



III SEMESTER BBA

STUDY NOTES

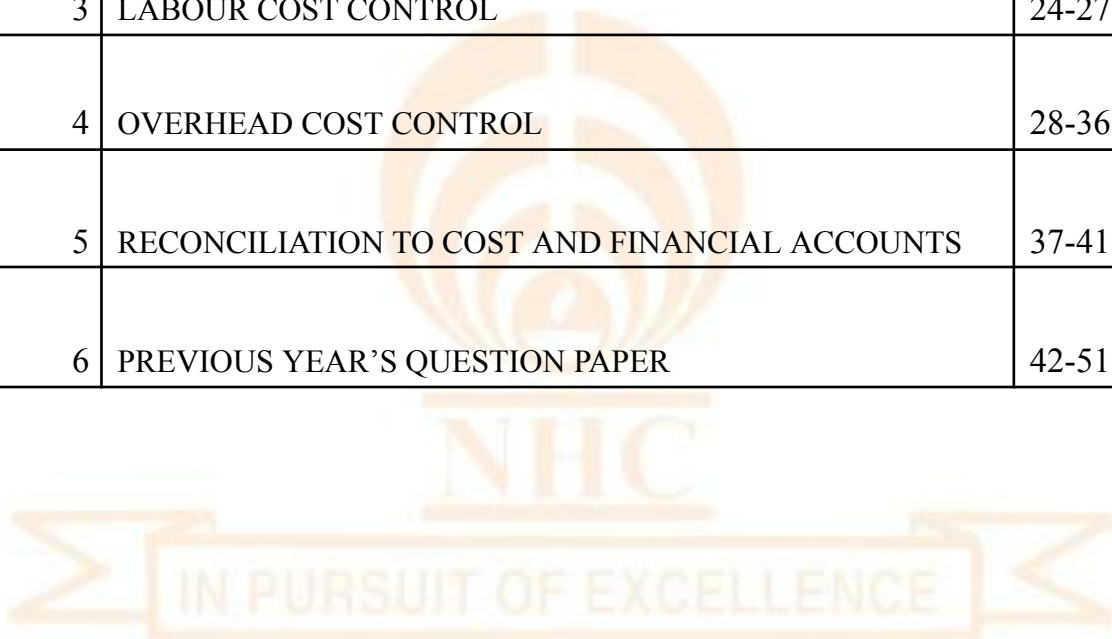
COST ACCOUNTING





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## CHAPTER -1 INTRODUCTION TO COST ACCOUNTING

### ACCOUNTING AS AN INFORMATION SYSTEM:-

Accounting serves the purpose of providing financial information relating to activities of a business. Such information is provided to shareholders, managers, creditors, tax authorities and others

Accounting may be divided into 3 categories

- Financial accounting
- Cost accounting
- Management accounting

Accounting



Financial accounting                  Cost accounting                  Management accounting

- **Financial accounting** : it is mainly concerned with recording business transactions in the books of accounts and prepare
  - (a) Profit and loss account showing the net profit or loss during the year .
  - (b) Balance sheet showing the financial position of the company at a point of time.
- **Cost accounting**: it is a branch of accounting which specializes in the ascertainment of cost of product and services.
- **Management accounting**: - it is the modern concept of accounts as a tool of management. It is concerned with all such accounting information that is useful to management.

Meaning and definition of cost, costing and cost accounting

- **COST**: Institute Of Cost and Management Accountants (ICMA) defines cost as —the amount of expenditure (actual or notional) incurred on or attributable to a given thing.||

Thus, cost is the amount consisting of

- a) Actual expenditure incurred on a given thing and
- b) Notional expenditure attributable to a given thing, notional expenditure is not actually incurred, rather it is deemed to have been incurred. It is also

called imputed cost, for example rent of the owned factory and interest on owned capital.

- **Costing** : The Chartered Institute Of Management Accountants (CIMA) of UK has defined costing as — the techniques and processes of ascertaining cost —

Thus costing simply means cost finding by any process or technique.

It consists of principles and rules which are used for determining:

- a) The cost of manufacturing a product, e.g: motor car , furniture, chemical , salt , paper etc.
- b) The cost of providing a service e.g.: electricity, transport, education etc.

- **Cost accounting:** cost accounting is a formal system of accounting for cost in the books of accounts by means of which cost of products & services are ascertained and controlled.

The Chartered Institute Of Management Accountants (CIMA) of UK has defined cost accounting as —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 center and cost units. In its widest usage, it embraces the preparation of statistical data, the application of cost control methods and ascertainment of profitability of activities carried out or planned.

### **Functions and objectives of cost accounting**

1. Ascertainment of the cost of each product, job, operation process, department or services.
2. Determining the selling price with the help of cost data.
3. To help the management in ascertaining the profitability of each product , sales area and division
4. Preparation of financial statements -- interim profit and loss account and balance sheet without stock taking
5. Helping the management in decision making:
  - a) Whether to purchase or buy
  - b) Comparative merits and demerits of different methods of production, profitability of new lines of production.
6. Cost control becomes possible with the help of budgetary control and standard costing
7. Even the government, wage boards, and trade unions are helped by costing in as much as it helps in price fixation price control.

## **Comparison between cost accounting and financial accounting**

### **Financial accounting**

### **Cost accounting**

#### **Purpose**

The main purpose of financial accounting is to prepare profit & loss a/c & balance sheet for reporting to owners or shareholders and other outside agencies

The main purpose of cost accounting is to provide detailed cost information to management

#### **Statutory requirements**

These accounts are obligatory to be prepared according to the legal requirements of company's Act and income tax act

Maintenance of these accounts is voluntary except in certain industries where it has been made obligatory to keep cost records under the company's act.

#### **Analysis of cost and profit**

Financial accounts reveal the profit and loss of the business as a whole for a particular period. It does not show the figures of cost and profit for individual products, departments and processes.

Cost accounts show the detailed cost and profit data for each product line, department, process etc.

#### **Periodicity of reporting**

Financial reports (profit and loss A/c and balancesheet) are prepared periodically usually on an annual basis.

Cost reporting is a continuous process and may be daily weekly monthly basis etc.

#### **Control aspect**

It lays emphasis on the recording of financial transactions and does not attach importance to control aspect

It provides for a detailed system of control with the help of certain special techniques like standard costing & budgetary control.

## **Format of presenting information**

It has a single uniform format of presenting information.i.e. profit and loss A/C,balance sheet.

Cost accounting has varied forms of presenting cost information and lacks a uniform format.

## **DESIGNING AND INSTALLING A COST ACCOUNTING SYSTEM.**

There is no ready-made cost system to suit each and every business. However, before a costing system is installed a preliminary investigation must be made as to the desirable conditions for the success of the system.

The following are the steps to be taken while introducing cost accounting system.

1. The objectives of the system must be ascertained.
2. Further it is necessary to ascertain the significant factors which affect the costing system and this system must cover all the functions, namely production administration, distribution etc.
3. Technical aspects must be studied thoroughly.
4. Another pre requisite to successful operation of the system is the co-ordination from the staff and from all levels of management in the organization.
5. It is necessary to standardize the forms to be used by foreman, workers etc, inorder to ensure minimum clerical work.
6. Effective arrangement is to be made to present the cost data to different levels .
7. Survey of accounting system and supervision of installation.
8. Proper supervision of the installation is also to be ensured.
9. There should be proper reconciliation of cost and financial accounts.
10. The procedures must be as simple as possible.

