SYLLABUS
Class – B.Com I Year
Subject: Cost Accounting

Units	Content of Course
Unit 1	Principle of best utilization of resources in ancient Indian tradition Product costing in ancient business and economic models Relationship between business ethics and cost control. Meaning Scope and Advantages of Cost Accounting Difference between Cost Accounting and Financial Accounting Cost Accounting Standard Costing Records and Accounting Auditing Rules.
Unit 2	Material Costing: Procurement of materials, Inventory Management and Control, Inventory Accounting Cost price method LIFO, FIFO, HIFO, Áverage cost method, Inflated price method, Physical Verification, Slow and Non-moving Stock and Treatment of Losses. Scrap, Spoilage, Defective and Normal-Abnormal Wastage.
Unit 3	Labour costing: Accounting and control of labour cost, Time Keeping, Time Booking and Payroll, Overtime, Idle Time, Labour Turnovers and Fringe Benefits, Employee Cost Reporting, Methods of Wage Payments and Incentives Schemes - Halsey, Rowan, Taylor.
Unit 4	Overhead Expenses and Unit Costing: Classification allocation and absorption of Overhead Expenses, Under and Over Absorption, Capacity Level of Cost, treatment of certain items in costing like Interest on Capital, Packaging Expenses, Bad Debts, Research and Development Expenses, Calculation of unit costing and preparation of Cost Sheet, Job Costing.
Unit 5	Contract Costing: Contract Costing, Sub Contract Costing, Process Costing (excluding Process Losses), Joint and By-products.
Unit 6	Operating Cost Accounting: Transportation and hotel service costing, Integral and Non-Integral Cost Accounting, Reconciliation of cost accounting records with financial accounts.

Unit I

Principle of Best Utilization of Resources in Ancient Indian Tradition

The principle of resource utilization has been deeply ingrained in ancient Indian philosophy and economic systems. Ancient Indian texts, like the ***Arthashastra by Kautilya (Chanakya***) and the ***Manusmriti***, highlighted the importance of effective resource management. The following are key aspects of resource utilization in ancient Indian tradition:

1. **Sustainable Use of Resources**:

Ancient Indian culture emphasized a sustainable and balanced approach to resource use.

For example, the concept of "Dharma" (moral law) and "Artha" (prosperity) promoted using resources responsibly, ensuring that the needs of the present did not jeopardize future generations.

2. **Agriculture as the Backbone of Economy**:

Agriculture was central to the ancient Indian economy, with sustainable practices being crucial for optimal resource use. The ancient texts also recommended the prudent use of water, land, and labor in agriculture.

3. **Diversity of Resources**:

The emphasis was placed on diversification rather than over-reliance on a single resource. The system of trade (internal and external), such as through the Silk Route, indicated that multiple resources (textiles, spices, metals) were managed in a way to optimize their use for a diverse economy

4. **Efficient Labor Allocation:**

Ancient Indian texts also suggested ensuring that human resources (labor) were used effectively. This includes concepts from Kautilya's Arthashastra, which discussed the effective organization of labor forces and the allocation of human resources to appropriate sectors (agriculture, trade, administration).

5. **Role of the State in Resource Management**:

In ancient India, the state played a key role in overseeing and managing resources for the common good. Taxes were levied on various resources, including land, produce, and trade goods, and the proceeds were used for public welfare and infrastructure.

Product Costing in Ancient Business and Economic Models

Ancient India had a highly sophisticated economic system with an early form of product costing that took into account not just material costs, but also the value of labor, taxes, and time.

1. **Cost of Production**:

The Arthashastra outlined methods to calculate the cost of production in the context of goods like textiles, metalwork, and agricultural produce. It considered factors such as:

- **Labor Costs**: The cost of skilled labor in different industries.
- **Material Costs**: Raw materials like cotton, spices, metals, and gems were priced based on availability and quality.
- **Operational Costs**: Costs of tools, machinery, and basic infrastructure.
- **Transport and Handling**: Given the vast geographical expanse of ancient Indian trade routes, transportation (both land and maritime) formed a key element in the costing model.
- **Taxes and Levies**: In the ancient system, businesses also had to factor in the royal tax (called "Bhaga") and other governmental charges.

2. **Trade and Market Pricing:**

The ancient markets had mechanisms in place for determining fair prices based on supply and demand, which could also be considered a form of product costing. Merchants followed guidelines that balanced the cost of resources, overheads, and profits, as seen in the "Vyavahara" (business practices) mentioned in the Manusmriti.

3. **Barter and Non-Monetary Systems**:

The practice of barter in ancient India meant that costs were often calculated in terms of goods exchanged rather than currency. However, the value of goods and services was understood based on their utility, rarity, and demand.

Relationship between Business Ethics and Cost Control

In ancient Indian economic systems, there was a strong emphasis on business ethics and its relationship with cost control. Several key concepts can be outlined:

1. **Honesty and Fairness in Transactions**:

Ancient Indian texts, such as the Arthashastra, suggest that honesty in transactions was a fundamental principle. Merchants and traders were expected to maintain transparency in pricing, avoid overcharging, and ensure that goods sold were of good quality. Ethical conduct in business helped control costs by eliminating wasteful practices, fraud, and exploitation.

2. **Avoidance of Greed:**

Business ethics in ancient India also emphasized non-greed. Greed was seen as a negative force that could lead to the exploitation of workers and consumers, disrupting the balance of supply and demand. Kautilya argued that a wise king (or ruler) should ensure that businesses operate with fair margins and that high profits are not made at the expense of workers or consumers.

3. **Fair Wage Systems:**

The concept of fair wages in ancient India, especially in the context of artisans and laborers, was critical to controlling labor costs in a fair and ethical manner. The Arthashastra even mentions the need for regulating wages and creating standards to prevent the exploitation of workers in certain industries, which in turn helped businesses maintain ethical cost controls.

4. **Corporate Social Responsibility (CSR):**

In a way, the ancient Indian economic model embraced the idea of corporate social responsibility long before it became a modern-day concept. Merchants and kings were encouraged to ensure that their businesses contributed positively to society, from sponsoring religious and educational institutions to ensuring that basic needs like food and health were met for their workers.

5. **Efficiency and Waste Reduction**:

Ethical business practices also focused on efficient production and cost control by reducing waste, both in terms of material and human resources. The management of surplus resources, as seen in ancient texts, suggested reinvesting profits into the business or community, maintaining a balance between accumulation of wealth and its ethical utilization.

6. **Environmental Considerations:**

Ancient India's business ethics also involved respect for nature, which contributed to controlling costs over time. Ancient texts emphasized not over-exploiting natural resources, which ensured that production could be sustained without depleting resources, thus making businesses more resilient in the long term.

COST ACCOUNTING-AN INTRODUCTION

Introduction:-

Cost accounting is the branch of accounting. It has been developed due to the limitations of financial accounting. In these days of cut throat competition, it is vitual that a business concern should conduct its activities with the least chance of being kicked out of business. Those concerns which don't take such precautions and which dnt try to continuously improve, their products and service and bring down cost and prices will sooner or later find themselves out of business. Cost accounting plays a big role in the case.

Costing - terminology

Costing relates to the determination of cost of a product manufactured or service rendered. In order to ascertain cost, it involves system, methods and techniques of accumulation, classification and analysis of cost.

Cost Accounting: - "The process of accounting for cost from the point at which expenditure is incurred or committed to the establishment of its ultimate relationship with cost centres and cost units. The term 'cost Accountancy' includes

- Costing
- Cost Accounting.
  Its purposes are
  (i) Cost control,
  (ii) Profitability-ascertainment and serves as an essential tool of the management for decision-making.

Cost Centre

Cost Centre is defined as "a location or person or place or machine or item of equipment or thing for which cost can be ascertained and used for the purpose of cost control." Cost centre can be classified as:

1. Process cost centre is one in which a specific process or a continuous sequence of operations is carried out on a regular basis.

2. Production cost centre is one in which production activity is carried where the shape of raw material is converted into a finished product.

3. Service cost centre are those which render services to the other cost centres. For examples a maintenance & repair department, store department etc.

4. Impersonal cost centre is one which consists of a location or item of equipment (or group of these).

5. Personal cost centre is one which consists of a person or group of persons.

6. Operation cost centre is one which consists of those machines and/or persons carrying out similar operations.

Profit Centre

It means a centre responsible for adopting ways and avenues to earn maximum possible profit on a product or any other activity of business, by making market surveys, suggests localities for publicity, helps to formulate sales policies and suggests to add more values to the product at the same or cheaper costs.

NATURE AND CHARACTERISTICS OF COST ACCOUNTING

a) Cost accounting is a special branch of accounting having its own specific significance based on double entry system.
b) It ascertains cost of products and services through the process of accumulation, classification, analysis and recording.
c) It determines the cost of incomplete work or job.
d) The extensive use of this system involves application of statistical data, control methods & techniques and determining profitability.
e) This system provides measures for control and guidance for various levels of management.
f) Helpful in decision making process.

