b>resources</b> consumed.</li> <li>• Costs procured from outside determined at <b>invoice</b> or agreed price, net of applicable discounts, taxes, and <b>duties</b>.</li> <li>• <b>Includes</b> costs of conformance to quality, namely <b>prevention</b> cost and appraisal cost.</li> <li>• Identification of <b>Quality Control</b> costs based on traceability.</li> <li>• Finance costs in connection with self-<b>generated</b> or procured resources excluded from Quality Control cost.</li> <li>• Quality Control costs exclude imputed <b>costs</b>.</li> <li>• Subsidies/Grants/<b>Incentives</b> related to Quality Control cost reduce the cost of the corresponding object.</li> <li>• Abnormal portions of Quality Control cost, <b>penalties</b>, and <b>damages</b> excluded from the total cost.</li> </ul> |
| 6. | <p><b>Assignment of Costs</b></p> <ul style="list-style-type: none"> <li>• Directly <b>traceable</b> Quality Control costs assigned to the respective <b>cost</b> object.</li> <li>• Assignment based on benefits <b>received</b>, apportioned to cost <b>objects</b> in proportion to the benefits.</li> </ul>   |
| 7. | <p><b>Presentation</b></p>  |

|    |   |
|----|---|
|    | If material, Quality Control cost presented as a <b>separate</b> cost head with suitable <b>classification</b> .  |
| 8. | <p><b>Disclosures</b></p> <ul style="list-style-type: none"> <li>Disclosures include the basis of <b>distribution</b> of Quality Control cost, quantity and cost of resources used, payments to related parties, <b>foreign</b> exchange costs, <b>abnormal</b> portions, and penalties and <b>damages</b> excluded.</li> <li>Made where <b>material</b>, significant, and <b>quantifiable</b>, in the body of the Cost Statement, footnotes, or separate schedules.</li> <li>Any changes in cost accounting principles affecting Quality Control costs disclosed, indicating the extent of <b>ascertainability</b>.</li> </ul> |

## CAS - 22 Cost Accounting Standard on "Manufacturing Cost"

|    |   |
|----|---|
| 1. | <p><b>Introduction</b></p> <p>This standard deals with the <b>principles</b> and methods of determining the Manufacturing Cost of <b>excisable</b> goods.</p> <p>This standard deals with the principles and methods of <b>classification</b>, measurement and assignment for determination of the <b>Manufacturing</b> Cost of excisable goods and the <b>presentation</b> and <b>disclosure</b> in cost statements.</p> |
| 2. | <p><b>Objective</b></p> <p>The objective of this standard is to bring <b>uniformity</b> and <b>consistency</b> in the principles and methods of determining the <b>Manufacturing</b> Cost of excisable goods.</p>   |
| 3. | <p><b>Scope</b></p> <p>This standard should be applied to cost <b>statements</b> which require classification, measurement, assignment, <b>presentation</b> and disclosure of <b>Manufacturing</b> Cost of excisable goods.</p>   |

## CAS - 23 Cost Accounting Standard on "Overburden Removal Cost"

|    |   |
|----|---|
| 1. | <p><b>Introduction</b></p> <p>The standard deals with the principles and methods of <b>measurement</b> and assignment of Overburden <b>Removal</b> Cost and the presentation and disclosure in cost statements.</p>       |
| 2. | <p><b>Objective</b></p> <p>The objective of this standard is to bring <b>uniformity</b>, consistency in the <b>principles</b>, methods of determining and assigning Overburden Removal Cost with reasonable accuracy.</p> |
| 3. | <p><b>Scope</b></p>   |

The standard shall be applied to cost **statements** which require classification, **measurement**, assignment, presentation and disclosure of Overburden **Removal** Cost including those requiring **attestation**.

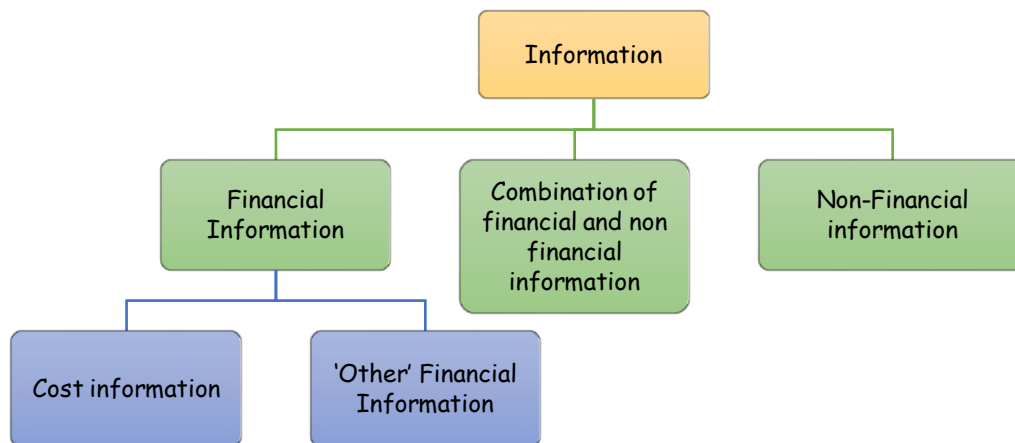
## CAS - 24 Cost Accounting Standard on "Treatment of Revenue in Cost Statements"

1. **Introduction**  
This standard deals with the principles and methods of classification, measurement, treatment and assignment of revenue and its presentation and disclosure in cost statements.
2. **Objective**  
The objective of this standard is to bring **uniformity** and consistency in the principles and methods for treatment of revenue in cost statements with **reasonable** accuracy.
3. **Scope**  
This standard shall be applied to cost **statements** which require classification, **measurement**, treatment, assignment, **presentation** and disclosure of revenue including those requiring **attestation**.

# CHAPTER 18: INTRODUCTION TO COST ACCOUNTING

## 1. Introduction

- ✓ **Accounting** is the process of **identifying, measuring and communicating** economic information to permit informed judgements and decisions by **users** of the information.
- ✓ Further, **accounting** is concerned with providing both **financial and non-financial** information that will help **decision-makers** to make appropriate decisions based on informed judgements.
- ✓ **Cost information** is a type of financial **information** that is related to the **cost** of the product or service. **Cost Accounting**, which is a branch of accounting, deals with the whole gamut of preparation and presentation of **cost information**.