## **COST CONCEPTS**

Some concepts which are used in cost accounting are as follows:

**COST:** It is the amount of resources given up in exchange for some goods or services. The resources given up are expressed in monetary terms. Cost is defined as —the amount of expenditure (actual or notional) incurred or attributable to a given thing.||



1. **Expense:** Expenses are cost which has been applied against revenue of particular accounting period in accordance with the principle of matching cost to revenue.
2. **Loss:** loss is defined as —reduction in firm's equity, other than from withdrawals of capital for which no compensating value has been received.
3. **Cost Centre:** A cost centre is defined by CIMA of UK as —a location, person, or item of equipment (or group of these) for which cost may be ascertained and used for the purpose of control. Thus, a cost center refers to a section of the business to which cost can be charged. It may be a location ( a department , a sales area), an item of equipment ( a machine , a delivery van) , a person ( a salesman , a machine operator) or a group of these ( 2 machines operated by one workman). The main purpose of ascertaining the cost of a cost centre is control of cost.
4. **Profit centre:** A profit centre is that segment of activity of a business which is responsible for both revenue and expenses and discloses the profit of a particular segment of activity. Profit centers are created to delegate responsibility to individuals and measure their performance.

## **CLASSIFICATION OF COST:**

### **1. Classification Into Direct And Indirect Cost:**

(a) **Direct Cost** - these are those costs which are incurred for and conveniently identified with a particular cost unit, process or department. Cost of raw material used and wages of machine operator are common examples of direct costs.

(b) **Indirect Costs:** These Costs cannot be conveniently identified with a particular cost unit or cost centre. Depreciation of machinery, insurance, lighting, power, rent, managerial salaries are common examples of indirect cost.

### **2. Classification Into Fixed And Variable Costs:**

(a) **Fixed cost:** These costs remain constant in **total amount** over a wide range of activity for a specified period of time. i.e. these do not increase or decrease when the volume of production changes. Examples- rent and lease, managerial salaries, building insurance, municipal taxes are common examples of fixed cost.

(b) **Variable costs:** these cost tend to vary in direct proportion to the volume of output in general, variable costs shows the following characteristics.

- i. Total amount of variable cost increases or decreases in direct proportion to the volume of output.
- ii. Variable cost per unit does not change.

(c) **Semi - variable or semi fixed cost (Mixed Cost):** These costs include both a fixed and a variable component i.e. these are partly fixed and partly variable. A semi variable cost has often fixed element below which it will not fall at any level of output. The variable costs changes either at a constant rate or in lumps.

### 3. Classification into Controllable and non-controllable cost:

(a) **Controllable costs:** these are the cost which may be directly regulated at a given; level of management authority. Variable costs are generally controllable by department heads. For E.g.: cost of raw material may be controlled by purchasing in larger quantities.

(b) **Non controllable cost** - These are those costs which cannot be influenced by the action of a specified member of an enterprise. For e.g.: it's very difficult to control costs like factory rent, managerial salaries etc.

### 3. Classification Into Historical Costs And Pre-Determined Costs:-

(a) **Historical costs:** these are past costs which are ascertained after these have been incurred. Historical costs are thus nothing but actual costs. These costs are not available until after the completion of manufacturing operations.

(b) **Pre-determined costs** - these are future cost which are ascertained in advance of production on the basis of a specification of all the factors affecting cost. These costs are extensively used for the purpose of planning and control.

### 4. Classification into Normal and Abnormal Costs.

(a) **Normal cost:** Normal cost may be defined as cost which is normally incurred on expected lines at a given level of output. This cost is a part of cost of production.

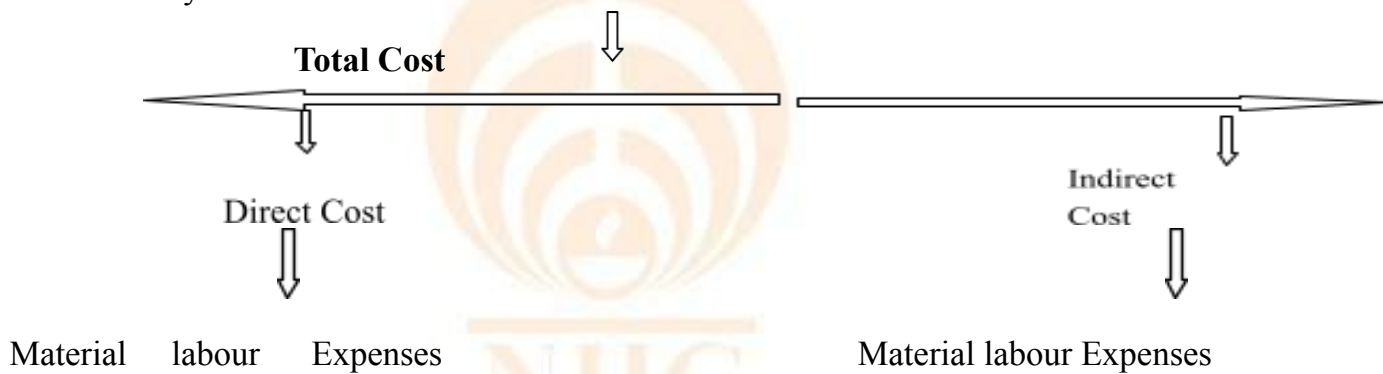
(b) **Abnormal cost:** Abnormal cost is that which is not normally incurred at a given level of output. Such cost is over and above the normal cost.

## COST UNIT

A cost unit is defined by CIMA as — a unit of product , service or time in relation to which cost may be ascertained or expressed .|| cost units are the things that the business is set up to provide of which cost is ascertained.

## ELEMENTS OF COST:

A cost is composed of three elements i.e materials, labor and expenses. Each of these elements may be direct or indirect.



**Material cost:** According to CIMA, UK material cost is —The cost of commodities supplied to an undertaking.|| material may direct or indirect.

- (a) **DIRECT MATERIAL:** direct material cost is that which can be conveniently identified with and allocated to cost units. Direct materials generally become a part of finished product .for eg clay used in bricks,leather in shoes , cloth in garment, steel in machine.
- (b) **INDIRECT MATERIAL:** These are those materials which cannot be conveniently identified with individual cost units.

**Labour Cost:** This is —the cost of remuneration (wages, salaries, commission bonus etc) of the employees of an undertakingl.

- (a) **DIRECT LABOUR:** direct labourcost consists of wages paid to workers directly engaged in converting raw materials into finished product.

(b) **INDIRECT LABOUR:** it is of general character and cannot be conveniently identified with a particular cost unit. Foreg: wages paid to supervisor,clerk,peon, watchman, cleaner etc.

**Expenses:**All costs other than material and labour are termed as expenses. It is defined as —the cost of services provided to an undertaking

(a) **DIRECT EXPENSES:** According to CIMA, UK, —direct expenses are those expenses which can be identified with and allocated to cost centres or units.¶

(b) **INDIRECT EXPENSES:** All indirect cost , other than indirect materials and indirect labour costs, are termed as indirect expenses.

### **ITEMS EXCLUDED FROM COST**

The following items are of financial nature and thus not included while preparing a cost sheet

1. Cash discount
2. Interest paid
3. Preliminary exps
4. Goodwill written off
5. Provision for tax
6. Provision for bad debts
7. Transfer to reserves
8. Donations
9. Income tax paid
10. Dividend paid
11. Profit/loss on sale of fixed assets
12. Damages payable at law.