SCOPE OF COST ACCOUNTING

1. Analysis of the profitability of product, service, job or activities.

2. Analysis of profitability of various departments of segments of the organization.

3. Analysis of the type and nature of cost.

4. Explanation of the causes of variances between actual cost and standard cost.

5. Helpful in determination of selling price.

6. Analysis of the change in profit as per the change in level of production.

7. Analysis of the profit or loss of the organization.

8. Assist in management information system.

9. Provides basis for the application of techniques of management accounting.

10. Helpful for manufacturing and service rendering organization.

Difference between cost accounting and financial accounting

Aspect	Cost Accounting	Financial Accounting
Primary Purpose	To track, control, and manage costs within the organization.	To provide an accurate financial picture of the organization to external parties.
Users	Internal users (management, department heads, and employees).	External users (investors, creditors, regulatory bodies, and tax authorities).
Scope	Detailed, specific to products, processes, or departments.	Broad and aggregate, covering the entire organization.
Focus	Cost determination, cost control, and performance evaluation.	Financial performance (profits, revenues) and financial position (assets, liabilities).
Reports Produced	Cost sheets, job order costing, process costing reports, break-even analysis, etc.	Financial statements: Balance Sheet, Income Statement (Profit & Loss), Cash Flow Statement.
Time Frame	Real-time or specific to the current period for decision-making.	Historical, typically annual or quarterly financial results.
Regulation	Not mandatory or regulated externally, flexible reporting.	Must comply with external standards (GAAP, IFRS) and is audited.
Nature of Information	Quantitative cost data (e.g., raw materials, labor costs, overheads).	Quantitative financial data (e.g., revenue, expenses, assets, liabilities).
Flexibility	Flexible and customizable based on business needs and management preferences.	Standardized format, fixed

FUNDAMENTAL PRINCIPLES OF COSTING

1. Cost is related to its cause.

2. Cost is charged after it is incurred.

3. Abnormal costs are excluded from costing.

4. Past costs are not charged to future periods.

5. The concept of conservatism has no place in costing.

6. Accounting for cost is based on Double-entry Principle.

OBJECTS AND FUNCTIONS OF COST ACCOUNTING

i. To ascertain the cost per unit of the different products manufactured by a business
ii. concern.
iii. To advise management on future expansion policies and proposed capital projects.
iv. To organize the internal audit system to ensure effective working of different departments.
v. To help in supervising the working of punched card accounting or data processing through computers.
vi. Provide useful data to the management for taking decisions.
vii. To find out costing profit or loss by identifying with revenues the cost of those products or services To provide specialized services of cost audit in order to prevent the errors and frauds and to facilitate prompt and reliable information to the management.
viii. To organize cost reduction programmes with the help of different departmental managers.
ix. To provide requisite data and serves as a guide to price fixing of products manufactured or services rendered.
x. To help in the preparation of budgets and implementation of budgetary control.
xi. To guide management in the formulation and implementation of incentive bonus plans based on productivity and cost savings.
xii. To supply useful data to the management to take various financial decisions such as introduction of new products, replacement of labour by machine etc.
xiii. To organize an effective information system so that different levels of management may get required information at the right time in right form for carrying out their individual responsibilities in an efficient manner.

ADVANTAGES OF COST ACCOUNTING

A. To the Management

1) Action against unprofitable Activities
2) Facilities Decision Making
3) Inventory Control
4) Budgetary Control
5) Facilitation cost control
6) Prevents Fraud
7) Tool of Management Control
8) Measuring rods

9) Future Prospects

B. To the Employees

1) Sound Wage Policy
2) Security of Job
3) Distinction between Efficient and Inefficient Workers

C. To the Creditors

Bankers, creditors, investors etc., can have a better understanding of the firm as regard the process and prosperity, before they offer financial leading.

D. To the Government

1) For government wage tribunals, for deciding the state subsidy to industry.
2) In the preparation of national plans, economic development etc.
3) Cost audit is important and industries have to keep books of ac materials, labour and other costs.

E. To the Public

1) Removes all types of wast ages and inefficiencies.
2) Facilities the customers to pay fair price.
3) Development and prosperity of industries will create employment opportunities.

Cost accounting Standards

Below are the list of cost accounting standard with CAS No., Title Effective Date and (for the period commencing from)

a) CAS 1 (Revised 2015) Classification of Cost 1st April 2015
b) CAS 2 (Revised 2024) Capacity Determination 1st April 2024
c) CAS 3 (Revised 2015) Production and Operation Overheads 1st April 2016
d) CAS 4 (Revised 2018) Cost of Production / Acquisition / Supply of Goods / Provision of Services 1st March 2019
e) CAS 5 Average (Equalized) Cost of Transportation 1st April 2010
f) CAS 6 Material Cost 1st April 2017
g) CAS 7 Employee Cost 1st April 2017
h) CAS 8 Cost of Utilities 1st April 2017
i) CAS 9 Packing Material Cost 1st April 2017
j) CAS 10 Direct Expenses 1st April 2017

k) CAS 11 Administrative Overheads 1st April 2017
l) CAS 12 Repairs and Maintenance Cost 1st April 2017
m) CAS 13 Cost of Service Cost Centre 1st April 2017
n) CAS 14 Pollution Control Cost 1st April 2017
o) CAS 15 Selling and Distribution Overheads 1st April 2013
p) CAS 16 Depreciation and Amortisation 1st April 2017
q) CAS 17 Interest and Financing Charges 1st April 2017
r) CAS 18 Research and Development Costs 1st April 2014
s) CAS 19 Joint Costs 1st April 2014
t) CAS 20 Royalty and Technical Know-How Fee 1st April 2017
u) CAS 21 Quality Control 1st April 2017
v) CAS 22 Manufacturing Cost 1st April 2017
w) CAS 23 Overburden Removal Cost 1st April 2017
x) CAS 24 Treatment of Revenue in Cost Statements 1st April 2017

Costing Records and Accounting Auditing Rules

Costing records refer to the documentation and systemized records related to the costs of production, operations, and services. These records include details of costs incurred for materials, labor, overheads, etc., at every stage of production or service delivery. **Costing records** help in calculating the **cost of goods sold (COGS)**, **marginal cost**, **break-even analysis**, and **profitability**.

Objectives of Maintaining Cost Records:

- **Cost Control**: To ensure that production costs remain within budgeted limits.
- **Price Determination**: Helps in determining the prices of products or services by assessing the total cost.
- **Profitability Analysis**: Identifies areas where a company is losing money and helps in taking corrective measures.
- **Regulatory Compliance**: Ensures that the company complies with **legal requirements** regarding cost records and audits.
- **Decision-Making**: Assists management in making strategic decisions related to production, pricing, and expansion.

Costing Records in Different Industries:

- **Manufacturing Industry**: In manufacturing, **direct materials**, **direct labor**, and **factory overheads** are recorded.
- **Service Industry**: In services, cost records focus on **labor** and **overhead costs** associated with providing the service.

Structure of Cost Records:

1. **Material Cost Records**: Include purchases, consumption, wastage, and inventories.
2. **Labor Cost Records**: Track employee wages, salaries, and any other labor-related costs.
3. **Overhead Cost Records**: Record indirect costs like utilities, factory maintenance, and management salaries.
4. **Capital Expenditure Records**: Track expenditures on long-term assets such as equipment and machinery.

Cost Accounting Records Rules (CARR)

The **Cost Accounting Records Rules** (CARR) were notified by the Ministry of Corporate Affairs (MCA) in 2014. These rules are intended for maintaining detailed cost records for various industries and ensure that cost-related data is **accurate, consistent**, and **compliant with statutory requirements**.

Key Features of CARR 2014:

1. **Applicability**:
   - These rules are applicable to specific industries, including manufacturing, power generation, chemical production, and others.
   - The industries that are required to maintain cost records include:
     - **Pharmaceuticals**
     - **Cement**
     - **Steel**
     - **Power generation**
     - **Fertilizers**
     - **Textiles**
   - The applicability depends on factors such as **turnover** and **capital investment**.
2. **Maintenance of Cost Records**:
   - Businesses are required to maintain **cost records** that give a clear breakdown of costs incurred at different stages of production.
   - These records should be maintained in a **prescribed format** and should be kept for **at least eight years** from the end of the financial year in which the records were generated.
3. **Formulation of Cost Statements**:
   - Businesses must prepare **cost statements** that reflect the cost of production, profit margins, and cost behavior over a period.
   - The formats are prescribed and industry-specific, ensuring uniformity across similar businesses.
4. **Auditing of Cost Records**:

- Certain companies are mandated to undergo a **cost audit**, where the cost records are verified by a **cost auditor**.
- A detailed **cost audit report** is required to be submitted to the **Ministry of Corporate Affairs** for compliance.

Cost Audit Rules (CAR)

Cost Audit Rules, 2014, govern the **audit of cost records** maintained by companies. A **cost audit** involves reviewing and verifying the accuracy of the cost records and ensuring that the company is adhering to **prescribed cost accounting practices**.

Objective of Cost Audit:

- To **verify the accuracy** of cost records.
- To ensure compliance with **cost accounting standards**.
- To assess the **efficiency** of the cost control mechanisms in place.
- To check the **reasonableness** of prices and profits in relation to the costs incurred.

Key Provisions of Cost Audit Rules (CAR 2014):

1. **Appointment of Cost Auditors**:
   - The **Board of Directors** of the company is responsible for appointing a **cost auditor** who is a member of the **Institute of Cost Accountants of India (ICAI)**.
   - The **cost auditor** should be an independent professional and must not have any conflict of interest with the company.
2. **Appointment Criteria**:

- The requirement for **cost auditing** applies to companies that:
  - Have a **turnover** exceeding **₹35 crores** in any of the financial years.
  - Are involved in **regulated industries** like power, cement, fertilizers, etc.
- The **cost auditor** must be appointed within **180 days** from the start of the financial year.

3. **Cost Audit Report**:

- The **cost auditor** must submit a **Cost Audit Report** to the **Board of Directors**.
- The report includes the **cost structure**, details of **overhead costs**, **operating profits**, and suggestions for cost control.
- The report must also include **discrepancies** (if any) between actual and budgeted costs.