## 2. Evolution of Cost Accounting

### Cost Accountancy

- ✓ **Cost Accountancy** is the academic **discipline** of cost accounting and is defined as 'the application of **costing** and cost accounting **principles**, methods and techniques to the science and art and practice of **cost control** and the ascertainment of **profitability** as well as presentation of information for the purpose of managerial **decision making**.
- ✓ **Four** particular **points** summarizes the above-mentioned definition.
  - Cost accountancy involves the **application** of **costing** and **cost accounting principles**.
  - This application serves a specific **purpose**: **cost control** and ascertainment of **profitability**.
  - Cost accountancy is a combination of **art** and **science**:
    - It is a **science** because it follows well-defined **rules** and **principles**.
    - It is an **art** because applying these principles effectively requires **skill**.

- It is also a **practice**, as it must be applied **continuously**, not just once.
- Cost accountancy mainly meets the cost **information** needs of management to support **decision making**.

## Cost Accounting

- ✓ **CIMA** Official Terminology defines cost accounting as the **process** of gathering of **cost** information and its attachment to **cost objects**, the establishment of **budgets**, standard costs and **actual** costs of operations, processes, activities or products; and the analysis of **variances**, profitability or the social use of **funds**.
- ✓ Thus, cost accounting **encompasses** the following:
  - One of the main purposes of cost accounting is to gather **cost information** related to cost **objects**. This information is then presented to management to assist in the decision-making process.
  - The nuances of cost accounting involve **cost accumulation**, which means calculating the cost of operations, processes, activities, or products. It also includes setting up **standard** costs and performing **variance** analysis.
  - **Profitability** computation, especially for **fixing** the selling price, is another key aspect of cost accounting.

## Financial Accounting and Cost Accounting - Comparison

| asis of Comparison | Financial Accounting   | Cost Accounting   |
|--------------------|--|---|
| Purpose            | Prepared to provide information about the overall results of business activities for a specific period to various users. | Aimed at providing information to management for effective <b>planning, control, and decision-making</b> .            |
| Maintained         | Maintained as per legal requirements like the <b>Companies Act</b> and <b>Income Tax Act</b> .                           | Maintained to fulfill the <b>internal requirements</b> of management.   |
| Recording          | Transactions are <b>classified, recorded, and analysed subjectively</b> (i.e., based on nature).                         | Transactions are <b>classified, recorded, and analysed objectively</b> based on the <b>purpose of cost incurred</b> . |

### 3. Important Cost Accounting Terms

#### A. Cost

- ✓ **Cost** - Is defined as the **expenditure** (actual or notional) incurred on or **attributable** to a given **product** or **service**. It can also be described as the resources that have been

sacrificed or must be **sacrificed** to attain a particular **objective**.

- ✓ **Historical cost** - Is the factual **cost** incurred for the **production** of goods or services, encompassing direct **material** costs, direct **labour** costs, and manufacturing **overheads** costs. It emphasizes the retrospective **nature** of the cost, reflecting the **real expenditures** made in the past to produce a particular **unit of output**.
- ✓ **Out-of-Pocket Cost** - this refers to the **actual expenditures** or payments made by an individual or a business for goods, services, or resources. Out-of-pocket **costs** can include **expenses** such as **direct** payments for goods, services, wages, and other tangible items.
- ✓ **Economic cost** - This is also referred as **opportunity cost**. It is the value of the **best alternative** course of action that was not chosen. It is what could have been accomplished with the **resources** used in the course of action if they were **employed** in the next best alternative. It represents **opportunities forgone**.
- ✓ **Sunk Cost** - Cost that has been **irreversibly** incurred or committed and cannot therefore be considered **relevant** to a **decision**. Sunk costs may also be termed **irrecoverable** costs.
- ✓ **Imputed Costs** - Imputed costs are **hypothetical** or **notional** costs, not involving **cash outlay** computed only for the purpose of decision making. In this respect, imputed costs are similar to **opportunity** costs. Interest on **funds** generated **internally**, payment for which is not actually made is an **example** of imputed cost.
- ✓ **Relevant Costs** - Relevant costs are costs which are relevant for a **specific purpose** or situation. In the context of decision making, only those costs are relevant which are pertinent to the **decision** at hand.
- ✓ **Avoidable Costs & Unavoidable Costs** - Avoidable Costs are those which under given conditions of **performance** efficiency should not have been incurred. Unavoidable Costs which are **inescapable** costs, which are essentially to be incurred, within the **limits** or norms provided for. It is the cost that must be incurred under a programme of business restriction. It is fixed in **nature** and **inescapable**
- ✓ **Controllable and Non-Controllable Costs** - Controllable Cost is that cost which is subject to **direct control** at some level of **managerial** supervision. Non-controllable Cost is the cost which is **not** subject to **control** at any level of **managerial** supervision.

### Cost Object

- ✓ A cost object is any item for which cost **measurement** is required, for example, a product or a customer. Examples of cost objects include:
  - A **product**
  - A **service** to a hotel guest
  - A **sales** territory
- ✓ **CIMA** Official Terminology states, A cost object is, for example, a product, service, centre, activity, customer or distribution channel in relation to which **costs** are

ascertained.

- ✓ **GACAP** defines a cost **object** as an activity, contract, cost centre, customer, process, product, project, service or any other object for which **costs** are **ascertained**

### Cost Unit

- ✓ Cost Unit is a device for the purpose of breaking up or separating costs into **smaller sub divisions** attributable to products or services.
- ✓ **CIMA** official Terminology defines a cost unit as a unit of product or service in relation to which costs are ascertained. Cost unit should be **appropriate** to the type of business.
- ✓ Alternatively, some items of **costs** may be charged **directly** to a cost unit, for example direct **materials** and direct **labour** costs.

| Business               | Appropriate Cost Unit        |
|------------------------|------------------------------|
| Car manufacturer       | Particular brand of car      |
| Cigarette manufacturer | Packet/ piece of cigarette   |
| Builder                | Particular building /Flat    |
| Audit company          | Audit File / Chargeable hour |

### Composite Cost Unit

- ✓ Cost Unit is a device for the purpose of **breaking up** or separating **costs** into smaller sub divisions attributable to products or services.
- ✓ **CIMA** official Terminology defines a cost unit as a unit of **product** or **service** in relation to which costs are ascertained. Cost unit should be **appropriate** to the type of business.
- ✓ Alternatively, some items of costs may be charged directly to a cost unit, for example direct **materials** and direct **labour** costs.

| Business                | Composite Cost Unit |
|-------------------------|---------------------|
| Hospital                | Patient - Day       |
| Transport (Freight)     | Tonne - kilometre   |
| ✓ Transport (Passenger) | Passenger -KM       |

### Cost Centre

- ✓ Cost centres are **collecting** places for **costs** before they are further **analysed**. For cost accounting purposes, **departments** are termed cost **centres** and the product produced by an **organisation** is termed the cost unit.
- ✓ Cost Centre and Cost Object is the **logical** sub-unit for **collection** of cost. Cost Centre may

be of **two** types **personal** and **impersonal** cost centres. Personal cost centre consists of a person or a group of **persons**. Cost centres which are not personal cost centres are **impersonal** cost centres. Again Cost centres may be divided into broad types i.e. **Production** Cost Centres and **Service** Cost Centres.