### **DETAILED COST SHEET**

<b>PARTICULARS</b>	<b>TOTAL COST</b>	<b>UNITS PRODUCED</b>
Opening stock of direct materials		
Add: purchases		
Add : carriage inward		

Add: octroi, customs duty and other  
Expenses  
Less: closing stock of direct raw  
Materials

**Cost of raw material consumed**

Direct wages

Direct expenses

**Prime cost**

Add: works or factory overhead

Indirect materials

Indirect wages

Leave wages

Overtime premium

Fuel and power

Coal

Factory rent and taxes

Insurance

Factory lighting

Supervision

Works stationery

Canteen and welfare expenses

Repairs

Work salaries

Depreciation on plant and machinery

Work expenses

Gas and water

Drawing office salaries  
Technical directors fees  
Laboratory expenses  
Works telephone expenses  
Internal transport expenses  
Less: sale of scrap  
Add: operating stock of work in progress  
Less: closing stock of work in progress  
Work cost  
Add: office and administration overheads  
Office salaries  
Directors fees  
Office rent and rates  
Office stationery and printing  
Office expenses  
Depreciation and repairs of office equipment  
Depreciation of office furniture  
Subscription to trade journals  
Office lighting  
Establishment charges  
Directors travelling expenses  
Postage  
Legal charges  
Audit fees

**Cost of production**

Add: opening stock of finished stock

Less: closing stock of finished goods

**Cost of goods sold**

Add: selling and distribution expenses

Advertising

Showroom expenses

Bad debts

Salesmen's salaries and expenses

Packing expenses

Carriage outward

Commission of sales agents`

Expenses of delivery van

Sales managers salaries

Depreciation and repairs of delivery vans

Expenses of sales branches

Sales office expenses

**Cost of sales or total cost**

**Profit**

**Sales**

Particulars

Amount

**PROBLEMS**

Q.1 THE X Ltd supplies you the following information and requires you to prepare a cost sheet

Stock of raw materials on 1 <sup>st</sup> sept, 2013	75000
Stock of raw materials on 30 <sup>th</sup> sept 2013	91500
Direct wages	52500
Indirect wages	2750
Sales	200000
Work in progress on 1 <sup>st</sup> sept,2013	28000
Work in progress on 30 <sup>th</sup> sept,2013	35000
Purchases of raw material	66000
Factory rent, rates and power	15000
Depreciation of plant and machinery	3500
Expenses on purchases	1500
Carriage outward	2500
Advertising	3500
Office rent and taxes	2500
Travelers wages and commission	6500
Stock of finished goods on 1 <sup>st</sup> sept,2013	54000
Stock of finished goods on 30 <sup>th</sup> sept,2013	31000

Particulars	Total cost	Total cost
Opening stock of raw materials	75000	
Add: purchases	66000	
Expenses on purchase	1500	
	142500	
Less: closing stock of raw materials	(91500)	
Material consumed		51000



Direct wages		52500
	Prime cost	103500
Add: opening work in progress 1 <sup>st</sup> sept		28000
Factory overheads:		
Indirect wages	2750	
Factory rent, rates and power	15000	
Depreciation of plant and machinery	3500	21250
Less: closing stock of work in progress		(35000)
	Work cost	117750
Office and administration overheads		
Office rent and taxes		2500
	Cost of production	120250
Add: opening stock of finished goods		54000
		174250
Less closing stock of finished stock		(31000)
	Cost of goods	143250
Sold		
Selling and distribution overheads		
Carriage outward	2500	
Advertising	3500	
Travelers wages and commission	6500	12500
	Cost of sales	155750
	Profit	44250
	Sales	200000

Q.2 E.ltd furnish the following for 10000 units of a product manufactured during the year 2013

Material	90000
Direct wages	60000
Power and consumable stores	12000
Indirect wages	15000
Factory lighting	5500
Cost of rectification of defective work	3000
Clerical salaries and management expenses	33500
Selling expenses	5500
Sale proceeds of scrap	2000
Repairs , maintenance and depreciation of plant	11500

The net selling price was Rs 31.60 per unit sold. As from 1-1-2014, the selling price was reduced to 31per unit. It was estimated that production could be increased in 2014by 50%due to spare capacity.

Rates for materials and direct wages will increase by 10%.

Assume that 15000 units will be produced and sold during the year and factory overheads will be recovered as a percentage of direct wages and office and selling expenses as a percentage of work cost.

### **Cost sheet for the year 2013**

Particulars	Output:	
	Total cost	Per unit
10000units		
Material	90000	9
Wages	60000	6
	<b>Prime cost</b>	<b>150000</b>
Factory overheads		
Power and consumable stores	12000	1.2
Factory indirect wages	15000	1.5

Lighting of factory	5500	0.55
Defective work	3000	0.30
Plant repairs and maintenance	11500	1.15
	47000	4.7
Less :sale of scrap	(2000)	(0.20)
	Work cost	195000
		19.5
Office and selling overheads		
Clerical salaries	33500	3.35
Selling expenses	5500	0.55
Cost of goods sold	234000	23.40
Profit	82000	8.20
Sales	316000	31.6

### **Estimated cost sheet for the year 2014**

Output 15000units

Particulars	Total	Per unit
	Cost	
Materials(15000 x9)+10%	148500	9.90
Wages (15000 x 6) +10%	99000	6.60
	Prime cost	247000
		16.5
Factory overheads (75% of wages)	74250	4.95
	Work	321750
		21.45
Cost		
Office and selling overheads (20% of work cost)	64350	4.29
	Cost of	386100
		25.74
Sales		
Profit	78900	5.26
Sales	465000	31

Factory overheads =  $45000/60000 \times 100 = 75\%$  of wages  
Office overheads =  $39000/195000 \times 100 = 20\%$  of work cost.

## CHAPTER 2 MATERIAL COST CONTROL

Meaning of materials: the term material refers to all commodities consumed in the process of manufacturing. According to CIMA of UK, material cost is —the cost of commodities supplied to an undertaking.¶

Techniques of material control.

**ABC TECHNIQUE:** ABC technique is a value based system of material control.

—**A” items** - these are high value items which may consist of only small percentages of the total items handled. On account of their cost, these materials should be under the tightest control and the responsibility of the most experienced personnel.

**“B” items** - these are medium value materials which should be under the normal control procedures

**“C” items-** these are low value materials which may represent a very large number of items. These materials should be under the simple and economic methods of control.

The purpose of classifying stock into A, B, and C categories is to ensure that material management focuses on A items where sophisticated controls should be installed. B items may be given less attention and C items least attention.

### VED ANALYSIS

In addition to the conventional ABC analysis, VED analysis also plays an important role in material management. In VED analysis materials are classified as follows:

- (a) V stands for vital material items in the sense that when these are out of stock or when not readily available, the production activity comes to a complete halt or is drastically affected.
- (b) E stands for Essential items without which temporary losses of production or dislocation of production work occurs. Their stock -out cost is very high.
- (c) D stands for Desirable items i.e. all other items of materials which are necessary but do

not cause any immediate effect on production.

This classification is usually applied for spare parts to be stocked for maintenance of machines and equipment based on the criticality of the spare parts. However, VED analysis can be applied to any industry.

**Stock levels:** One of the major objectives of material control is to ensure that there is no understocking and overstocking. A scientific approach to achieve this objective is to adopt a system of stock levels. These levels are maximum levels, minimum levels and reorder quantity.

- A. **Maximum level:** The maximum stock level is the level above which stocks should not normally be allowed to rise. It is the maximum quantity of a material that may be held in store.

Formula:

**Maximum level =  
Reorder level + Reorder quantity - (Minimum X Minimum  
Consumption/reorder period)**

- B. **Minimum level:** Minimum level is that level below which stock should not normally be allowed to fall. In case any item of material falls below this level, there is a danger of stoppage in production and top priority should be given to the purchase of new material.

**Minimum level =  
Reorder level - (Normal X Normal reorder period)  
Consumption**

- C. **Reorder level:** This is that level of material at which a new order for material is placed. This level is above minimum level and below maximum level.

**Reorder level = Maximum consumption X maximum reorder period.**

- D. **Danger level:** This is a level at which normal issues of materials are stopped and urgent action is taken for purchase of materials so that production is not interrupted due to stoppage of materials.