4. **Submission of Report to MCA**:
   - After the **Board of Directors** approves the report, it must be submitted to the **Ministry of Corporate Affairs (MCA)** within **180 days** from the end of the financial year.

- The MCA reviews these reports to ensure compliance with cost accounting standards and statutory regulations.

5. **Audit of Cost Statements**:
   - The auditor examines various cost records, such as:
     1. Material costs
     2. Labor costs
     3. Factory overheads
     4. Administrative overheads
   - **Compliance with cost standards**: Ensuring adherence to **Cost Accounting Standards (CAS)** issued by the Institute of Cost Accountants of India.
6. **Penalties for Non-Compliance**:
   - If a company fails to maintain proper cost records or undergo a cost audit, it may face penalties as per the **Companies Act** and **Cost Audit Rules**.
   - Penalties can include fines, penalties for non-compliance, and even criminal charges in extreme cases.

Unit II

Material Costing

Material or inventory cost control is defined as a systematic control and regulation of purchase, storage and usage of materials in such a way as to maintain an even flow of production at proper times and valued at right prices at the same time avoiding excessive investment in inventories.

Materials can be classified as under:

Direct materials	Indirect materials	Components
• Wood for furniture industries • sugarcane for sugar industries etc..	• oiling • stationary • small spare parts etc..	• tyres and tubes for car production

Objectives of Material control

- Continuous availability of material
- No under stocking or over stocking
- Economy in purchasing
- Proper Quality
- Minimum wastage
- Information about material availability

Inventory management

Inventory management refers to the process of ordering, storing, tracking, and controlling inventory (goods and materials) within a business. It plays a crucial role in ensuring that a company has the right products in the right quantity at the right time to meet customer demand, without overstocking or understocking. Effective inventory management optimizes the flow of goods, reduces carrying costs, and enhances operational efficiency.

Key Inventory Management Techniques

Just-in-Time (JIT) Inventory:

- JIT inventory management ensures that inventory arrives just in time for production or sales, minimizing inventory levels.

- It is used to reduce storage and carrying costs and is widely implemented in industries like automotive and electronics.
- Advantages: Reduced inventory costs, increased efficiency.
- Disadvantages: Risk of stockouts, dependency on suppliers for timely deliveries.

Economic Order Quantity (EOQ):

- The EOQ model calculates the optimal order quantity that minimizes total inventory costs, considering the cost of ordering and holding inventory.
- Formula:
  $EOQ = \sqrt{2DS / H}$

  Where:

  D = Demand rate (units per year)

  S = Ordering cost per order

  H = Holding cost per unit per year

- Advantages: Helps in determining the most cost-effective quantity to order.
- Disadvantages: Assumes constant demand and order costs, which may not be realistic in dynamic markets.

ABC Analysis:

- ABC analysis classifies inventory into three categories based on their importance:

A-items: High-value items with low frequency of sales. These require tight control and frequent reviews.

B-items: Moderate value and moderate sales frequency.

C-items: Low-value items with high frequency of sales. These are less critical and can be ordered in bulk.

- Advantages: Helps in prioritizing resources and management focus on the most critical inventory items.
- Disadvantages: May not capture all the nuances of the inventory's importance.

First-In, First-Out (FIFO):

- FIFO ensures that the oldest inventory items are sold first, reducing the risk of stock obsolescence and spoilage, especially in perishable goods.

- Advantages: Reduces the risk of holding obsolete inventory, ensures fresh stock.
- Disadvantages: Not always the most cost-effective when prices are rising, as older, cheaper stock is sold first.

Last-In, First-Out (LIFO):

- LIFO assumes that the most recent inventory items are sold first. This method is typically used in environments with rapidly changing prices.
- Advantages: Matches current costs with current revenues, potentially offering tax advantages in times of inflation.
- Disadvantages: Can result in older inventory being held longer, leading to obsolescence.

Reorder Point (ROP):

- The reorder point is the inventory level at which a new order is placed to replenish stock before it runs out.
- Formula:
  ROP = Lead Time Demand =Average Daily Usage × Lead Time in Days
- Advantages: Helps prevent stockouts and ensures timely procurement.
- Disadvantages: Requires accurate forecasting and a reliable supplier.

Safety Stock:

- Safety stock is additional inventory kept to prevent stockouts due to demand fluctuations or supply chain delays.
- Advantages: Helps mitigate the risk of stockouts.
- Disadvantages: Increases holding costs.

Inventory Control Systems

Manual Inventory System:

- Involves tracking inventory levels manually through ledgers or spreadsheets.
- Advantages: Simple and low-cost for small businesses.
- Disadvantages: Prone to human error, inefficient as the business grows.

Barcode/RFID-Based Systems:

- Use of barcodes or RFID (Radio Frequency Identification) tags to track inventory levels in real-time.
- Advantages: Real-time tracking, reduces human error, improves accuracy.
- Disadvantages: Initial setup cost, requires investment in technology.

Automated Inventory Management Systems (ERP Systems):

- Enterprise Resource Planning (ERP) systems integrate inventory management with other business functions such as procurement, sales, and finance.
- Advantages: Real-time tracking, integrated system, better forecasting, and planning.
- Disadvantages: High implementation cost, complexity.

Vendor-Managed Inventory (VMI):

- In VMI, suppliers manage inventory levels at the customer's location. The supplier is responsible for replenishing the stock when it reaches a certain threshold.
- Advantages: Reduced administrative burden for the company, better supplier relationship.
- Disadvantages: Potential loss of control over stock levels and ordering processes.

Benefits of Efficient Inventory Management

1. Cost Savings: Reducing excess inventory and minimizing stockouts leads to lower holding and procurement costs.
2. Improved Cash Flow: Efficient inventory management ensures that capital isn't unnecessarily tied up in excess stock, allowing businesses to reinvest more effectively.
3. Increased Customer Satisfaction: By ensuring product availability, businesses enhance the customer experience and loyalty.
4. Better Operational Efficiency: Automated and well-organized inventory systems streamline warehouse operations, reduce handling time, and increase productivity.
5. Data-Driven Decisions: Real-time inventory data allows managers to make informed decisions related to ordering, stocking, and pricing strategies.

Techniques of Inventory Control

1. **ABC Technique**: - It is a value based system of material control where materials are classified according to their value, A, B and C, so that costly and valuable materials are given greater attention and care. 'A' items are high value items which consist of only a small percentage of total items handled and hence require tight control. 'B' items are medium value materials which should be under normal control procedures 'C' items are low value materials which represent a large number of items and require economical control procedures, and least attention.
2. **Stock Levels**: - To avoid under stocking and overstocking, maximum, minimum and reorder levels are fixed. Factors which influence stock levels are
    - Anticipated rate of consumption
    - Account of capital available

- Availability of storage space
- Storage/ warehousing cost
- Procurement cost
- Reliability of suppliers
- Minimum order quantities imposed by suppliers
- Risk of loss due to obsolescence, deterioration, evaporation and fall in market prices

Cost price Method

It is important to know that the pricing of material directly affects the amount of profit/ loss reported during the accounting period. There is number of methods used for pricing material issues. The various methods are as follow:

1 . First in First Out (FIFO) Method:

Definition: FIFO is an inventory valuation method where the oldest inventory items are sold or used first.

Application: The first items purchased are the first ones sold, and the remaining items are valued at the most recent purchase costs.

Impact: In times of rising prices, FIFO will result in lower cost of goods sold (COGS) and higher inventory value on the balance sheet

2 . LIFO (Last In, First Out):

Definition: LIFO assumes that the most recently purchased items are sold or used first.

Application: The last items purchased are the first ones to be sold or used, meaning the inventory left over is valued at older costs.

Impact: During periods of inflation, LIFO leads to higher COGS and lower inventory value, potentially reducing taxable income.

3 . HIFO (Highest In, First Out):

Definition: HIFO is an inventory method where the highest priced inventory is sold first.

Application: The items with the highest purchase cost are considered sold first, which is a strategy to maximize profits in certain situations.

Impact: It can result in a higher cost of goods sold (COGS) and a lower reported profit, similar to LIFO, but this method is less commonly used and not allowed under certain accounting standards.

Each method has its own advantages, and the choice of method affects financial reporting, tax calculations, and inventory management.

4 . Average Cost Method:

Definition: The average cost method involves calculating a weighted average of all inventory costs and using that average for both the cost of goods sold (COGS) and the value of remaining inventory.

Application: After each purchase, the new average cost per unit is recalculated. This is particularly useful for companies with large quantities of similar, interchangeable products.

Impact: It smoothens fluctuations in inventory costs and provides a stable, consistent way to value inventory and calculate COGS, especially in volatile markets.

5 . Inflated Price Method:

Definition: The inflated price method is an accounting practice where inventory is valued at an inflated or higher price than its actual cost, usually for tax benefits or financial reporting.

Application: This method might be used to show higher asset values or profits, particularly during periods of inflation, but it can distort financial statements and may not be compliant with accounting standards.

Impact: While it may benefit a company in the short term (e.g., for tax deferral), it can mislead investors and regulatory bodies about the true value of a company's assets and profitability.

6 . Physical Verification Method:

Definition: The physical verification method involves a direct count and assessment of the actual inventory items on hand to determine their value.

Application: Inventory is physically counted (usually at the end of a period), and adjustments are made to reflect discrepancies between the recorded and actual stock.

Impact: This method ensures accuracy in inventory reporting but is labor-intensive and may result in occasional discrepancies due to human error or unaccounted losses. It's typically used in combination with other inventory valuation methods for consistency.

7 . Slow and Non-Moving Stock:

Definition: Slow-moving stock refers to inventory items that sell at a much slower rate than expected, while non-moving stock refers to items that haven't sold for an extended period of time.