- ✓ **Production** Cost Centres are those which are engaged in **production** like Machine shop, Welding shop, Assembly shop etc.
- ✓ **Service** Cost centres are for rendering service to **production** cost centre like Power house, Maintenance, Stores, Purchase office etc.
- ✓ Cost centre is often referred as a **responsibility** centre whose managers are normally accountable for only those costs that are under their control, also known as **expense centres**.

### Responsibility Centre

- ✓ Responsibility Center refers to a **particular segment** or unit of an organization for which a particular manager, employee, or department is held **responsible** and **accountable** for its business goals and objectives. It refers to the part of the company where a manager has **authority** and **responsibility**. A responsibility center is a **functional** entity within a business that tends to have its own goals and objectives, policies, and procedures, thereby giving **managers** specific responsibility for **revenues**, expenses incurred, **funds invested**, etc.

### Conversion Cost

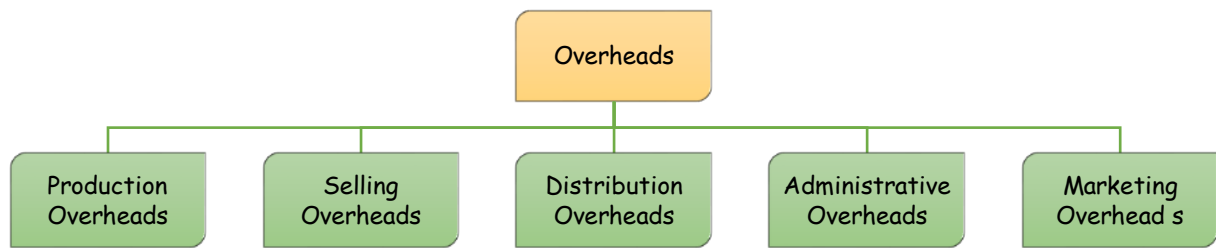
- ✓ This term is defined as the **sum** of direct **wages**, direct **expenses** and **overheads** costs of converting raw material to the finished products or converting a material from one stage of production to **another stage**.
- ✓ **CIMA** official terminology defines **conversion cost** as cost of converting **material** into finished **product**, typically including direct **labour**, direct **expense** and production **overheads**.

### Overheads Cost

- ✓ An item of **expense/cost** which is **not** directly **traceable** to the product
- ✓ **CIMA** official terminology defines **overheads** cost as expenditure on labour, materials or services that **cannot** be economically **identified** with a specific saleable cost **unit**.
- ✓ The overheads expenditure is **identified** under a particular head **based** on the purpose of the expenditure based on the **functions** that are accomplished by the expenditure incurred. The functional classification overheads are given as under.

## Types of Overheads Cost

- ✓ **Production Overheads:** Indirect costs involved in the **production** of a product or in rendering service.
- ✓ **Administrative Overheads:** Cost of all activities relating to **general management** and administration of an entity.
- ✓ **Distribution Overheads:** Distribution overheads, also known as **distribution costs**, are the costs incurred in **handling** a product or service from the time it is ready for **dispatch** or **delivery** until it reaches the ultimate consumer including the units receiving the product or service in an inter-unit transfer.
- ✓ **Selling Overheads:** Selling overheads are the expenses related to **sale** of **products** or services and include all indirect expenses incurred in **selling** the products or services.
- ✓ **Marketing overheads:** Marketing Overheads comprise of **selling** overheads and **distribution** overheads.



## Cost Allocation

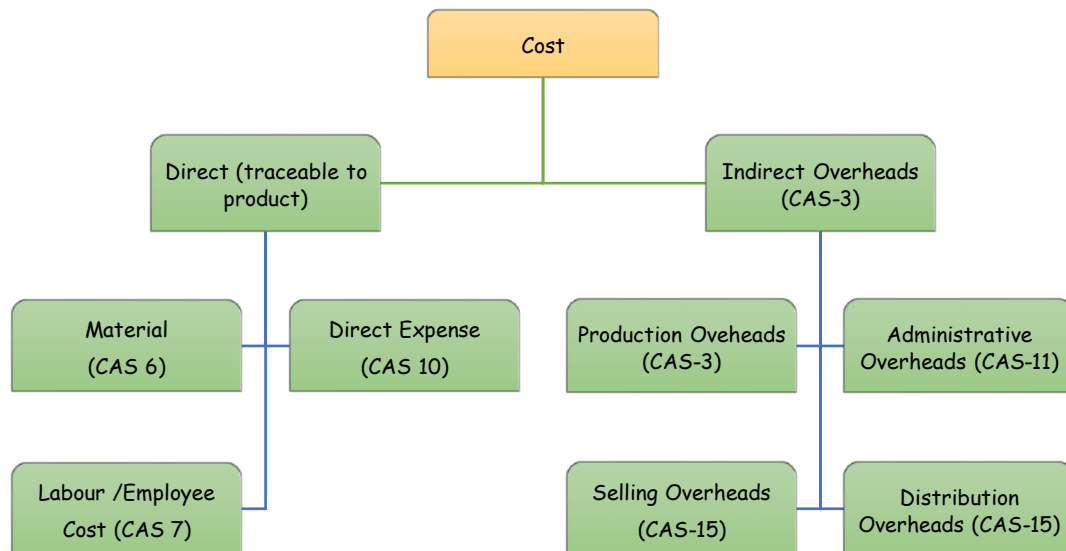
- ✓ When items of cost (overheads) are **identifiable directly** with some products or departments such costs are charged to such cost centres. This process is known as **cost allocation**.
- ✓ Wages paid to workers of **service department** can be allocated to the particular department. Indirect materials used by a particular department can also be **allocated** to the department.
- ✓ Cost allocation calls for **two** basic factors -
  - **Concerned** department/product should have caused the cost to be incurred
  - Exact **amount** of cost should be computable.