**Danger level =  
= (Average or normal consumption X maximum reorder period for emergency  
purchase)**

**Average stock level:** Average stock level is calculated by the following formula:

**Average stock level = Minimum level + Maximum level / 2**

**Average stock level may also be computed by the following formula:**

**Average stock level = Minimum level + 1/2 (reorder quantity)**

## PROBLEMS:

In a manufacturing company, a material is used as follow

Maximum consumption – 12000 units per week

Minimum consumption - 4000 units per week

Normal consumption - 8000 units per week

Reorder quantity - 48000 units

Time required for delivery – Minimum 4 weeks: 4weeks, Maximum 6weeks

Calculate:

**a.** Reorder level; **b** Minimum level; **c.** maximum level ; **d.** Danger level

Solutions:

**a. Reorder level** = Maximum consumption x Maximum reorder period  
= 12000 X 6  
= **72000 units**

**b. Minimum level**= Reorder level – (Normal consumption x normal reorder period)  
= 72000 – (8000 x 5)  
= **32000 units**

**c. Maximum level**  
= Reorder level +Reorder quantity- (Minimum X Minimum Consumptionreorder period)  
= 72000 + 48000- (4000x4)  
= **104000 units**

**d. Danger level**  
= (Average or normal consumption X maximum reorder period for emergency purchase)  
= 8000 x 2 weeks = **16000 units**

**Maximum reorder period for emergency purchase = minimum level/2.**

**i.e. 4/2 = 2weeks.**

**e. Average stock level**= Minimum level +1/2 (reorder quantity)  
= 32000+1/2 (48000)  
= **56000 units**

## **PURCHASE OF MATERIAL:**

**Just In Time (JIT) purchases:** Just in time purchasing is the purchase of materials immediately before these are required for use in production. According to CIMA, London JIT purchasing is —matching receipts of materials closely with usage so that raw material inventory is reduced to near zero level. An important effect of JIT purchasing is that with frequent purchasing, the issue price is likely to be closer to market prices. In order to save on ordering cost, long term agreements may be entered into suppliers.

### **Centralized and decentralized purchasing:**

#### **Centralized Purchasing:**

In centralized purchasing, only one purchase department will be there among the companies. Let's say Pepsi companies, they may have lots of companies but will have only one purchase department to buy all the necessary materials for them. This department is headed by a purchase manager, who is responsible for all purchase procedures. In this all the materials are kept at one central store.

#### **Decentralized Purchasing:**

Decentralized purchasing is exactly reverse to centralized purchasing. In decentralized purchasing, separate stores are situated in various departments. Individual departments or companies are responsible to make their own purchase according to their requirements. In this materials are kept at separate stores.

However, centralized purchase has many advantages while comparing to decentralized purchase system. Main advantages of centralized purchasing are given below:

#### **Advantages of Centralized Purchase**

1. Materials can be purchased at cheap rate when buying in bulk quantities and also will get a good trade discount. Moreover bulk purchase always strengthens the bargaining power of the buyer.
2. Since once Purchase Manager who is a specialist in purchasing is buying the materials, quality of the materials can be maintained well.
3. Also it will enable the purchase of standardized items through standardized procedure.
4. A full-fledged store can be maintained under centralized purchase.
5. Since all the materials are stored under one store, transport cost can be reduced.
6. The receiving of large supply through consolidated orders reduces the transport cost per unit.
7. Centralized records are maintained.
8. The cost of order processing such as order placing, receiving, inspection, accounts etc are reduced substantially due to few orders of large quantities



9. Capital investment in stock is reduced.

### **Limitations of Centralized Purchase**

The centralized purchasing suffers from the following limitations:

1. It involves high initial cost.
2. There may be delay in getting the material from the central store to the branches, because many formalities and approvals are to be complied with before issuance of any material.
3. It is possible that materials of wrong quality may be issued.
4. There is a possibility that the centralized buying staff may not be expert in buying varied types of items.

### **INVENTORY SYSTEM:**

There are two inventory systems

1. Periodic inventory system and
2. Perpetual inventory system

**Periodic inventory:** A periodic inventory review system is one where inventory is checked and reordered at a set time interval (e.g. weekly). In this case the quantity ordered varies based on the amount of inventory on hand following the review. The danger of this system is that inventory is not being checked until the review system. The benefit is that since inventory levels are only checked periodically.

**Perpetual Inventory system:** The perpetual inventory system is intended as an aid to material control. It is a system of stock control followed by stores department. The system follows a method of recording stores by which information about each receipt, issue and current balance of stock is always available.

The Institute of Cost and Management Accountants of England and Wales, defines perpetual inventory as "A system of records maintained by the controlling department, which reflects the physical movement of stocks and their current balances."

### **METHODS OF PRICING MATERIAL ISSUES:**

#### **1. First in First out Method (FIFO)**

Under this method materials are used in the order in which they are received. In other words, materials received first are issued first. This process is repeated throughout.

The price of the earliest consignment is taken first and when that is exhausted, the price of the next consignment is adopted. This method is most suitable when the material is slow moving and has comparatively high unit cost. This method is also useful in times of falling

prices because the issue price of material to the job will be high while the replacement cost of material will be below.

## 2. Last in First Out Method: (LIFO)

This method is exactly the opposite of FIFO method. Under this materials received last are issued first. The price of the material to be issued would be the cost price of the last lot of materials purchased.

This method is useful during the period of rising prices because materials will be issued from the latest consignment at a price which is closely related to the current price levels. Under this method product' cost is calculated on a basis which approximates to replacement cost.

## 3. Simple Average Price Method

Under this method, materials issued are valued at average price. This is calculated by dividing the total of the price of the materials on the stock from which the material to be priced could be drawn by the number of prices used in that total

4. **Weighted Average Method:** Under the weighted average approach, both inventory and the cost of goods sold are based upon the average cost of all units currently in stock at the time of reporting. This approach will more closely resemble FIFO.

## PROBLEMS:

The following transactions occur in the purchase and issue of material.

Jan 2	Purchased	4000units	@ 4 per unit
Jan 20	Purchased	500units	@5 per unit
Feb 5	Issued	2000units	
Feb 10	Purchased	6000 units	@ 6 per unit
Feb 12	Issued	4000 units	
Mar 2	Issued	1000 units	
Mar 5	Issued	2000 units	

Mar 15                      Purchased                      4500 units                      @ 5.50 per unit  
 Mar 20                      Issued                      3000 units

From the above, prepare the Stores Ledger Account, using FIFO method and other methods.

**Solution:**

**FIFO method**

**Store Ledger Account**

Date	Receipts			Issues			Balance		
	Qty.	Rate	Amt.	Qty.	Rate	Amt.	Qty.	Rate	Amt.
2-Jan	4,000	4.00	16,000	-	-	-	4000	4.00	16,000
20-Jan	500	5.00	2,500	-	-	-	{4000	4.00	16,000
							500	5.00	2500
5-Feb	-	-	-	2,000	4.00	8,000	{2000	4.00	8,000
							500	5.00	2,500
10-Feb	6,000	6.00	36,000	-	-	-	{2,000	4.00	8,000
							500	5.00	2,500
							6,000	6.00	36,000
12-Feb	-	-	-	4,000					
				{2000	400	8,000			
				500	5.00	2,500			
				1,500	6.00	9,000	4,500	6.00	27,000
2-Mar	-	-	-	1000	6.00	6,000	3,500	6.00	21,000
5-Mar	-	-	-	2000	6.00	12,000	1,500	6.00	9,000
15-Mar	4,500	5.50	24,750				{1500	6.00	9,000
							4,500	5.50	24,750
20-Mar	-	-	-	3,000					
				{1,500	6.00	9,000			
				1,500	5.50	8,250	<b>3,000</b>	<b>5.50</b>	<b>16,500</b>

**LIFO method**

**Store Ledger Account**

Date	Receipts			Issues			Balance		
	Qty.	Rate	Amt	Qty.	Rate	Amt	Qty.	Rate	Amt
2-Jan	4,000	4.00	16,000	-	-	-	4000	4.00	16,000
20-Jan	500	5.00	2,500	-	-	-	{4000	4.00	16,000
							500	5.00	2,500
5-Feb	-	-	-	2,000					
				{500	5.00	2,500			
				1500	4.00	6,000	2,500	4.00	10,000
10-Feb	6,000	6.00	36,000	-	-	-	{2500	4.00	10,000
							6000	6.00	36,000
12-Feb	-			4,000	6.00	24,000	{2500	4.00	10,000
							2,000	6.00	12,000
2-Mar	-	-	-	1000	6.00	6,000	{2500	4.00	10,000
							1000	6.00	6,000
5-Mar	-	-	-	2000					
				{1000	6.00	6,000			
				1000	4.00	4,000	1,500	4.00	6,000
15-Mar	4,500	5.50	24,750				{1500	4.00	6,000
				-	-	-	4,500	5.50	24,750
20-Mar	-	-	-	3,000	5.50	16,500	{1,500	4.00	6,000
							1,500	5.50	8,250