Characteristics:

- **Slow-moving**: Items that are in stock for an extended period but still get occasional sales.
- **Non-moving**: Items that haven't been sold at all during a specific period.

Treatment:

- Slow-moving stock may be offered at a discount, promoted more aggressively, or repurposed to increase sales.
- Non-moving stock often needs to be written off or disposed of, as it ties up valuable working capital.

Impact: Accumulation of slow and non-moving stock can result in higher storage costs, lower profitability, and obsolescence of products. Managing these types of stock is crucial for efficient inventory management.

8 . Treatment of Losses Method:

Definition: The treatment of losses method involves the accounting approach used to handle inventory losses (due to theft, damage, or obsolescence).

Types of Losses:

- **Physical Losses**: Losses due to physical factors such as damage, theft, or spoilage.
- **Book Losses**: Losses identified through discrepancies between the physical count and recorded inventory.

- **Methods**:
  - **Direct Charge to Profit & Loss (P&L)**: Losses are directly written off to the profit and loss account, reducing the net income for the period.
  - **Inventory Adjustment**: The loss is adjusted in the inventory record, and an allowance for the loss may be created, reducing the reported inventory value.
  - **Provisions**: Some companies create provisions for expected losses, such as obsolete or damaged inventory, in advance of actual losses occurring.

Impact: How inventory losses are treated affects the financial statements, tax liabilities, and overall profitability. Proper management of losses ensures that the true financial health of the company is reflected.

Material Losses:

Material losses may take the form of waste, scrap, defectives and spoilage. Problems of spoilage, waste, defective units and scrap are bound to arise in almost all manufacturing concerns, so there is usually a difference between the quantity of the output and the input.

Usually the quantity of the output is less than that of the input because of waste, scrap or spoilage. Efforts should be made to reduce the difference between the quantities of the output and the input so that cost of production may be reduced.

Normal Wastage:

Normal wastage is the unavoidable loss of materials during production due to the inherent nature of the process. It is expected and planned for in cost estimates. Examples include dust, evaporation, and trimming of raw materials.

Abnormal Wastage:

Abnormal wastage refers to avoidable and unexpected loss of materials caused by factors such as machine breakdowns, human error, or poor handling. It is not considered part of standard operations and is recorded separately for analysis.

Key Differences:

- **Normal Wastage:** Inevitable, expected, included in production cost.
- **Abnormal Wastage:** Avoidable, unexpected, excluded from normal cost and often investigated.

Controlling abnormal wastage helps improve efficiency and reduce production costs.

Scrap:

Scrap refers to the leftover material or waste generated during the production process that has little or no value but can often be sold or reused. It does not usually require further processing. Examples include metal shavings, cuttings, or trimmings. Scrap is generally considered a normal part of production.

Spoilage:

Spoilage refers to units or materials that are damaged or not up to quality standards and cannot be repaired or used in production. Spoilage may be:

- Normal Spoilage: Expected and unavoidable due to the production process.
- Abnormal Spoilage: Unexpected and caused by errors, which should be investigated and controlled.

Key Differences:

- Scrap: Usable in some form; not defective.
- Spoilage: Defective; not usable or saleable without significant rework or loss.

Proper management of scrap and spoilage helps reduce waste and improve cost efficiency.

Model Question

1. FIFO (First-In, First-Out):

Example: Grocery Store (Perishables)
A grocery store sells milk.

- **Purchase 1:** 100 units at ₹20 each
- **Purchase 2:** 100 units at ₹25 each
- **Sale:** 100 units

Under FIFO:
The **first 100 units (₹20 each)** are sold first.

- **Cost of Goods Sold (COGS):** 100 × ₹20 = ₹2,000
- **Remaining Inventory:** 100 units at ₹25

FIFO matches the flow of perishable goods (old stock first).

2. LIFO (Last-In, First-Out):

Example: Hardware Store (Nuts & Bolts)
A hardware store keeps large amounts of nuts and bolts in stock.

- **Purchase 1:** 100 units at ₹10 each
- **Purchase 2:** 100 units at ₹15 each
- **Sale:** 100 units

Under LIFO:
The **last 100 units (₹15 each)** are sold first.

- **COGS:** 100 × ₹15 = ₹1,500
- **Remaining Inventory:** 100 units at ₹10

LIFO is used in inflationary times to reflect current costs in COGS.

3. HIFO (Highest-In, First-Out):

Example: Jewelry Store (Gold Chains)
A jeweler buys gold chains at different prices.

- **Purchase 1:** 10 units at ₹5,000 each
- **Purchase 2:** 10 units at ₹5,500 each
- **Purchase 3:** 10 units at ₹4,800 each
- **Sale:** 10 units

Under HIFO:
The **most expensive batch (₹5,500)** is sold first.

- **COGS:** 10 × ₹5,500 = ₹55,000
- **Remaining Inventory:** 10 at ₹5,000 + 10 at ₹4,800

HIFO shows the **highest possible cost**, minimizing profit (used sometimes for tax advantage).

Problem 1:

Given below the details of purchase:

Date	Transaction	Quantity	Unit Price (₹)
Jan 1	Purchase	100	10
Jan 5	Purchase	100	12
Jan 10	Purchase	100	15
Jan 15	Issue/Sale	150	?

Solution: Fifo method will be as follow:

Date	Details	Qty In	Rate	Qty Out	Rate	Balance (Qty × Rate)
Jan 1	Purchase	100	10			100 @ ₹10
Jan 5	Purchase	100	12			100 @ ₹10, 100 @ ₹12
Jan 10	Purchase	100	15			100 @ ₹10, 100 @ ₹12, 100 @ ₹15
Jan 15	Issue			150	FIFO	100 @ ₹10, 50 @ ₹12
	Balance					50 @ ₹12, 100 @ ₹15

COGS (Cost of Goods Sold):
100×10 + 50×12 = ₹1,000 + ₹600 = **₹1,600**

Lifo method will be as follow:

Date	Details	Qty In	Rate	Qty Out	Rate	Balance (Qty × Rate)
Jan 1	Purchase	100	10			100 @ ₹10
Jan 5	Purchase	100	12			100 @ ₹10, 100 @ ₹12
Jan 10	Purchase	100	15			100 @ ₹10, 100 @ ₹12, 100 @ ₹15
Jan 15	Issue			150	LIFO	100 @ ₹15, 50 @ ₹12
	Balance					50 @ ₹12, 100 @ ₹10

COGS:
100×15 + 50×12 = ₹1,500 + ₹600 = **₹2,100**

Hifo will be as follow:

Date	Details	Qty In	Rate	Qty Out	Rate	Balance (Qty × Rate)
Jan 1	Purchase	100	10			100 @ ₹10
Jan 5	Purchase	100	12			100 @ ₹10, 100 @ ₹12
Jan 10	Purchase	100	15			100 @ ₹10, 100 @ ₹12, 100 @ ₹15
Jan 15	Issue			150	HIFO	100 @ ₹15, 50 @ ₹12
	Balance					50 @ ₹12, 100 @ ₹10

COGS:
100×15 + 50×12 = ₹1,500 + ₹600 = **₹2,100**

Summary:

Method	COGS (₹)	Closing Stock
FIFO	1,600	150 units: 50 @ ₹12, 100 @ ₹15 = ₹2,100
LIFO	2,100	150 units: 50 @ ₹12, 100 @ ₹10 = ₹1,700
HIFO	2,100	150 units: 50 @ ₹12, 100 @ ₹10 = ₹1,700

Unit III

Labour Costing

Labour is the second most important element of cost. It is the only human element. So its control will also be different from the other two elements. Sometimes the labour cost becomes the major part of the total cost.

Labour cost can be classified as under:

Direct Labour	Indirect Labour
• Wages of weaver • wages of tailour etc..	• watchmens • supervisors, clerks etc..

Labour cost Control

Labour cost control refers to the process of monitoring and managing employee-related expenses to ensure efficient use of human resources and minimize unnecessary costs. It involves tracking wages, overtime, benefits, and productivity to maintain profitability and budgetary discipline.

Key Elements of Labour Cost Control:

1. **Workforce Planning** – Ensuring the right number of workers are employed to meet production needs.
2. **Time Management** – Monitoring attendance, work hours, and reducing idle time.
3. **Incentive Schemes** – Motivating workers through performance-based pay to improve efficiency.
4. **Training and Development** – Enhancing skills to increase productivity and reduce errors.
5. **Budgeting and Forecasting** – Setting labour cost budgets and comparing them with actuals to identify variances.

Effective labour cost control helps organizations reduce waste, boost productivity, and improve overall financial performance

Time keeping

Time keeping refers to **recording the attendance and working hours** of employees.

Purpose:

- To ensure punctuality and discipline.
- To calculate wages based on time worked.

Methods:

- Manual registers
- Punch cards
- Biometric systems

2. Time Booking

Time booking is the process of **recording the time spent by a worker on specific jobs or tasks** during their working hours.

Purpose:

- To determine **labour cost per job or process**.
- To measure **worker efficiency**.

Methods:

- Job cards
- Time tickets
- Daily time sheets

3. Payroll

Payroll is the process of **calculating and distributing wages or salaries** to employees based on their time records and performance.

Includes:

- Basic wages
- Overtime pay
- Bonuses and incentives
- Deductions (PF, taxes, etc.)

Purpose:

- Accurate and timely payment to workers
- Compliance with labour laws and company policies

Together, these systems help ensure accurate wage calculation, cost control, and efficient **labour management**.

Idle time

Idle Time refers to the period during which workers are **paid but not engaged in productive work** due to various reasons.