## Cost Apportionment

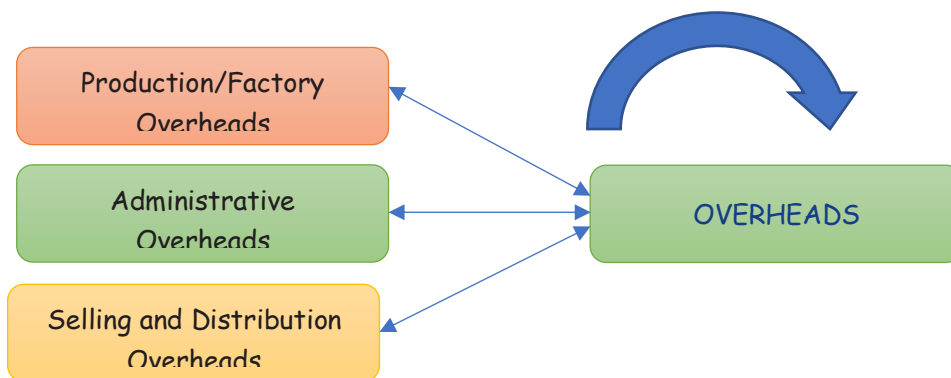
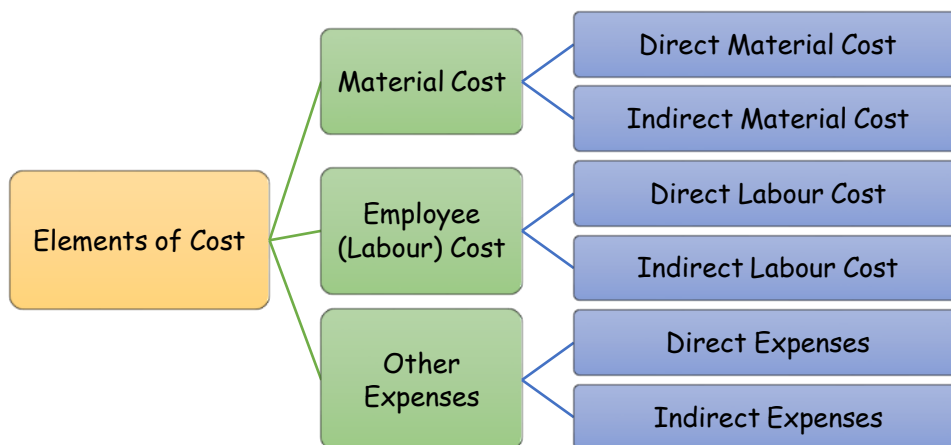
- ✓ When items of cost (overheads) **cannot** be directly charged to or **accurately** identifiable with any cost centres, they are **prorated** or distributed amongst the cost centres on some **predetermined** basis. This method is known as **cost apportionment**.

## 4. Elements of Cost

- Costs are either direct (**traceable** to the cost unit) or **indirect**, referred as overheads (not traceable to the product) and thus has to be **absorbed** to the product on the basis of some **pre-determined** basis. This is briefly discussed in the previous section.



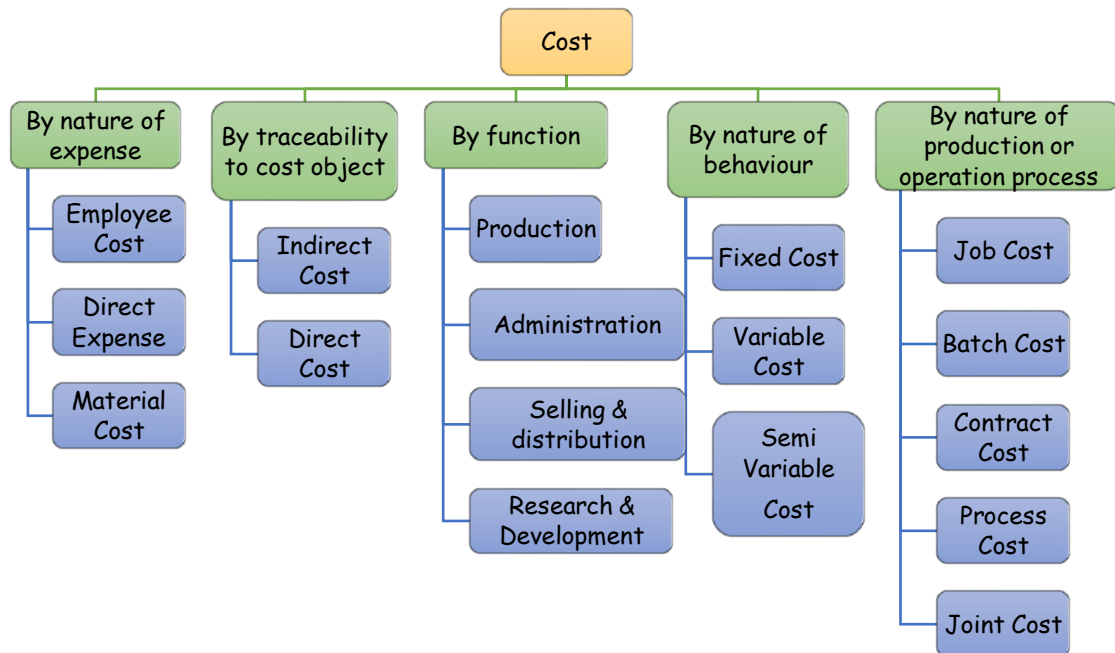
- Raw materials** are converted into finished products by a **manufacturing concern** with the help of labour, plants etc. The elements that constitute the cost of manufacturing are known as **elements of cost**.



Prime Cost = Direct Material Cost + Direct Labour (Employee) + Direct Expenses

## 5. Classification of Cost

- ✓ **Cost Classification** is the process of **segregating** the company's **costs** into **different** categories that gives a fair idea to the decision-maker about the **spending pattern**.
- ✓ Thus, **two type** of classification (logical groups) is recommended
  - **Subjective** classification (classification on the basis of **nature**)
  - **Objective** classification (on the basis of **purpose**)



### Classification by Nature of Expense

- ✓ **Material** - **Material** Costs are cost of materials used for the **purpose** of **production** of a product or rendering of a **service**, net of trade discounts, rebates, taxes and duties refundable that can be **quantified** with reasonable **accuracy**.
- ✓ **Employee** - Employee Costs are consideration, including **benefits** paid or payable to **employees**, permanent or temporary, for the purpose of production of a product or rendering of a service.
- ✓ **Expenses** - Expenses are costs **other** than **material** cost and **employee** cost for the purpose of **production** of a product or rendering of a service. (example - cost of **utilities**, payment for bought out services, job **processing** charge)

### Classification by traceability of the cost to a cost object

- ✓ **Direct cost** - If a cost can be assigned to a cost object in an **economically** feasible way, it shall be termed as **direct** to that cost object. These are of three types

- **Direct material cost** - Direct Material Costs are the cost of **materials** which can be assigned to a cost object in an **economically feasible** way.
  - **Direct employee cost** - Direct Employee Cost are **employee** costs, which can be assigned to a cost object in an **economically feasible** way.
  - **Direct expenses** - Direct Expenses are expenses **except** direct **material** and direct **employee** cost which can be assigned to a **cost object**.
- ✓ **Indirect cost** - if a cost is **not identifiable** as a direct cost then it is referred as indirect cost. It comprises of the following.
- **Indirect material** - Indirect Material Costs are cost of **materials**, which **cannot** be directly assigned to a particular cost object in an economically feasible way
  - **Indirect employee cost** - Indirect Employee costs are **employee** costs, which **cannot** be **directly assigned** to a particular cost object in an economically feasible way.
  - **Indirect expenses** - Indirect Expenses are expenses, which **cannot** be directly assigned to a **particular** cost object in an economically feasible way.