### Simple Average method

#### Stores Ledger Account

Date	Receipts			Issues			Balance		
	Qty. Units	Rate	Amt	Qty. Units	Rate	Amt	Qty. Units	Rate	Amt
2-Jan	4,000	4.00	16,000	-	-	-	4,000	4.00	16,000
20-Jan	500	5.00	2,500	-	-	-	4,500	-	18,500
5-Feb	-	-	-	2,000	4.50	9,000	2,500	-	9,500
10-Feb	6,000	6.00	36,000	-	-	-	8,500	-	45,500
12-Feb	-	-	-	4,000	5.00	20,000	4,500	-	25,500
2-Mar	-	-	-	1,000	6.00	6,000	3,500	-	19,500
5-Mar	-	-	-	2,000	6.00	12,000	1,500	-	7,500
15-Mar	4,500	5.50	24,750	-	-	-	6,000	-	32,250
20-Mar	-	-	-	3,000	5.75	17,250	3,000	-	15,000

### Weighted Average method

#### Stores Ledger Account

Date	Receipts			Issues			Balance		
	Qty. Units	Rate	Amt	Qty. Units	Rate	Amt	Qty. Units	Rate	Amt
2-Jan	4,000	4.00	16,000	-	-	-	4,000	4.000	16,000
20-Jan	500	5.00	2,500	-	-	-	4,500	4.111	18,500
5-Feb	-	-	-	2,000	4,111	8,222	2,500	4.111	10,278
10-Feb	6,000	6.00	36,000	-	-	-	8,500	5.445	46,278
12-Feb	-	-	-	4,000	5.445	21,780	4,500	5.445	24,498
2-Mar	-	-	-	1,000	5.445	5,445	3,500	5.445	19,053
5-Mar	-	-	-	2,000	5.445	10,890	1,500	5.445	8,163
15-Mar	4,500	5.50	24,750	-	-	-	6,000	5.486	32,913
20-Mar	-	-	-	3,000	5.486	16,457	3,000	5.486	16,456

## **CHAPTER -3 LABOUR COST CONTROL**

### **MEANING:-**

#### **Direct Labour:**

labour involved in production rather than administration, maintenance, and other support services. Direct costs include wages for the employees physically making a product, like workers on an assembly line.

#### **Indirect labour:-**

It refers to that labour which cannot be conveniently identified with a particular cost centre or cost unit. Indirect costs are associated with support labor, such as employees that maintain factory equipment but don't operate the machines themselves

#### **Idle time:-**

It is the time during which the workers remain idle (do not work) but wages are paid. In other words it is the time for which wages are paid but from which no production is obtained. It is the difference between the time for which the workers are paid and the time which they actually spent on production.

#### **Difference between Time rate system and Piece rate system.**

##### **Time rate system**

##### **Piece rate system**

Workers are paid on the basis of their

Workers are paid on the basis of output

attendance, time in the factory.

This system does not encourage the workers to improve their efficiency

Wages are paid to the worker even for idle time

This system guarantees certain minimum wages to workers

It does not cause any disparity in the earnings of the workers of the same category

produced by them.

It encourages the workers to improve their efficiency so as to earn more.

Wages are not paid for the idle time of the worker

It does not guarantee any minimum wages to workers.

This does cause disparity in the earnings of the workers of the same category as the earnings of the workers is related to their output.

## Formulas

1. Time rate system = total hours worked  $\times$  rate/hour
2. Piece rate system = total no. of units  $\times$  rate/unit.

## Incentive schemes

1. **Halsey plan:** A mechanical engineer F.A. Halsey devised this plan. It is a simple combination of the time-speed basis of payment. The worker gets his wages for the time he works. For the calculation of premium, a standard time is fixed for each job on the basis of past performances. If the worker finishes the job before this standard fixed time, he gets bonus for the time saved by him.

The rate of bonus is 50% of the wage payable for the time saved. Suppose a worker gets his wages @ 60 paise per hour. He finishes his work in 15 hours for standard time fixed is 20 hours. Thus he saves 5 hours. He will get a total wage of Rs. 10.50.

This is worked out as below :

Wage for 15 hours @ 60 paise = Rs. 9.00

Wages for 5 hours (the time saved) @ 50% of the usual hourly rate = Rs. 1.50

$9 + 1.5 = \text{Rs. } 10.50$

He will get Rs. 10.50 and will also earn something more by utilising the time saved i.e., 5 hours.

Merits

The chief merits of this plan are:

- (1) Slow workers are guaranteed a fixed time wage.
- (2) Efficient workers get extra wage.
- (3) It is an easy and simple device of introducing efficiency. Demerits

(1) But the worker gets only 50% benefit of his efficiency. It is said that he can earn in the saved time, but where is the work.

(2) The quality of the work is not cared for and the waste of material increases.

2. **Rowan plan:** It was introduced by James Rowan of David Rowan & Sons, Glasgow in 1901. It is modification in the Halsey's Plan. The premium is calculated on a percentage of wages for the time worked and not for the time saved. This gives more bonus to the workers. It is calculated by the following formula:

Time taken

Bonus = Time Saved X standard time Hourly Rate

Thus, if the worker finishes the job in 15 hours for standard time of 20 hours and the hourly rate of wage is 60 paise, a worker will get a total of Rs. 11.25.

Merits

(1) The total bonus earned does not increase in the same proportion in which efficiency increases and thus there is no possibility of over-spending.

(2) There is less cost on supervision.

(3) The plan is good for beginners and learners.

(4) There is no inducement to the worker to rush through the work.

Demerits

(1) No difference is made between efficient and inefficient worker.

(2) It is difficult for the workers to understand.

3. **Taylor plan:** Taylor's differential Piece Rate System—As a part of scientific management, this plan was devised by Taylor with a view to provide greater incentives to efficient workers. Under this plan, a standard task is established by the techniques of time and motion study and two piece rates are set up for each job. A high piece rate is allowed to those who can make equal to higher than the standard performance; and for others who cannot reach the standard, a lower piece rate exists. Thus, this method penalizes the slow and lazy worker and pays incentive to efficient workers.

Merits

It makes a distinction between efficient and inefficient workers. Lazy and inefficient workers are penalized, while efficient workers are rewarded.

The basis of this system is scientific. It is based on proper work study.

It helps in spotting and eliminating inefficient workers.

Demerits

(1) A worker missing the standard even by narrow margin is penalized heavily.

(2) It is more mechanical and less humane.

(3) Trade unions oppose this plan.

(4) It may lead to discontentment among workers.

**Halsey plan:**

**Bonus = 50% (Time saved x Rate per hour)**



**Total earnings = (Time taken x rate per hour) + Bonus**

**Where time saved = Standard time – Time taken.**

**Rowan Plan:**

**Bonus =  $\frac{\text{Time saved}}{\text{Time taken}} \times \text{Rate per hour}$**   
**Standard time**

**Total earnings = (Time taken x rate per hour) + Bonus.**

**Problems:**

Q.1 Using a Taylor's plan, calculate the earnings of workers from the following information.

Normal rate per hour = Rs 12. Standard time per piece = 20 min. In a 9 hour day, A produces 26 units and B produces 30 units.