Types of Idle Time:

1. **Normal Idle Time:**
   - Unavoidable and expected.
   - Examples: Machine setup, tea breaks, maintenance.
   - Treated as **part of factory overheads**.
2. **Abnormal Idle Time:**
   - Unexpected and avoidable.
   - Examples: Machine breakdowns, power failure, shortage of materials.
   - Treated as a **separate loss in costing**.

Causes of Idle Time:

- Machine breakdowns
- Power failures
- Lack of materials or instructions
- Poor planning or supervision
- Personal time (e.g., restrooms, waiting time)

Control of Idle Time:

- Regular machine maintenance
- Better scheduling and planning
- Ensuring material availability
- Improved supervision and training

Conclusion:
Idle time increases **labour cost without adding value**. Identifying and controlling idle time is essential for improving productivity and reducing waste in operations.

Methods of wage payments

There are two basic methods of labour remuneration:

- Time rate system

- Piece rate system

The Time Rate System is a method of employee remuneration where wages are paid based on the amount of time worked, regardless of output or productivity. Employees are compensated per hour, day, week, or month.

Key Features:

- Wages depend on time spent, not the quantity of work done.
- Commonly used for clerical, administrative, and supervisory roles, or where output is hard to measure.
- Encourages quality and consistency over speed.

Advantages:

- Simple to understand and administer.
- Ensures income stability for employees.
- Promotes focus on quality of work.

Disadvantages:

- May reduce motivation to work efficiently.
- Can lead to low productivity if not monitored properly.
- This system is best suited where work cannot be easily quantified or where quality is more important than quantity.

Wages payable are calculated as follow:

Wages = No. of hours worked X wage rate per hour

The Piece Rate System is a method of remuneration where employees are paid based on the number of units or pieces they produce, rather than the time they spend working.

Wages payable are calculated as follow:

Wages = No. of units produced X wage rate per unit

Key Features:

- Wages are directly linked to output.
- Encourages higher productivity.
- Common in manufacturing or assembly-line jobs where work is measurable.

Advantages:

- Motivates workers to produce more.
- Increases efficiency and output.
- Helps in cost control, as labour cost per unit can be determined easily.

Disadvantages:

- May lead to compromised quality of work.
- Workers may suffer income loss due to machine breakdowns or lack of materials.
- Not suitable for tasks where output is hard to measure.

The piece rate system is ideal for repetitive, measurable tasks where performance can be easily tracked.

Incentives Scheme / plans

Both time rate system and piece rate system discussed above have their merits and demerits. Incentive plans attempt to combine the good points of both the systems.

The primary purpose of this scheme is to induce a worker to produce more to earn a higher wage, naturally, producing more in the same period of time should result in higher pay for the workers. Because of greater number of units produced it should also result in a lower cost per unit fixed factory cost and also for labour cost.

Various incentives scheme are discussed below:

1 . Taylour differential piece rate system

Taylor's Differential Piece Rate System is an incentive wage plan developed by Frederick W. Taylor, the father of scientific management. It aims to reward efficient workers and penalize inefficient ones based on their output.

Key Features:

- Two piece rates are used:
- Higher rate for workers who meet or exceed the standard output.
- Lower rate for workers who produce less than the standard.
- Encourages workers to achieve or surpass performance targets.

Advantages:

- Strong incentive for higher productivity.
- Helps identify and reward efficient workers.
- Promotes scientific management practices.

Disadvantages:

- May create stress and dissatisfaction among less efficient workers.
- Can compromise quality if workers focus only on quantity.
- This system is best suited for standardized, measurable tasks where performance can be objectively assessed

Example of Taylor's Differential Piece Rate System Incentive Plan:

Let's say the standard output is **100 units per day**.

Taylor's system sets:

- **Higher piece rate** = ₹6 per unit (for producing **100 units or more**)
- **Lower piece rate** = ₹4 per unit (for producing **less than 100 units**)

Example 1: Efficient Worker

A worker produces **110 units** in a day.
Since output is above the standard, he gets the higher rate.

Earnings = 110 units × ₹6 = ₹660

Example 2: Inefficient Worker

A worker produces **90 units** in a day.
Since output is below the standard, he gets the lower rate.

Earnings = 90 units × ₹4 = ₹360

This system **motivates workers to meet or exceed the standard**, as their earnings are directly affected by their performance.

2 . Halsey Premium Plan

The **Halsey Premium Plan** is a time-based incentive wage system that rewards workers for saving time while maintaining a guaranteed wage.

Key Features:

- A **standard time** is set for each task.
- Workers are paid a **time-rate wage** for actual time worked.

- If a worker **completes the task in less time**, they receive a **bonus**, typically **50% of the time saved**, calculated at the time rate.

Formula for Total Earnings:
Earnings = (Time Taken × Hourly Rate) + (50% × Time Saved × Hourly Rate)

Advantages:

- Encourages **higher efficiency**.
- Provides **guaranteed minimum wages**.
- Simple to understand and implement.

Disadvantages:

- Bonus is shared with the employer, so **less incentive** compared to full piece rate systems.
- May not **fully reward highly efficient workers**.

Example:

- Standard time = 10 hours
- Time taken = 8 hours
- Hourly rate = ₹100
- Time saved = 2 hours

Earnings = (8 × ₹100) + (50% × 2 × ₹100) = ₹800 + ₹100 = ₹900

This plan balances productivity incentives with income stability.

3 . Rowan plan

The Rowan Plan is a time-based incentive wage system that rewards workers for completing a task in less than the standard time, while controlling excessive bonus payments.

Key Features:

- A standard time is fixed for a job.
- Workers are paid for actual time worked at the regular hourly rate.
- A bonus is given based on the proportion of time saved to standard time, multiplied by actual time and wage rate.

Formula for Total Earnings:
Earnings = (Time Taken × Hourly Rate) +
(Time Saved / Standard Time × Time Taken × Hourly Rate)

Advantages:

- Encourages efficiency without overpaying for large time savings.
- Ensures minimum wages and controls labour costs.
- Suitable for jobs where quality and consistency matter.

Disadvantages:

- Bonus is lower compared to the Halsey Plan when large time savings occur.
- Calculation is slightly more complex.

Example:

- Standard time = 10 hours
- Time taken = 8 hours
- Time saved = 2 hours
- Hourly rate = ₹100

Bonus = (2/10) × 8 × ₹100 = ₹160
Earnings = (8 × ₹100) + ₹160 = ₹800 + ₹160 = ₹960

The Rowan Plan provides a balanced approach by linking bonuses to both time saved and time worked, promoting steady and quality output.

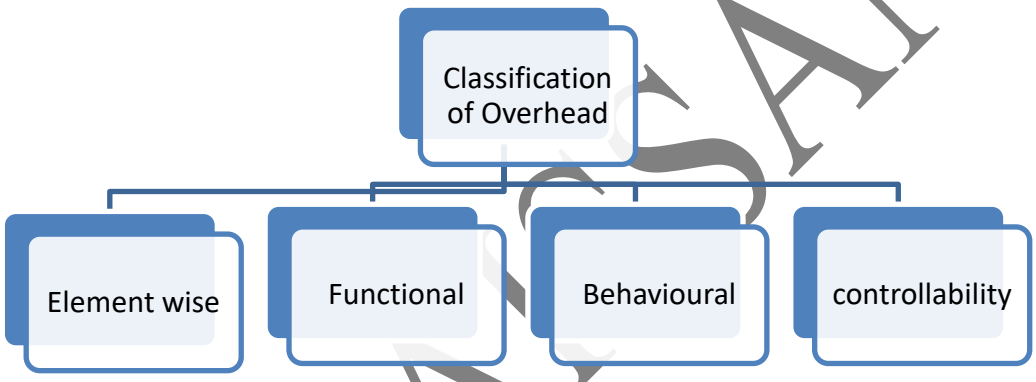
Unit IV

Overhead Expenses and Unit Costing

Definition:

Overhead expenses are indirect costs incurred in the production process that cannot be directly traced to a specific product, job, or service. These include indirect materials, indirect labour, and other indirect expenses.

Overhead costs may be classified according to following :



1. **By Function:**
   - **Factory/Production Overheads**: Indirect costs incurred in the factory (e.g., factory rent, power, depreciation).
   - **Administrative Overheads**: Costs related to office management (e.g., office salaries, stationery).
   - **Selling and Distribution Overheads**: Costs for selling and delivering goods (e.g., advertising, delivery charges).
2. **By Nature or Element:**
   - **Indirect Materials**: Lubricants, cleaning supplies, etc.
   - **Indirect Labour**: Salaries of supervisors, maintenance staff, etc.
   - **Indirect Expenses**: Depreciation, rent, insurance, etc.
3. **By Behavior:**
   - **Fixed Overheads**: Do not change with output (e.g., rent, salaries).
   - **Variable Overheads**: Change directly with production (e.g., power, packing).

- **Semi-Variable Overheads**: Partly fixed, partly variable (e.g., telephone bills, repairs)

Collection and Allocation of Overheads:

- Collection: Grouping of overheads under proper heads (e.g., power, rent, depreciation).
- Allocation: Assigning overheads to specific cost centers when directly traceable.
- Apportionment: Distributing common overheads to departments based on logical bases (e.g., floor area, number of workers).
- Absorption: Charging overheads to products using a predetermined overhead rate.

Absorption of overheads

Absorption means distribution of overhead expenses allotted to a particular department over the units produced in that department. So charging of overheads to cost units is called absorption of overheads.

Determination of overhead rates :

- Actual Rate – Actual overhead
- Predetermined Rate Budgeted Overheads– Actual Base Budgeted Base
- Standard Rate –Standard Overhead
- Blanket Rate – Total overheads for the factory
- Standard Base Total quantity of the entire factory.