#### Classification by Function

- ✓ Costs can be classified according the **functions** which are
- Production
  - Administration
  - Selling
  - Distribution
  - Research
  - Development

#### Classification by nature of behaviour of the cost

- ✓ Costs shall be classified based on behaviour in response to the **changes** in the **activity** levels such as, **fixed** cost, **variable** cost and **semi-variable** cost. Accordingly, costs are
- Fixed cost
  - Variable cost
  - Semi variable cost

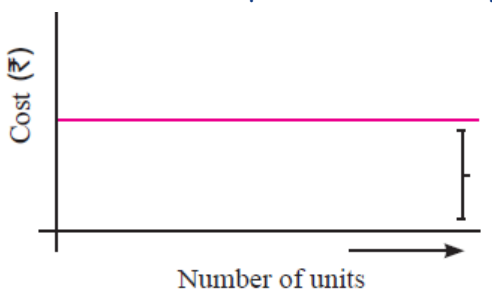
#### Classification by nature of production or operation process

- ✓ Costs shall also be classified on the basis of **nature** of **production** or **operation** process. Operation Cost shall be the cost a specific operation involved in production of goods or rendering of services. Accordingly, costs are
- **Job** cost

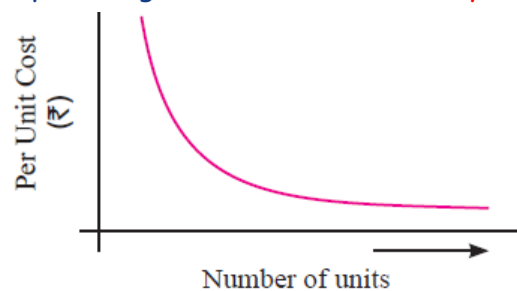
- **Batch cost**
- **Contract cost**
- **Process cost**
- **Joint costs** are the costs of common resources used for producing two or more products or **rendering** two or **more** services simultaneously

### Cost Behaviour Analysis

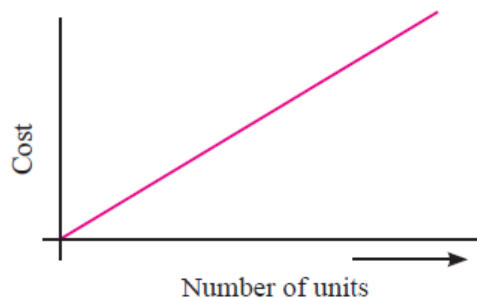
- ✓ Cost functions are **descriptions** of how a cost (e.g., material, labour, or overheads) changes with **changes** in the level of **activity** relating to that cost. For example, total **variable** costs will change in relation to **increased activity**, while **fixed** costs will **remain the same**.
- ✓ **Fixed cost** - Fixed cost is referred as period and refers to a **cost** which is incurred for a particular period. It remains **fixed** over a relevant range. **GACAP** defines fixed costs as costs which do **not** vary with the change in the volume of activity. Fixed indirect costs are termed fixed overheads.
- ✓ Total fixed cost remains while per unit fixed cost reduces as number of units increases
  - **Variable cost** - The variable cost is often **referred** as the **product** cost. The **per unit** variable cost remains **fixed** over the relevant range.
  - **Semi-variable cost** - This are **dual** natured. A part of these cost remains fixed while the other part behaves as a variable cost. **CIMA** official terminology defines a semi-variable cost as a cost containing both **fixed** and **variable** components and thus partly **affected** by a change in the level of **activity**.



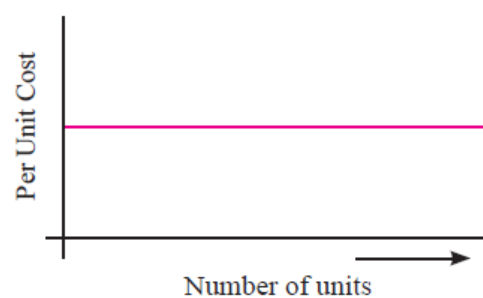
(i) : Total Fixed Cost



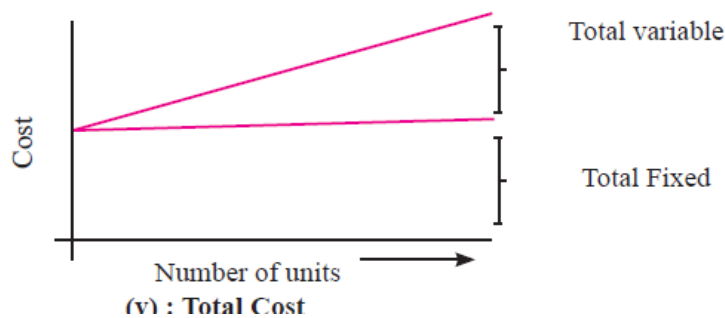
(ii) : Fixed Cost per unit



(iii) : Total Variable Cost



(iv) : Variable Cost Per unit



### Cost Absorption

- ✓ Ultimately the **indirect** costs or overheads as they are commonly known, will have to be **distributed** over the final products so that the charge is complete. This process is known as cost absorption, meaning thereby that the **costs absorbed** by the production during the period.
- ✓ Usually any of the following methods are adopted for cost absorption:
  - Percentage of direct **material** cost
  - Percentage of direct **labour** cost
  - Percentage of **prime** cost
  - Direct **labour hour** rate
  - **Machine hour** rate.

### Under or Over Absorption of Overheads

- ✓ Overheads absorption rates are usually **predetermined**, that is, they are calculated in advance of the period over which they will be used.
- ✓ But this gives rise to the problem of **under/over** absorption as the **actual** figures for overheads and for the **absorption** base are likely to be different from the estimates used in calculating the absorption **rate**.
- ✓ When this happens, the overheads will be either under absorbed or over absorbed. If the **actual** overheads incurred is **higher** than the **overheads** absorbed, then overheads is **under** absorbed and if the actual overheads incurred is **lower** than the overheads absorbed then the overheads is **over** absorbed.