**Solutions**

Standard production per hour =  $\frac{60 \text{ minutes}}{20 \text{ minutes}} = 3 \text{ units}$

Standard production per day =  $3 \text{ units} \times 9 \text{ hours} = 27 \text{ units}$

Piece rate =  $12 \div 3 \text{ units} = 4 \text{ per unit}$

Lower piece rate =  $4 \times 83\% = 3.32$

Higher piece rate =  $4 \times 175\% = \text{Rs } 7$

Efficiency of worker A =  $\frac{26 \text{ units}}{27 \text{ units}} \times 100 = 96.30\%$

It is less than 100% and thus will be paid at a lower piece rate of Rs 3.32 per unit

Efficiency of B =  $\frac{30 \text{ units}}{27 \text{ units}} \times 100 = 111.11\%$

It is more than 100% hence will be paid at a higher piece rate of Rs 7 per unit.

Wages of B =  $30 \text{ units} \times 7 = \text{Rs } 210$ .

Q.2 Standard time fixed for a job in a manufacturing concern is 40 hours. Time rate is 60 paise per hour. The actual time taken by the workers A, B and C is 20 hours, 15 hours and 30 hours respectively.

**Problem:** Calculate total remuneration of A, B and C on the basis of

a. Halsey plan and b. Rowan plan.

### Calculations of Total Wages

Particulars	workers		
	A	B	C
standard time	40	40	40
less: Actual time (hrs)	20	15	30
Time saved	20	25	10
	Rs	Rs	Rs
(A) Time wages @ 60paise per hour for actual time	12	9	18
(B) Bonus- Halsey plan (50% of time saved @0.6 per hour)	6	7.5	3
( C ) Bonus - Rowan plan ( <u>Time taken</u> x Time saved x 0.6) st. time	6	5.63	4.5
Total Wages:			
Halsey Plan (A+ B)	18	16.5	21
Rowan Plan (A+C)	18	14.63	22.5

## CHAPTER 4: OVERHEAD COST CONTROL

### MEANING AND DEFINITION OF OVERHEADS

The terminology of CIMA defines overheads as —the total cost of indirect materials, indirect labour and indirect expenses.

Some costs in an organization are indirect in nature. They cannot be allocated easily to the product, job or process. Besides this, some expenses that are incurred on material labour cannot be economically identified with specific saleable units. Such costs are referred to as —overhead costs. These overhead costs are also known as —convenience

costs. Overheads include the following:

Indirect materials.

Indirect labour.

All indirect expenses that cannot be charged to a product or job or process. For example, expenses incurred for maintenance, supervision, rent, rates and taxes, lubricants and cleaning materials, personnel department and sales department which cannot be easily identified with the cost units produced.

## CLASSIFICATION OF OVERHEADS

Classification is the process of grouping costs depending upon their common characteristics. Overheads have to be classified in order to ascertain cost, product pricing, planning and control.

Classification may be defined as, —the arrangement of items in logical groups having regard to their nature (subjective classification) or the purpose to be fulfilled (objective classification)ll.

Overhead costs may be classified as follows:

1. Functional classification.
2. Element-wise classification.
3. Behavior-wise classification.

## DISTRIBUTION OF OVERHEADS

Distribution of overheads is the division of total overheads in an equitable manner to each unit of the cost object. The cost object may be a process, a unit of production, a production order and so on. The distribution of overheads is a four-stage process, as explained in the following:

### STAGE I-ALLOCATION

Allocation involves the identification of overheads with a given cost center.

Cost allocation may be defined as —the charging of discrete, identifiable items of costs to cost centers or cost units. Where a cost can be clearly identified with a cost center or cost unit, then it can be allocated to that particular cost center or cost unitll.

An organization must try to allocate as many items as possible.

### STAGE II-APPORTIONMENT

Certain items of cost cannot be identified with any particular cost centers or costs units, such items cannot be allocated rather they have to be apportioned to various costs or cost units by using some Suitable basis. Below is the list of basis of apportionment:

Name Of Overhead	Basis Of Apportionment
Rent	Area covered
Repairs	Value of plant
Lighting and electricity	No of light points OR area
Depreciation	Value of asset



Stores overhead	Direct material
General overhead/ overhead Supervision	Direct wages
Insurance scheme / welfare scheme for employees / canteen	No of employees
Insurance	No of employees
Power	Value of stock
	Horse power of machine OR machine hours

### STAGE III-RE-APPORTIONMENT

It is not possible to quantify the output of the service department .In other words as there is no production happening in the service department, we need to distribute their overhead expenses among the production department.

Methods of re-apportionment of service department cost:

- 1 Repeated distribution method
- 2 Simultaneous equation method

### **Problem on apportionment and re-apportionment**

1. A firm has three production department A, B& C and two Service Departments X & Y. The following figures are extracted from the books of the firm.

Depreciation	Rs.4000	Indirect Wages	Rs. 600
Lighting	Rs. 240	Power	Rs. 600
Rent	Rs. 2000	Others	Rs. 4000

	A	B	C	X	Y
Floor space (Sq. feet)	400	500	600	400	100
Direct Wages (Rs)	900	900	900	900	700
Light Points	20	30	40	20	10
H.P. of the Machines	75	30	25	10	
Value of Machine (Rs)	12000	16000	20000	1000	1000
Working Hours	3,113	2,014	2,033		
	1000				

The Expenses of service Department S and Y are to be allocated as follows

	A	B	C	X	Y
X	20%	30%	40%		10%
Y	40%	20%	20%	20%	

You are required to distribute the service Departments expenses to the production Department (A, B & C) and calculate hourly rate of each production Department.

**Solution:**

**Primary Overhead Distribution Summary**

Item	Basis	Total	Production Dept.			Service Dept.	
			A RS	B Rs.	C Rs.	X Rs.	Y Rs.
1. Depreciation	Machine Value	4,000	960	1,280	1600	80	80
2. Lighting	Light Point	240	40	60	80	40	20
3. Rent	Floor Space	2,000	400	500	600	400	100
4. Indirect Wages	Direct Wages	600	135	90	135	135	105
5. Power	H.P.	600	321	129	107	43	
6. Others	Direct Wages	4,000	900	600	900	900	700
7. Direct Wages	Actual	1,600				900	700
<b>Total</b>		<b>13,040</b>	<b>2756</b>	<b>2659</b>	<b>3422</b>	<b>2498</b>	<b>1705</b>

**Secondary Overhead Distribution Summary and Calculation of Hourly Rate  
(Repeated Distribution Method)**

Particular's		A Rs.	B Rs.	C Rs.	X Rs.	Y Rs.
Totals as per Primary Summary		2756	2659	3422	2498	1705
Department	X	500	749	999	(-) 2498	250
	Y	782	391	391	391	(-) 1955
	X	78	117	157	(-) 391	39
	Y	15	8	8	8	(-) 39
	X	2	3	3	(-) 8	
(A) Total Overhead		4133	3927	4980		
(B) Working Hours		3113	2014	2033		
Hourly Rate (A+B) RS.		1.33	1.95	2.45		

**Problem on Repeated distribution method and simultaneous equation method**

1. A factory has three production Departments and two service Departments. The overhead department distribution summary shows the following:

Department	Rs.
A	6, 50,000
B	6, 00,000
C	5, 00,000
P	1, 20,000
Q	1, 00,000.