Under Absorption and over Absorption of overheads

Under Absorption: - If the amount absorbed on predetermined rates is less than the overheads actually incurred, it is called under absorption or under recovery.

Over Absorption: -If the amount absorbed is more than the actual overheads, it is known as over absorption or over-recovery.

Causes of Under/Over Absorption of overheads

I. Error in estimating overheads
   - Error in estimating quantum of production
   - Actual hours worked may be more or less than those anticipated.

II. The basis upon which factory overheads are recovered from production may no longer be correct on account of changes in prices of materials or wage rates.

III. WIP may not have been charged with its share of overhead cost accounts.

IV. Seasonal fluctuations in overheads from time to time.

V. Unanticipated changes in methods of production and production capacity.

Capacity Level Cost

Meaning of Capacity

Capacity refers to the **maximum output** that a business or production unit can achieve under given conditions with available resources such as machinery, labour, and space.

2. Types of Capacity Levels

Understanding different capacity levels is essential to identify and control **capacity level cost**:

a. Installed Capacity (Theoretical Capacity):

- Maximum output achievable under **ideal conditions** with no breakdowns, delays, or interruptions.
- Not practically achievable due to real-world limitations.

b. Practical Capacity:

- Maximum capacity considering **unavoidable interruptions** like maintenance, holidays, or setup time.
- Used for **long-term planning**.

c. Normal Capacity:

- Average capacity that a company expects to use over a **period of time**, based on **past trends and expected demand**.
- Often used for **cost allocation and budgeting**.

d. Actual Capacity (Achieved Capacity):

- The **real output** produced during a specific period.
- May vary due to demand, breakdowns, or idle time.

3. What Is Capacity Level Cost?

Capacity Level Cost refers to the **fixed costs** associated with maintaining a certain level of production capacity, **regardless of actual output**.

These are **costs incurred to keep the production system ready** to operate at different capacity levels, whether or not the plant operates at full potential.

Idle capacity cost is the portion of capacity level cost that remains unutilized due to lower-than-normal production.

Idle Capacity Cost=Unutilized Capacity×Fixed Cost per Unit of Capacity

Example:

- Practical capacity: 10,000 units
- Actual production: 8,000 units
- Fixed costs: ₹200,000
- Fixed cost per unit = ₹200,000 / 10,000 = ₹20

Idle Capacity Cost=(10,000−8,000)×₹20=₹40,000

Impact of Capacity Level on Costing:

Capacity Utilization	Effect on Unit Cost
Low (Under-utilization)	Higher unit cost due to idle capacity
Normal	Optimal unit cost
High (Over-utilization)	Possible overtime or maintenance costs

Unit Costing

Definition:

Unit Costing is a costing method used where production is continuous, and products are identical or homogeneous. It determines the cost per unit of output.

Industries Using Unit Costing:

- Cement
- Steel
- Brick making
- Oil refining
- Mining
- Textiles
- Sugar and chemicals

Cost Sheet Format (under Unit Costing):

Particulars	Amount (₹)
Direct Materials	XXXX
Direct Labour	XXXX

Particulars	Amount (₹)
Direct Expenses	XXXX
Prime Cost	XXXX
Add: Factory Overheads	XXXX
Factory/Works Cost	XXXX
Add: Administrative Overheads	XXXX
Cost of Production	XXXX
Add: Selling & Distribution	XXXX
Total Cost / Cost of Sales	XXXX
Add: Profit	XXXX
Selling Price	XXXX

Formula for Unit Cost:

Unit Cost= Total Cost / Total Units Produced

Advantages of Unit Costing:

- Simple and easy to apply
- Helps in cost control
- Assists in pricing decisions
- Useful for comparison over periods
- Suitable for standardized production

Limitations:

- Not suitable for customized production
- Difficult to apply when joint products or by-products are involved
- May not reflect individual job profitability

Example Cost Sheet (Unit Costing)

Let's assume a factory produces 1,000 units of a product.

Particulars	Amount (₹)
Direct Materials	50,000
Direct Labour	30,000
Direct Expenses	10,000
Prime Cost	90,000
Add: Factory Overheads	20,000

Particulars	Amount (₹)
Factory/Works Cost	1,10,000
Add: Administrative Overheads	15,000
Cost of Production	1,25,000
Add: Selling & Distribution Overheads	10,000
Total Cost (Cost of Sales)	1,35,000
Add: Profit (20%)	27,000
Selling Price	1,62,000

Unit Cost = ₹1,35,000 / 1,000 units = ₹135 per unit

Difference between overhead expense and unit costing

Aspect	Overhead Expenses	Unit Costing
Definition	Indirect costs not directly traceable	Method to calculate cost per unit of output
Includes	Rent, depreciation, indirect labour, etc.	All direct & indirect costs per unit
Used in	All types of industries	Mass production industries
Objective	Allocate indirect costs accurately	Find cost per unit for pricing/profitability
Classification	By function, nature, behavior	Not classified, summarized in cost sheet
Documents Used	Overhead registers, ledgers	Cost sheet

Treatment of Certain Items in Costing

1. Interest on Capital

Definition:
Payment made for the use of capital (owned or borrowed).

Treatment in Costing:

- **Generally excluded** from cost accounts.
- Treated as a **financial charge**, shown in **financial accounts** only.
- If interest is included (e.g. in public utilities or long-term projects), it should be shown **separately**.

Reason:
Interest is not directly related to production activities and varies by financing methods.

2. Packaging Expenses

Definition:
Costs incurred to pack goods for protection, handling, or marketing.

Treatment in Costing:

Type of Packaging	Treatment
Primary / Essential	Included in **prime cost or factory overheads**
Secondary / Fancy	Treated as **selling & distribution overhead**
Special export packing	Charged to **specific job or order**

3. Bad Debts

Definition:
Amounts owed by customers that are no longer collectible.

Treatment in Costing:

- Treated as a **financial loss**, not included in cost accounts.
- Shown in **financial accounts** only.
- Not related to production or operational efficiency.

Note: Sometimes considered in **cost-plus contracts** as a special cost item if agreed upon.

4. Research and Development (R&D) Expenses

Definition:
Costs incurred for innovation, product improvement, or process development.

Treatment in Costing:

Type of R&D	Treatment

Type of R&D	Treatment
Specific Product R&D	Treated as **direct cost** of that product
General R&D (not for specific product)	Treated as **production overhead**
Long-term or future R&D	Capitalized in **financial accounts**, not in cost

Note: The treatment depends on the **nature and purpose** of the R&D activity.

Summary:

Item	Included in Costing?	Treated As
Interest on Capital	□ No	Financial charge (excluded from cost accounts)
Packaging Expenses	□ Yes	Direct cost or Selling overhead
Bad Debts	□ No	Financial loss (excluded from cost accounts)
R&D Expenses	□ Sometimes	Direct cost or Overhead, depending on purpose

Unit V

Contract Costing

1 .Contract Costing is a **specific order costing** method used to determine the cost and profit of large, long-term projects, usually undertaken **outside the contractor's premises**.

It is suitable for **construction contracts**, such as:

- Roads
- Bridges
- Buildings
- Dams
- Shipbuilding

Each contract is treated as a **cost unit**.

2. Features of Contract Costing

1. **Large-scale, long-term contracts**
2. Work is executed at the **site** (off-premises)
3. **Direct costs** are easily identifiable with a specific contract
4. **Payment is made in stages** (progress payments)
5. Work may span **multiple accounting periods**
6. Revenue recognition is done on a **percentage-of-completion basis**

3. Cost Components in Contract Costing

Component	Description
Direct Materials	Materials sent directly to the site
Direct Labour	Wages of site workers
Direct Expenses	Site insurance, design fees, etc.
Plant & Equipment	Cost of machinery used for the contract
Overheads	Shared costs allocated based on a proportion
Sub-contract Costs	Costs paid to sub-contractors

4. Accounting for Plant and Machinery

Case	Treatment
Plant used only for the contract	Entire cost charged to contract
Plant used for multiple contracts	Depreciation apportioned to each contract

5. Payment Terms

- **Progress Payments**: Received periodically based on work certified
- **Retention Money**: Part of the certified value withheld (e.g. 10%) until completion
- **Escalation Clause**: Allows cost revision due to price fluctuations
- **Cost-plus Contract**: Payment includes actual cost + agreed profit margin

6. Contract Account Format

Dr. Contract Account	Cr. Contract Account
Materials issued	Work Certified
Wages paid	Work Uncertified
Direct expenses	Material returned to stores
Depreciation of plant	Plant returned or sold
Sub-contract costs	Notional Profit (transferred to P&L)

7. Work Certified and Work Uncertified

- **Work Certified**: Value of work approved by the contractee's architect or engineer.
- **Work Uncertified**: Work completed but not yet approved or measured.

8. Profit on Incomplete Contracts

Profit is **not fully recognized** until the contract is completed. A **portion of notional profit** is transferred to the **Profit & Loss Account** depending on the stage of completion.

Formula for Notional Profit:

Notional Profit=Value of Work Certified + Work Uncertified - Total Cost Incurred

Profit to be Transferred to P&L:

Stage of Completion	Profit Transferred to P&L
Less than 25%	No profit transferred
25% to 50%	1/3 × Notional Profit × (Cash Received / Work Certified)
50% to 90%	2/3 × Notional Profit × (Cash Received / Work Certified)
Near Completion	Estimated Total Profit × (Work Certified / Contract Price) × (Cash Received / Work Certified)

9. Completed Contracts

For **completed contracts**, **entire profit or loss** is transferred to the **Profit & Loss Account**.