## 6. Core Theory Topics

### Introduction to Cost Information, Accounting Users, and its Quality

1. Cost Information (from Cost Accounting System)  
Cost accounting provides **cost information**, which includes:
  - a. **Unit cost** of a product, work, or service

|    |  |
|----|--|
|    | <p>b. Different <b>elements of cost</b> for a department, factory, or other <b>cost object</b></p> <p>c. <b>Waste volume</b> and <b>technological losses</b></p> <p>d. <b>Activity-related costs</b> → Used for <b>cost analysis</b> and <b>decision making</b></p>  |
| 2. | <p><b>Users of Financial Information</b></p> <p>Accounting is the <b>language of business</b> used to communicate with <b>stakeholders</b>. These include:</p> <ul style="list-style-type: none"> <li>✓ <b>Internal users</b>: managers, shareholders, employees, creditors</li> <li>✓ <b>External users</b>: potential investors, government Each group has specific <b>information needs</b></li> </ul>  |
| 3. | <p><b>Internal vs External Reporting</b></p> <ul style="list-style-type: none"> <li>✓ <b>Management accounting</b> provides information to <b>internal users</b> for better decisions and improving <b>efficiency and effectiveness</b> of operations</li> <li>✓ <b>Financial accounting</b> provides information to <b>external users</b> → Management accounting = <b>Internal Reporting</b> → Financial accounting = <b>External Reporting</b></li> </ul>   |
| 4. | <p><b>Quality of Financial Information</b></p> <p>Effective decisions depend on <b>quality financial information</b>.</p> <p><b>Example</b>: During the COVID-19 lockdown:</p> <ul style="list-style-type: none"> <li>✓ <b>Mr. Keshubhai</b> adapted quickly, used <b>online transactions</b> and <b>home delivery</b></li> <li>✓ <b>Mr. Bikram</b> waited, showing delayed decision-making → Good decisions rely on <b>timely and relevant information</b></li> </ul>   |
| 5. | <p><b>Purpose of Accounting</b></p> <p>The main purpose of accounting is to generate <b>financial information</b> for both <b>internal and external users</b>.</p> <ul style="list-style-type: none"> <li>✓ Internal users → use <b>management accounting</b> for better decisions and operations</li> <li>✓ External users → use <b>financial accounting</b> for evaluation and compliance</li> </ul>   |
| 6. | <p><b>Cost Accounting vs Management Accounting</b></p> <p>Though often used <b>interchangeably</b>, they differ in <b>scope and purpose</b>:</p> <ul style="list-style-type: none"> <li>✓ <b>Cost Accounting</b>: Focuses on <b>cost accumulation</b>, <b>sale price fixation</b>, <b>inventory valuation</b>, and <b>profit determination</b>.<br/>Useful for <b>external reporting</b>.</li> <li>✓ <b>Management Accounting</b>: Focuses on providing <b>relevant information</b> for <b>planning</b>, <b>decision-making</b>, <b>control</b>, and <b>performance evaluation</b>. → In practice, the distinction is often <b>blurred</b>, and terms may be used <b>synonymously</b></li> </ul> |

#### Evolution of Cost Accounting

|    |   |
|----|---|
| 1. | <p>1494 - Pre-Industrial Revolution</p> <ul style="list-style-type: none"> <li>✓ <b>Double entry system</b> started in 1494.</li> </ul> |
|----|---|

|    |   |
|----|---|
|    | <ul style="list-style-type: none"> <li>✓ Cost accounting was a <b>minor part</b> of <b>financial accounting</b>.</li> </ul>   |
| 2. | <b>Post-Industrial Revolution</b> <ul style="list-style-type: none"> <li>✓ Growing need for <b>internal operation data</b>.</li> <li>✓ Industries like <b>textile mills</b> and <b>railroads</b> developed <b>internal procedures</b>.</li> <li>✓ Focus was on <b>direct labour</b> and <b>direct material</b> (i.e., <b>prime costs</b>).</li> </ul>   |
| 3. | <b>1880s - Mass Production Era</b> <ul style="list-style-type: none"> <li>✓ <b>Mass production and distribution</b> firms adopted <b>internal reporting systems</b> from railroads.</li> <li>✓ Emphasis still limited to <b>prime costs</b>.</li> </ul>   |
| 4. | <b>1880-1925 - Scientific Management Movement</b> <ul style="list-style-type: none"> <li>✓ Rise of <b>diversified corporations</b> like <b>Du Pont</b> and <b>General Motors</b>.</li> <li>✓ Accountants converted <b>physical standards</b> to <b>cost standards</b> for <b>variance analysis</b> and <b>control</b>.</li> </ul>   |
| 5. | <b>World War I &amp; II</b> <ul style="list-style-type: none"> <li>✓ Cost accounting gained <b>social and strategic importance</b>.</li> <li>✓ <b>Cost-plus contracts</b> introduced (cost + profit basis).</li> <li>✓ <b>Cost estimation</b> became critical during <b>defence contracts</b>.</li> </ul>   |
| 6. | <b>Post-World War II - India</b> <ul style="list-style-type: none"> <li>✓ Early cost accountants in India qualified from <b>ICMA (now CIMA), London</b>.</li> <li>✓ During WWII, need for local professional body was felt.</li> <li>✓ In <b>1959</b>, <b>ICAI (CMA)</b> established under <b>Cost and Works Accountants Act</b>.</li> <li>✓ In <b>1968</b>, <b>Cost Audit</b> introduced under <b>Section 233(B)</b> (now <b>Section 148</b> of the Companies Act, 2013).</li> </ul> |
| 7. | <b>Note on Terminology</b> <ul style="list-style-type: none"> <li>✓ Terms like <b>Cost Accounting</b>, <b>Costing</b>, and <b>Cost Accountancy</b> are often used <b>interchangeably</b>, but there are <b>subtle differences</b>.</li> </ul>   |

### Objectives of Cost Accounting

|    |  |
|----|--|
| 1. | <b>Ascertain cost per unit</b> (e.g., per kg, meter, litre, ton, etc.)   |
| 2. | <b>Fixation of selling price</b> by determining production cost  |
| 3. | Facilitate <b>cost control</b> and <b>cost reduction</b>   |
| 4. | Analyse <b>profitability division-wise, activity-wise, unit-wise</b>   |
| 5. | Identify <b>wastages, inefficiencies, and gaps</b> in production/service processes   |
| 6. | Present <b>relevant cost data</b> to management for <b>decision-making</b> → Decision-making is <b>crucial</b> to the <b>strategic success/failure</b> of any organization |