Service Department expenses are allotted on a percentage basis as follows:

	Production Department			Service Department	
	A	B	C	P	Q
Service Department P	30%	40%	15%	-	15%
Service Department Q	40%	30%	25%	5%	-

Show how the expenses of the two service departments are to be charged to the production departments under:

- Repeated distribution method
- Simultaneous distribution method

**Solution:-**

	Production Dept.			Service Dept.	
	A RS	B Rs.	C Rs.	P Rs.	Q Rs.
Totals as per Primary Summary	6,50,000	6,00,000	5,00,000	1,20,000	1,00,000
Service Department P	36,000	48,000	18,000	(-) 1,20,000	18,000
Service Department Q	47,200	35,400	29,500	5,900	(-)118,000
Service Department P	1,170	2,360	885	(-)5,900	885
Service Department Q	354	266	221	44	(-) 885
Service Department P	13	18	7	(-)44	6
Service Department Q	3	2	1		(-)6
<b>Total</b>	<b>7,35,340</b>	<b>6,86,046</b>	<b>5,48,615</b>		

**Notes:** 1. Fractions have been avoided as this method itself given only approximately results.  
2. Students are advised to solve this problem by simultaneous Equations' Methods and

Check the answers

**(B) Simultaneous Equation Method**

Let X= overhead of service department P

Y= overhead of service department Q

$$X = 120000 + 5\% \text{ of } y$$

$$Y = 100000 + 15\% \text{ of } X$$

$$X = 120000 + 0.05 Y$$

$$Y = 100000 + 0.15 X$$

$$X - 0.05Y = 1,20,000$$

$$-0.15X + Y = 100,000$$

Multiplying Equation (II) by 0.05 and add

$$X - 0.05 Y = 120000 \quad (i)$$

$$-0.0075X + 0.05 Y = 5000 \quad (ii)$$

$$0.9925X = 125000$$

$$X = 1,25,944.58$$

Substituting the value of x in equation (i)

$$125944.58 - 0.05 Y = 120000$$

$$Y = 118891.60$$

This over head of department P= Rs 1,25,944.58 or Rs 125945 (Approx.)

Overhead of department Q = Rs 118891.60 or Rs 118892 (Approx.)

### Secondary Overhead Distribution Summary

	Production Department		
	A Rs.	B Rs.	C Rs.
Total as per Primary Distribution	6,50,000	6,00,000	5,00,000
Overheads of Department P (30%, 40% and 15% of Rs 1,25,945)	37,783	50,378	18,892
Overheads of Department Q (40%, 30% and 25% of Rs 1,18,892)	47,557	35,668	29,723
Total	7,35,340	6,86,046	5,48,615

NOTE: students can notice that total overhead of production department A, B and C is same under both the methods

### STAGE IV-ABSORPTION

Absorption of overhead is the final step in overhead accounting. Absorption can be defined as allotment of apportioned overhead to do the constituents. In other words absorption is refers to the process of charging overhead to the cost center to the products produced in that center to the services rendered by that Centre.



## Methods of absorption

### 1) Rate per Unit of Output

Under this method overhead is expressed in terms of per-unit applying the following formula:

$$\text{Overhead per unit} = \text{overhead} / \text{number of units produced}$$

### 2) As a percentage of material cost

This method is based on the assumption that material cost is the most important element of cost and cost vary in direct proportion to material cost.

This method of absorption is used to recover the following types of overhead. Material handling cost including cost of purchasing, testing, storing, internal transportation etc.

Example overhead Rs 40000, material cost Rs 30000. The absorption rate of overhead as a percentage of material cost is

$$\begin{aligned} \text{Percentage of material cost} &= \text{overhead} / \text{material cost} \times 100 \\ &= 40000/30000 \times 100 = 133.33\% \end{aligned}$$

### 3) As a percentage of direct labor cost

This method is used when labor cost is the most important element of cost  
Example overhead Rs 25000, Direct Labour cost Rs 50,000

$$\begin{aligned} \text{Percentage of direct Labour Cost} &= \text{overhead} / \text{direct labour cost} \times 100 \\ &= 25000/50000 \times 100 = 50\% \end{aligned}$$

### 4) Prime cost percentage method

Under this method overhead incurred in the department will be expressed as a Percentage of prime cost this; method is also called direct cost percentage method.

Example: overheads of department B is Rs 17,500, direct material is Rs 20,000, Direct

Labour Rs 25,000 and Direct expenses Rs 5,000; Absorption the overhead as a Percentage of Prime cost

$$\text{Prime cost} = \text{Direct Material} + \text{Direct Labour} + \text{Direct Expense}$$

$$\begin{aligned} \text{Percentage of prime cost} &= \text{overhead} / \text{prime cost} \times 100 \\ &= 17,500/50,000 \times 100 = 35\% \end{aligned}$$

### 5) Labour hour rate

This method involves finding out overhead per labour hour rate.

Example; the overhead of production department C is Rs 65,000. The department works for 25 days in a month at the rate of 8 hours in a day. The department consists of 50 employees. What is labour hour rate?

$$\begin{aligned}\text{Labour hour rate} &= \text{overhead/labour hours} \\ &= 65,000 / 8 \text{ hours} \times 25 \text{ days} \times 50 \text{ workers} \\ &= \text{Rs } 6.5 \text{ per hour}\end{aligned}$$

### **6) Machine hour rate method**

This method is used in those operations where use of machines is very prominent. This method involves finding out the overhead incurred for running a machine for one hour. In other words the total of overheads relating to a machine will be divided by the number of hours machine is run.

#### **MACHINE HOUR RATE**

Machine hour rate may be of two types;

##### **1) Ordinary machine hour rate.**

It is calculated on the basis of actual machine expenses, actual machine expenses are those which are completely chargeable to a particular machine in other words ordinary machine Hour rate is calculated on the basis of expenses which are allocated to particular machine.

##### **2) Composite machine hour rate:**

It is calculated on the basis of common expenses which are incurred for more than one machine. When the direct wages of machine operators are included in machine hour rate, it is called comprehensive or composite machine hour rate. Thus in a comprehensive machine hour rate, overhead and direct wages are absorbed by a single rate.

### **Problem: 1, on machine hour rate**

The following particulars relate to processing machine treating a typical material:

- a) Cost of machine           Rs 10000
- b) Estimate Life            10 Years
- c) Scrap Value              1000
- d) Yearly working time (50 weeks of 44 hours each) -2200 hours
- e) Machine maintenance 200 hours p.a
- f) Setting up time estimate at 5% to total productive time and is regarded as productive time
- g) Electricity is 16 units per hour at 10 paisa per unit
- h) Chemical required weekly Rs 20
- i) Maintenance cost per year Rs 12000
- j) Two attendants control the operations of machine together with 6 other machines. Their combined weekly wages are Rs 140
- k) Departmental overhead allocated to this machine per annum Rs. 2000

You are required to calculate the machine hour rate

### Computations of Machine Hour Rate

Particulars	Per Year (Rs)	Per Hour (Rs)
Standing Charges		
Department Overhead	2,000	
Attendant's Wages (140 X 50÷7)	1000	
	3,000	
Standing Charges per Hour (Rs 3000 ÷ 2000 Hours)		1.50
Operating Charges		
1. Depreciation $\frac{10000-1000}{2000 \times 10}$		0.45
2. Maintenance (1200 ÷ 2000)		0.60
3. Chemical $\left[ \frac{20 \times 50}{20000} \right]$		0.50
4. Power (16 Units @ 10 paisa per unit)		1.60
<b>Machine Hour Rate</b>		4.65

**Working Note:** Calculation of the Effective Hours

Total Machine Hours (50 x 44)	2200
Less Maintain Hours	200
Effective Working Hours	2000

As setting up time is given as productive time, it is not deducted in calculating Effective hrs.

### **Problem No: 2**

2. From the data given below, calculate the machine Hour rate: Per annum

Rent of the department (space occupied by machine 1/5 <sup>th</sup> of the department)	780
Lighting (number of men in the department 12, two men engage on this machine)	288
Insurance etc.	36
Cotton, waste, oil etc.	60
Salary of foreman (one – fourth of the foreman's time is occupied by this machine And the remainder equally by other two machine)	6000
The cost of the machine is Rs 9200 and it has an estimated scrap value of Rs 200	

It is ascertained from past experience:

- I. That the machine will work for 1800 hours per annum

- II. That it will incur an expenditure of Rs 1125 in respect of repairs and maintenance.
- III. That it consumes 5 units of power per hour at cost of 16 paise per unit
- IV. That the working life of the machine will be 18000 hours.