10. Loss on Contract

If a contract incurs a loss (due to cost overruns, poor estimates, etc.), the **entire loss** is charged to the **P&L Account** in the period it is identified, even if the contract is incomplete.

11. Example of Contract Costing:

Contract Price: ₹10,00,000
Work Certified: ₹6,00,000
Cash Received: ₹5,40,000
Total Cost Incurred: ₹4,50,000
Work Uncertified: ₹50,000

Notional Profit=(₹6,00,000+₹50,000)−₹4,50,000=₹2,00,000

12. Key Terms in Contract Costing

Term	Meaning
Retention Money	Withheld portion of payment to ensure contract completion
Escalation Clause	Allows price adjustments for inflation in materials/labour
Cost-plus Contract	Contractor is paid cost + fixed % profit

Term	Meaning
Work Certified	Approved portion of work by engineer or architect
Work Uncertified	Completed work not yet certified

13. Advantages of Contract Costing

- Accurate cost control on long-term contracts
- Helps in determining stage-wise profitability
- Useful for contract pricing and progress billing

14. Limitations

- Involves estimation errors in early stages
- Complex if many contracts are ongoing simultaneously
- Delayed certification can affect revenue recognition

Conclusion:

Contract costing is a specialized form of job costing suitable for large-scale, long-term, site-based projects. It helps contractors and businesses accurately track costs, assess progress, and recognize profits in a structured way while complying with accounting standards.

Sub-Contract Costing

Sub-Contract Costing refers to the cost tracking and control system used by a business when it outsources part of the work to an external contractor. It includes all costs incurred on or paid to sub-contractors.

Features:

- A part of the main contract is outsourced.
- The main contractor remains responsible for the overall contract.
- Sub-contract costs are treated as direct expenses.
- Requires separate tracking in the cost accounts for control and analysis.
- Often governed by sub-contract agreements.

Accounting Treatment of Sub-Contract Costs

In Main Contractor's Books:

- Treated as direct cost of the main contract or job.
- Shown as a separate item in the contract account.

In Cost Sheet (Unit or Job Costing):

- Shown as Direct Expenses if related to a specific job/contract.
- If general in nature (rare), may be classified as factory overhead.

Sub-Contract Work Within the Factory

Sometimes, part of the work is sent outside to sub-contractors, even though it's part of factory operations.

Treatment:

- Materials sent out: Recorded and tracked separately.
- Charges paid: Added to job or process cost.
- If part of a continuous process, treated in process costing.

Sub-Contract Costing is essential for accurately tracking and controlling the costs of outsourced work in both job and contract costing environments. It ensures transparency, proper costing, and accountability when using external parties in production or project execution.

Process Costing

Process costing is a method used in cost accounting to assign production costs to units of output. It's commonly used in industries with continuous production of homogeneous products (e.g., chemicals, food processing, textiles, oil refining).

Key Features of Process Costing

1. **Continuous Production**: Products are mass-produced in a series of steps (processes).
2. **Homogeneous Products**: All units are identical.
3. **Costs Accumulated by Process**: Costs are tracked per department or process, not per individual unit.
4. **Average Costing**: Costs are averaged over all units produced in a period.

Steps in Process Costing

1. **Accumulate Costs**: Gather direct materials, direct labor, and overheads for each process.

2. **Calculate Equivalent Units**: Adjust for partially completed units using percentage of completion.
3. **Determine Cost per Equivalent Unit**:

   Cost per equivalent unit=Total costs / Equivalent unit

4. **Assign Costs to Output**: Allocate costs to:
   - Completed units
   - Work-in-process (WIP) at the end

Advantages

- Easy for homogeneous production.
- Cost control by process.
- Simpler to apply for mass production.

Disadvantages

- Not suitable for customized products.
- Less detailed for decision-making on individual units.
- Estimation of equivalent units can be complex.

Example: Given Data (for the month)

Process 1

- Raw Materials added: ₹30,000
- Direct Wages: ₹10,000
- Factory Overhead: 100% of wages
- Output transferred to Process 2: 900 units
- Normal loss: 10% of input (1,000 units input), scrap value ₹2/unit
- Closing WIP: NIL

Process 2

- Units received: 900
- Direct Wages: ₹8,000
- Overheads: 100% of wages
- Output transferred to Process 3: 880 units
- Normal loss: 5% of input
- Scrap value of loss: ₹3/unit
- Closing WIP: NIL

Process 3

- Units received: 880
- Direct Wages: ₹6,000
- Overheads: 100% of wages
- Normal loss: 10 units (not a %), scrap value ₹5/unit
- Closing stock: 30 units (fully complete)
- Output to finished stock: 840 units

Solution: Step-by-Step: Create Process Accounts

Process 1 account :

Particulars	Units	Amount	Particulars	Units	Amount
To Raw Material	1,000	₹30,000	By Normal Loss	100	₹200
To Direct Wages		₹10,000	By Process 2 A/c	900	₹49,800
To Factory Overhead		₹10,000			
Total	1,000	₹50,000	**Total**	1,000	₹50,000

Normal Loss = 10% of 1,000 = 100 units → ₹2 each = ₹200
Cost of good output = ₹50,000 – ₹200 = ₹49,800
Cost per unit (good units) = ₹49,800 ÷ 900 = ₹55.33

Process 2 account

Particulars	Units	Amount	Particulars	Units	Amount
To Process 1 A/c	900	₹49,800	By Normal Loss	45	₹135
To Direct Wages		₹8,000	By Process 3 A/c	880	₹65,665
To Factory Overhead		₹8,000			
Total	900	₹65,800	**Total**	925	₹65,800

Normal Loss = 5% of 900 = 45 units → ₹3 each = ₹135
Cost of good output = ₹65,800 – ₹135 = ₹65,665
Cost per unit = ₹65,665 ÷ 880 = ₹74.62

Process 3 account

Particulars	Units	Amount	Particulars	Units	Amount
To Process 2 A/c	880	₹65,665	By Normal Loss	10	₹50
To Direct Wages		₹6,000	By Finished Goods A/c	840	₹71,867
To Factory Overhead		₹6,000	By Closing Stock (30)	30	₹2,748

Particulars	Units	Amount	Particulars	Units	Amount
Total	880	₹77,665	**Total**	880	₹77,665

Normal Loss = 10 units @ ₹5 = ₹50
Total good units = 840 (finished) + 30 (closing stock) = 870
Cost to be distributed = ₹77,665 – ₹50 = ₹77,615
Cost per unit = ₹77,615 ÷ 870 = ₹89.21
Finished Goods = 840 × ₹89.21 = ₹71,867
Closing Stock = 30 × ₹89.21 = ₹2,748

Summary of Final Costs

Stage	Units Passed	Total Cost
Process 1	900	₹49,800
Process 2	880	₹65,665
Process 3	840 to FG	₹71,867
Final Closing Stock	30	₹2,748

Joint Products and By-Products

Definition

Term	Explanation
Joint Products	Two or more products **produced simultaneously** from the same raw material and process, with **substantial economic value**.
By-Products	Secondary products also produced in a joint process, but with **insignificant value** compared to the main/joint products.

Examples:

Industry	Joint Products	By-Products
Oil Refining	Petrol, Diesel, Kerosene	Tar, Wax
Meat Processing	Beef, Pork, Mutton	Bones, Gelatin
Dairy	Cream, Butter	Skimmed milk, Whey
Lumber	Timber, Plywood	Sawdust, Wood shavings

Advantages of Joint Product Costing

- Enables better product pricing decisions
- Helps in profitability analysis
- Improves cost control in joint processes

Example

A company processes **1,000 kg of raw material** in a single process, yielding:

- **Joint Products**:
  - Product A: 400 kg
  - Product B: 300 kg
- **By-Product**:
  - Product C: 200 kg (minor value)

Cost Details:

- Raw Material: ₹10,000
- Direct Labor: ₹6,000
- Overheads: ₹4,000
- **Total Joint Costs = ₹20,000**
- Selling prices:
  - Product A: ₹50/kg
  - Product B: ₹40/kg
  - Product C: ₹5/kg
- **By-product (C)** requires no further processing and is sold as-is.

Solution :

Step 1 : **Method: Cost Reduction Method**

- Value of by-product C = 200 kg × ₹5 = **₹1,000**
- This amount is deducted from joint cost:

  Net Joint Cost=₹20,000−₹1,000=₹19,000

Step 2: Allocate Joint Costs Using **Sales Value at Split-off**

Product	Output (kg)	Selling Price/kg	Sales Value	% of Total	Joint Cost Allocated
A	400	₹50	₹20,000	57.14%	₹10,857
B	300	₹40	₹12,000	34.29%	₹6,514
C (By-product)	200	₹5	₹1,000	—	— (deducted from cost)

- Total Sales Value = ₹20,000 + ₹12,000 = ₹32,000
- A: (₹20,000 / ₹32,000) × ₹19,000 = ₹10,857
- B: (₹12,000 / ₹32,000) × ₹19,000 = ₹6,514
- Rounding leaves ₹1,629 unallocated (can be adjusted proportionally)

Step 3 : Prepare the Product Account

Joint Process Account

Particulars	Qty (kg)	Amount (₹)	Particulars	Qty (kg)	Amount (₹)
To Raw Materials	1,000	10,000	By Product A	400	10,857
To Direct Labor		6,000	By Product B	300	6,514
To Overheads		4,000	By Product C (By-product)	200	1,000
Total	1,000	₹20,000	**Total Output**	900	₹18,371 + 1,000 = ₹19,371

Note: The joint cost allocated to A and B is ₹17,371 (₹10,857 + ₹6,514), and by-product revenue is ₹1,000.