## Scope of Cost Accounting

|    |   |
|----|---|
| 1. | <b>Strategic Importance</b> <ul style="list-style-type: none"> <li>✓ Directly affects <b>operational success/failure</b></li> <li>✓ A well-designed system ensures <b>strategic success</b></li> </ul>  |
| 2. | <b>Cost Book-keeping</b> <ul style="list-style-type: none"> <li>✓ Recording all incurred costs and allocating them to <b>departments, products, services</b></li> <li>✓ Done using <b>double entry system</b></li> </ul>                                    |
| 3. | <b>Cost Ascertainment</b> <ul style="list-style-type: none"> <li>✓ Determine cost of <b>products, processes, jobs, and services</b></li> <li>✓ Basis for <b>pricing, planning, and control</b></li> </ul>   |
| 4. | <b>Cost Analysis</b> <ul style="list-style-type: none"> <li>✓ Identify reasons for <b>cost variance</b> from budget</li> <li>✓ Helps in <b>responsibility fixation</b> for cost increases</li> </ul>  |
| 5. | <b>Cost Comparisons</b> <ul style="list-style-type: none"> <li>✓ Compare costs across: <ul style="list-style-type: none"> <li>▪ <b>Different technologies</b></li> <li>▪ <b>Products and services</b></li> <li>▪ <b>Time periods</b></li> </ul> </li> </ul> |
| 6. | <b>Cost Control</b> <ul style="list-style-type: none"> <li>✓ Analyze costs relative to <b>benefits</b></li> <li>✓ Check if current costs align with <b>pre-set standards</b></li> </ul>   |
| 7. | <b>Cost Reports</b> <ul style="list-style-type: none"> <li>✓ Prepare and present cost data in the form of <b>reports</b></li> <li>✓ Used by <b>management</b> for <b>planning, control, decision-making</b></li> </ul>                                      |
| 8. | <b>Cost Audit</b> <ul style="list-style-type: none"> <li>✓ Verify <b>accuracy</b> of cost records</li> <li>✓ Ensure proper <b>adherence</b> to principles and cost accounting <b>plans</b></li> </ul>   |

## Types of Cost Accounting Systems

| System                | Key Features  | Purpose / Use   |
|-----------------------|---|---|
| 1. Historical Costing | <ul style="list-style-type: none"> <li>✓ Costs are <b>ascertained after being incurred</b></li> <li>✓ Used for <b>post-mortem analysis</b> of actual costs</li> </ul>                                   | To determine <b>past costs</b> and analyze variances (if standard costs exist)  |
| 2. Absorption Costing | <ul style="list-style-type: none"> <li>✓ All <b>fixed and variable costs</b> are <b>absorbed</b> into cost units</li> <li>✓ Includes <b>fixed manufacturing costs</b> in inventory valuation</li> </ul> | Traditional method for <b>external reporting</b> and <b>inventory valuation</b> |

|  |   |  |
|--|---|--|
|  | <ul style="list-style-type: none"> <li>✓ Admin, selling, distribution costs treated as period costs</li> </ul>  |  |
| 3. 3. Direct Costing<br>(also called Marginal Costing) | <ul style="list-style-type: none"> <li>✓ Only variable costs (direct material, direct labour, variable overheads) are charged to products</li> <li>✓ Fixed costs are written off in the period they occur</li> <li>✓ Helps in contribution margin analysis</li> </ul> | Used for internal decision making (pricing, profitability, etc.)                 |
| 4. 4. Standard Costing                                 | <ul style="list-style-type: none"> <li>✓ Predetermined costs are set as standards</li> <li>✓ Variance analysis is done to compare actual with standard costs</li> </ul>   | Used for cost control, stock valuation, and sometimes for selling price fixation |
| 5. 5. Uniform Costing                                  | <ul style="list-style-type: none"> <li>✓ Not a costing method - Use of common costing principles across companies/units in same industry</li> <li>✓ Based on mutual agreement</li> </ul>  | Allows benchmarking, comparison, and elimination of inefficiencies               |

#### Essentials of a Good Cost Accounting System

|    |  |
|----|--|
| 1. | Tailor-made, simple, practical<br>System must suit the business needs and operations     |
| 2. | Accurate data<br>Inaccurate data will produce misleading outputs                         |
| 3. | Cooperation from departments<br>Needs support from all functional areas for success      |
| 4. | Cost-effective<br>Should pass cost-benefit analysis, not be too expensive                |
| 5. | Avoid unnecessary detail<br>Must not lose utility due to excessive complexity            |
| 6. | Phased implementation<br>Should use techniques like network analysis to phase rollout    |
| 7. | Management support<br>Management must believe in and support the system's implementation |

| Installation of a Cost Accounting System |  |
|--|--|
| 1.                                       | <p><b>Size of the Firm</b></p> <p>A larger firm generates <b>more complex and voluminous cost data</b>. The system must be able to <b>handle scale</b> and <b>supply accurate information</b> accordingly.</p>   |
| 2.                                       | <p><b>Manufacturing Process</b></p> <p>Different industries use different <b>production methods</b> (e.g., continuous, batch, job order). The system must adapt to the <b>type of production process</b>.</p>  |
| 3.                                       | <p><b>Nature &amp; Number of Products</b></p> <ul style="list-style-type: none"> <li>✓ <b>Single product</b>: costs are directly allocated</li> <li>✓ <b>Multiple products</b>: requires <b>allocation, apportionment, and overhead absorption</b> → More products = <b>more complex system</b></li> </ul> |
| 4.                                       | <p><b>Management Control Needs</b></p> <p>System should provide <b>relevant cost data</b> to <b>different levels</b> of management for <b>decision-making and control</b>.</p>   |
| 5.                                       | <p><b>Raw Materials</b></p> <p>Systems must account for:</p> <ul style="list-style-type: none"> <li>✓ <b>Type of materials used</b></li> <li>✓ <b>Spoilage/waste</b></li> <li>✓ <b>Material tracking and pricing</b></li> </ul>  |
| 6.                                       | <p><b>Organization Structure</b></p> <p>The system should <b>match the hierarchy and reporting structure</b> of the organization.</p>  |
| 7.                                       | <p><b>External Factors</b></p> <p>Compliance with <b>Cost Accounting Record Rules</b> and other <b>regulatory requirements</b> must be considered while designing the system.</p>  |

#### Advantages of a Cost Accounting System

| Advantage                          | Details  |
|------------------------------------|--|
| <b>Provides cost data</b>          | For <b>product costing, profitability, and inventory valuation</b>             |
| <b>Helps in decision making</b>    | Supplies relevant cost info for <b>internal control and managerial actions</b> |
| <b>Aids planning &amp; control</b> | Supports <b>budgeting, cost reduction, and performance monitoring</b>          |

| Limitations of Cost Accounting System |  |
|---------------------------------------|--|
| 1.                                    | <p><b>High Cost of Installation</b></p> <p>Setting up and operating a cost accounting system can be <b>expensive</b> and may <b>increase production cost</b>, though it enables <b>cost control</b> and <b>cost reduction</b> in the long run.</p> |
| 2.                                    | <p><b>Reconciliation Needed</b></p>  |

|    |   |
|----|---|
|    | Cost and financial accounts often show different results, requiring reconciliation statements.  |
| 3. | <p><b>Subjectivity &amp; Variation</b></p> <p>Cost accountants may differ in their approaches to:</p> <ul style="list-style-type: none"> <li>✓ Inclusion of costs</li> <li>✓ Valuation methods</li> <li>✓ Overhead treatment</li> </ul>   |
| 4. | <p><b>Inexactness</b></p> <p>Due to use of conventions, estimates, and approximations, cost data lacks precision. Some examples:</p> <ol style="list-style-type: none"> <li>a) Cost classification</li> <li>b) Material pricing (e.g., average cost, standard cost)</li> <li>c) Overhead apportionment</li> <li>d) Joint cost allocation</li> <li>e) Segregating semi-variable costs</li> </ol> |
| 5. | <p><b>Lack of Uniformity</b></p> <p>No standard format across organizations, making cost results non-comparable and often estimative in nature.</p>   |

### 1. Financial, Cost, and Management Accounting - A Comparative Study

| Aspect            | Financial Accounting   | Cost Accounting                                    | Management Accounting   |
|-------------------|--|--|---|
| 1. Purpose        | Reports overall financial performance to external stakeholders | Records and controls costs of production/processes | Assists internal management in decision making, planning, and control |
| 2. Focus Area     | Entire business results (profit/loss, assets/liabilities)      | Cost per unit, cost control, and efficiency        | Operational decisions and strategy                                    |
| 3. Users          | External: Shareholders, tax authorities, regulators, etc.      | Internal: Cost accountants, production team, etc.  | Internal: Managers, top executives                                    |
| 4. Standards Used | Follows GAAP and statutory norms                               | Based on internal methods and conventions          | No mandatory format; based on managerial needs                        |
| 5. Periodicity    | Prepared periodically (monthly, quarterly, annually)           | Done continuously along with production            | Done as needed for decision-making                                    |

|                   |  |   |  |
|-------------------|--|---|--|
| 6. Reporting      | External reporting focus               | Internal cost reports, reconciled with financial accounts | Performance reports, budgets, variance reports, etc. |
| 7. Nature of Data | Historical data of actual transactions | Historical & estimated cost data                          | Forecasts, budgets, and projections                  |

### 2. Segregation of Semi-Variable Costs

Semi-variable costs (also called **mixed costs**) include both **fixed and variable components**. For accurate cost analysis, these must be **segregated** using one of the following methods:

| Method   | Explanation  | Key Formula/Notes   |
|--|--|---|
| 1. Graphical Method                                  | Plot cost vs activity on a <b>scatter graph</b> and draw <b>line of best fit</b>   | - <b>Fixed Cost</b> = Y-intercept -<br><b>Variable Cost/unit</b> = Slope (gradient)   |
| 2. High-Low Method                                   | Use <b>highest and lowest</b> cost and output levels to estimate variable cost   | Variable cost per unit<br>$= \frac{\Delta \text{Cost}}{\Delta \text{Output}}$<br>Fixed Cost = Fixed Cost =<br>Total Cost – (VC/unit × Output) |
| 3. Linear Equation Method                            | Based on the equation:<br>$y = mx + c$<br>- $y$ = total cost<br>- $m$ = variable cost/unit<br>- $x$ = output<br>- $c$ = fixed cost | Use two equations (with 2 cost-output pairs) to solve for <b>m</b> and <b>c</b>   |
| 4. Least Squares Method ( <b>Simple Regression</b> ) | Statistical method using multiple data points to find <b>line of best fit</b>  | Steps:<br>✓ Calculate mean of X and Y<br>✓ Compute deviations from means<br>✓ Solve using regression formula                                  |

### 3. Summary: Three Pillars of Accounting Functionality

| Function                       | Purpose                           | Description                                    |
|--------------------------------|-----------------------------------|--|
| Documentation (Record Keeping) | Standardized forms & policies     | Ensures <b>accurate and controlled</b> records |
| Transaction Tracking           | Capture all business transactions | Occupies <b>major part</b> of accountant's job |

|                     |                           |   |
|---------------------|---------------------------|---|
| Financial Reporting | Present financial results | Includes <b>income statement, balance sheet, cash flow, etc.</b> , using <b>GAAP</b> or <b>national standards</b> |
|---------------------|---------------------------|---|

### Importance and Objectives of Cost Sheet

|    |  |
|----|--|
| 1. | <b>Determining Cost</b><br>The <b>primary objective</b> of a cost sheet is to calculate the <b>total cost</b> and <b>cost per unit</b> of a product <b>accurately</b> .                          |
| 2. | <b>Fixing Selling Price</b><br>It provides the <b>production cost</b> which acts as a base for <b>fixing the selling price</b> , ensuring proper pricing decisions.                              |
| 3. | <b>Cost Comparison</b><br>Enables <b>comparison</b> of <b>current cost per unit</b> with <b>previous costs</b> , helping to <b>identify cost increases</b> and take <b>corrective actions</b> .  |
| 4. | <b>Cost Control</b><br>By using an <b>estimated cost sheet</b> , businesses can <b>monitor and control</b> costs of <b>labour, materials, and overheads</b> during production.                   |
| 5. | <b>Decision-Making</b><br>The cost sheet serves as a <b>critical tool</b> for management decisions like: - <b>Make or buy</b> decisions - <b>Quoting tender prices</b> - <b>Pricing strategy</b> |





I've put my heart into crafting this material to guide you, but your dedication is what will truly bring it to life. Success is a team effort, and together, we can conquer Costing and crack this exam. You bring the determination, and I'll provide the direction— together, let's make it happen!"

Remember, a perfect 100/100 in Costing is soon a reality for you. \_\_\_\_\_ With ❤️ Ganesh \_\_\_\_\_

### Know your Faculty.

CA Ganesh Bharadwaj is a highly regarded faculty for Costing and Financial Management in CA & CMA courses, known for his engaging and student-friendly teaching style.

He has been recognized as one of the top performers in India in the subjects Costing & FM for an impressive score of 94% in his CA exams.

He has been on a mission to teach Costing & FM in simple English with crystal clear explanations and real-life examples, aiming for both exam success and conceptual understanding.

A firm believer in Conceptual Learning, his teaching philosophy aligns with his powerful quote: **"Stop Mugging Up. Start Learning."**