Unit VI

Operating Cost Accounting

1. Meaning of Operating Costing

Operating Costing (also called **Service Costing**) is a method of costing used for **organizations that provide services** rather than produce goods.

It is used where services are **repetitive**, **standardized**, and **measurable**.

2. Industries Using Operating Costing

Industry/Service	Units of Measurement
Transport (Bus, Truck)	Per km, ton-km, passenger-km
Hotels & Lodging	Per room night
Hospitals	Per patient-day
Power Supply	Per kilowatt hour (kWh)
Water Supply	Per 1,000 litres
Cinemas	Per seat-show
Education	Per student

3. Characteristics of Operating Costing

- Cost is collected and analyzed **per unit of service**.
- Involves **both fixed and variable costs**.
- Based on **periodic cost sheets**.
- Aims to determine **cost per unit of service** for pricing, control, and performance.

4. Components of Operating Costs

Cost Type	Examples
Fixed Costs (Standing Charges)	Salaries, insurance, rent, depreciation

Cost Type	Examples
Variable Costs (Running/Operating Costs)	Fuel, maintenance, power, consumables
Semi-variable Costs	Repairs, overtime, supervision (partly fixed & variable)

5. Cost Unit in Operating Costing

Industry	Cost Unit Example
Bus Service	Cost per passenger-km
Trucking	Cost per ton-km
Power House	Cost per kWh
Hotels	Cost per room per night
Hospitals	Cost per patient-bed day

Formula for Composite Cost Units:

Total cost per unit=Total cost for the period / Total service units in the period

6. Operating Cost Sheet Format

Typical format for **Transport Costing**:

Particulars	₹
Standing Charges	
(e.g., Insurance, Salaries)	xx
Operating/Routine Charges	
(e.g., Fuel, Oil)	xx
Maintenance Charges	xx

Particulars	₹
Total Operating Cost	xx
Operating Cost per Unit	= Total Cost ÷ Total units (e.g., ton-km)

7. Service Unit Calculation Example

For a truck:

- No. of trips = 10
- Distance per trip = 100 km
- Load carried = 5 tons
- Total ton-km =

  Trips × Distance × Tons=10×100×5=5,000 ton- km

8. Objectives of Operating Costing

1. **Ascertain cost per service unit** (e.g., per passenger-km, room-day)
2. **Compare performance** over periods or between branches
3. **Aid in pricing** decisions for services
4. **Control costs** via budgeting and variance analysis

9. Limitations of Operating Costing

- Difficult to **allocate fixed costs** accurately
- **External factors** (weather, traffic) can affect service cost
- Service units may be **difficult to standardize**
- Costing may not reflect **quality of service**

10. Difference: Operating Costing vs Job Costing

Basis	Operating Costing	Job Costing
Nature	Service-based	Product/Job-based
Cost Unit	Per service unit	Per job/order
Industries Used	Transport, hotels, power	Furniture, printing
Cost Calculation		

Transportation Costing (Transport/Logistics Services)

Cost Units in Transport Costing

Type of Transport	Cost Unit Examples
Goods Transport	Ton-kilometre (ton-km)
Passenger Transport	Passenger-kilometre (passenger-km)

- **Ton-km** = Weight carried (in tons) × Distance traveled (in km)
- **Passenger-km** = Number of passengers × Distance traveled

Cost Classification

Type	Examples
Standing Charges	Insurance, taxes, license, driver salary
Running Costs	Fuel, oil, tyres
Maintenance Costs	Repairs, servicing

Transport Cost Sheet Format

Particulars	₹
Standing/Fixed Charges	
- Insurance, Road tax, Salary	xx
Running Costs	
- Fuel, Oil	xx
Maintenance Costs	
- Repairs, Depreciation	xx
Total Cost	₹xxx
Total Ton-km/Passenger-km	xxxx

Particulars	₹
Cost per unit	₹xxx / unit

Example: Transport Costing

A truck carries 5 tons for 200 km, makes 10 trips/month.

- Total ton-km = 5 × 200 × 10 = **10,000 ton-km**
- Total cost: ₹50,000
- **Cost per ton-km = ₹50,000 ÷ 10,000 = ₹5/ton-km**

Hotel Costing (Lodging & Hospitality)

A. Cost Unit in Hotel Costing

Basis	Cost Unit
Room occupancy	Room per night (room-day)
Guest occupancy	Guest per night (guest-day)

B. Classification of Costs

Type	Examples
Fixed Costs	Rent, Depreciation, Staff Salaries
Variable Costs	Electricity, Water, Laundry, Food
Semi-variable Costs	Maintenance, Supervision

C. Hotel Cost Sheet Format

Particulars	₹
Fixed Costs	
- Rent, Salaries	xx

Particulars	₹
Variable Costs	
- Electricity, Cleaning	xx
Semi-variable Costs	xx
Total Cost	₹xxx
Room-nights Available	xxx
Cost per Room-night	₹xxx

Example: Hotel Costing

- Hotel has 30 rooms.
- Occupied for 25 days in a month.
- Total costs: ₹3,75,000
- Total room-nights = 30 × 25 = **750**
- **Cost per room-night = ₹3,75,000 ÷ 750 = ₹500**

D. Objectives of Operating Costing in Services

1. Determine cost per service unit
2. Assist in pricing
3. Control efficiency
4. Enable service comparison across time/branches

Summary Table

Aspect	Transport Costing	Hotel Costing
Cost Unit	Ton-km / Passenger-km	Room-day / Guest-day
Main Fixed Costs	License, Salaries, Insurance	Rent, Staff Salaries
Main Variable Costs	Fuel, Maintenance	Utilities, Housekeeping, Food
Use	Logistics, Buses, Trucks	Hotels, Hostels, Resorts

Integral and Non-Integral Cost Accounting

Meaning

Type	Definition
Integral Cost Accounting	A system where **cost and financial accounts are integrated** into **a single unified ledger**.
Non-Integral (or Interlocking) Cost Accounting	A system where **cost accounts and financial accounts are maintained separately** in different sets of books.

Integral Accounting System

Features

- One set of books maintained
- No duplication of recording
- Cost and financial data recorded simultaneously
- Only **one Profit & Loss Account** is prepared

Advantages

- Less clerical work and duplication
- Complete and accurate reporting
- Quick decision-making
- Ideal for computerized ERP systems

Non-Integral (Interlocking) Accounting System

Features

- **Separate books** for cost and financial accounts
- Cost Ledger maintained independently
- **Cost control accounts** used to record transactions
- Two Profit & Loss A/cs may exist: one in financial books, one in cost books

Control Accounts Used

Account	Purpose
General Ledger Adjustment A/c	Link between financial and cost books

Account	Purpose
Stores Ledger Control A/c	Tracks raw material stock
Wages Control A/c	Tracks wages allocation
Factory Overhead Control A/c	Records indirect costs

Need for Reconciliation

- Since separate records are kept, profit/loss from cost and financial books may differ, requiring **reconciliation statements**.

Key Differences

Basis	Integral System	Non-Integral System
Number of Ledgers	One unified ledger	Separate cost and financial books
Profit Calculation	One profit figure	Two profit figures (Cost & Financial)
Control Accounts Needed	No	Yes
Reconciliation Needed	No	Yes
Accuracy	Higher	Needs reconciliation
Example Usage	Large integrated firms	Traditional or government setups

When to Use Which System?

Situation	Recommended System
Want simplicity and speed	**Integral**
Require detailed cost analysis separate from finance	**Non-Integral**

Summary

Topic	Integral System	Non-Integral System
One set of books	□ Yes	□ No
Separate cost ledger	□ No	□ Yes
Reconciliation required	□ No	□ Yes
Example sector	Manufacturing firms with ERP	Public sector or traditional setups

Reconciliation of cost accounting

When a company maintains Non-Integral Accounting Systems (i.e., separate cost and financial accounts), the profit or loss shown by cost accounts often differs from that shown by financial accounts.

Reconciliation is the process of identifying and explaining the reasons for the difference between profit as per cost accounts and profit as per financial accounts.

Need for Reconciliation

- To verify accuracy of costing records
- To ensure reliability of cost data for decision-making
- To reconcile differences in profit or loss
- To satisfy audit and statutory compliance

Format of Reconciliation Statement

(When Costing Profit is Given)

Start with **Net Profit as per Cost Accounts**, then:

- **Add** items that increase financial profit or decrease cost profit
- **Deduct** items that decrease financial profit or increase cost profit

Particulars	Amount (₹)
Profit as per Cost Accounts	xx
Add: Items shown only in financial accounts	
- Income (interest, rent, dividends)	xx
- Over-absorption of overheads in cost accounts	xx
- Abnormal gains (e.g., insurance claims)	xx
Less: Items shown only in financial accounts	

Particulars	Amount (₹)
- Losses (interest paid, fines, taxes)	(xx)
- Under-absorption of overheads	(xx)
- Depreciation difference (if higher in financial books)	(xx)
- Closing stock difference (if valued higher in cost)	(xx)
Net Profit as per Financial Accounts	xx

Example

Given:

- Net profit as per cost accounts: ₹80,000
- Under-absorbed overheads: ₹5,000
- Interest income (financial only): ₹2,000
- Depreciation more in financial books: ₹3,000
- Closing stock more in financial books: ₹4,000

Reconciliation:

Particulars	Amount (₹)
Profit as per Cost Accounts	₹80,000
Add:	
- Interest income (financial only)	₹2,000
- Closing stock more in financial books	₹4,000
Less:	
- Under-absorbed overheads	₹5,000
- Extra depreciation (financial books)	₹3,000
Profit as per Financial Accounts	₹78,000