**Solution:**

	Per year	Per Hour
<b>Standing charges</b>		
Rent (780x1/5)	156.00	
Lighting (288x2/12)	48.00	
Foreman's Salary (6000x1/4)	1500.00	
Insurance	36.00	
Cotton waste etc.	60.00	
Total Yearly Charges	1800.00	
Hourly Rent (Rs 1800 ÷ 1800 hrs.)		1.00
<b>Variable Expenses</b>		
9200-200 _____		0.50
Depreciation 18000 hrs.		
Repairs (Rs 1,125 ÷ 18000 hrs)		0.06
Power 5 units @ 6 paise per unit		0.80
<b>Machine Hour Rate.</b>		<b>2.36</b>

**Note:** It is assumed that setting up time of 200 hours is unproductive and thus effective hours are 2,200 – 200 = 2,000

## CHAPTER 5: RECONCILIATION OF COST AND FINANCIAL ACCOUNTS

### Meaning

In business concern, where Non-integrated Accounting System is followed. Cost and financial Accounts are maintained separately, the difference between the endsresults of these two are required to be reconciled. Reconciliation of cost and financial accounts mean tallying the profit or loss revealed by both set of accounts. The chief aim is to find out the reasons for the difference between the results shown by Cost Accounts and Financial Accounts.

### Reasons for the Difference

The various reasons which create difference between cost and financial profit or loss shown by the two set of books may be listed under the following heads:

- (1) Items shown only in Financial Accounts
- (2) Items shown only in Cost Accounts
- (3) Absorption of Overheads
- (4) Methods of Stock Valuation
- (5) Abnormal Loss and Gains

- (1) **Items shown only in Financial Accounts:** Some items of income and expenses which are included only in financial accounts but are not shown in cost accounts and vice versa. The following items are shown in financial accounts but not in cost accounts:

**(A) Income:**

- (1) Profit on sale of fixed assets
- (2) Interest received on investment
- (3) Dividend received on investment
- (4) Rent, brokerage and commission received
- (5) Premium on issue of shares
- (6) Transfer fees received.

**(B) Expenditure:**

- (1) Loss on sale of fixed assets, e.g., Plant, Machinery, Building etc.
- (2) Interest paid
- (3) Discount paid
- (4) Dividend paid
- (5) Losses due to scrapping of plant and machinery
- (6) Penalties and, fines
- (7) Expenses of shares' transfer fees
- (8) Preliminary expenses written off
- (9) Damages payable at law.

- (2) **Items shown only in Cost Accounts:** There are some items which are recorded only in Cost Accounts but are not included in financial accounts, notional interest on capital, notional rent of premises owned, salary to proprietor etc. are not recorded in financial account because the amount is not actually spent or paid. These expenses reduced the profit in cost account while in financial account it may be the reverse effect.
- (3) **Absorption of Overheads:** In financial accounts actual amount of expenses paid are recorded while in cost accounts overheads are charged at predetermined rates. If overhead charged are not equal to the amount of overhead incurred the under or over absorption of overhead leads to difference in profits of two accounts.
- (4) **Methods of Stock Valuation:** The term stock refers to opening or closing stock of raw materials, work in progress and finished goods. In financial accounts stocks are valued at cost price or market price whichever is lower. In Cost Account; stock of raw materials can be valued on the basis of FIFO, LIFO and Simple Average Method etc., and work in progress may be valued at Prime Cost or Work Cost. Finished stocks are generally valued on the basis of cost of production. Thus, the adaptation of different method of valuation of stock leads to difference in profits of two sets of accounts.
- (5) **Abnormal Losses and Gains:** Different items of abnormal wastages, losses or gains which are included in financial accounts but are not recorded in cost accounts. Thus, the figures of abnormal losses and gains may affect the results in financial accounts alone.

## Importance of Reconciliation

Reconciliation of cost and financial account is necessary for the following reasons:

- (1) To ensure arithmetical accuracy of both set of accounts for effective cost ascertainment and cost control.
- (2) To identify the reasons for different results in two sets of accounts.
- (3) To evaluate the reasons for variations for effective internal control.
- (4) To enable the smooth co-operation and co-ordination between the activities of cost and financial accounting departments.
- (5) To ensure the standardization of policies relating to stock valuation, depreciation and absorption of overheads.

## Methods of Reconciliation

For reconciling, the profit or loss as disclosed by the financial accounting with that shown by the cost accounting. A Reconciliation Statement or Memorandum of Reconciliation Account is prepared.

The following steps have to be taken for preparation of Reconciliation Statement:

- (1) Ascertain the extent of difference between the profit or loss disclosed by two set of book of accounts.
- (2) Take the base profit or loss as per any set of books (either cost or financial) of accounts as the starting point.
- (3) Prepare a statement by making suitable adjustment of items either added or subtracted included in one set of accounts but not in the other set.
- (4) In other words, balances as per cost account has been taken as the starting point, then balance as per financial account is to be adjusted according to the transaction recorded in the financial accounts and vice versa.

### The preparation of cost reconciliation statement involves the following steps:

**Step 1:** Start with profit or loss shown by any one set of accounts (profit or loss as per cost accounts or financial accounts) as the base

**Step 2:** Find out the reason of difference of profit between cost and financial account (You are requested to refer above post 'Causes or reasons of difference in profits')

**Step 3:** Determine the addition or subtract (less) items

**Step 4:** Prepare cost reconciliation statement

### Taking the profit as per cost account or loss of financial account

Particulars	Amount
Profit as per cost account or loss as per financial account	XXX
<b>Add:</b>	
i. Overcharge of expenses in cost account	XXX

ii. Items of expenses recorded only in cost account

XXX

iii. Items of income recorded only in financial account	XXX
iv. Amount of understated income in cost account.	XXX
v. Over-valuation of opening stock in cost account	XXX
Vi. Under valuation of closing stock in cost account	XXX
<b>Less:</b>	
i. Under charge of expenses in cost account	(XXX)
ii. Items of expenses recorded only in financial account	(XXX)
iii. Income shown in cost account, but not in financial account	(XXX)
iv. Amount of income over state in cost account	(XXX)
v. Under valuation of opening stock in cost account.	(XXX)
vi. Over valuation of closing stock in cost account	(XXX)
Profit as per financial account or loss as per cost account	XXX

### Problems on reconciliation

- 1 From the following figures, prepare a reconciliation statement and determine the financial profits:

	Rs
Net Profit as per costing books	66,760
Factory overhead under- recovered in costing	5,700
Administration overhead recovered in excess	4,250
Depreciation charged in financial books	3,660
Depreciation recovered it costing	3,950
Interest received but not included in costing	450
Income – tax provided in financial books	600
Bank interest credited in financial books	230
Stores adjustment (credited in financial books)	420
Depreciation of stock charged in financial account	860
Dividends appropriated in financial account	1,200
Loss due to theft and pilferage provided in financial books	260

### **Reconciliation Statement**

	Rs	Rs
<b><u>Profit as per costing Books</u></b>		66,760
Add: 1. Adm. Overhead recovered in exchange	4250	
2. Depreciation Over Charged in cost books (3950 – 3660)	290	
3. Interest received But not included in Costing	450	
4. Bank interest Credited in financial Books only	230	
5. Stories adjustment credited in financial Books	420	5,640
		72,400
Less: 1. Factory Overhead under-recovered	5700	
2. Tax provided in financial Books	600	
3. Dividends Appropriated	1200	
4. Depreciation of stock in financial books	860	
5. Loss due to the theft and pilferage not shown in cost book	260	8620





		63780.00
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2 The net profits of a manufacturing company appeared at Rs 74500 as per financial Records for the year ended 31-03-2013. The cost book however, showed a net profit of Rs 8460 for the same period. A careful scrutiny of the figures from the both the sets of accounts revealed the following facts:

- |        |   |     |
|--------|---|-----|
| (i)    | Income tax provided in financial book 10000                             |     |
| (ii)   | Bank Interest credited in financial book                                | 250 |
| (iii)  | Works overhead under-recovered in cost books 1550                       |     |
| (iv)   | Depreciation charged in financial books 5600                            |     |
| (v)    | Depreciation recovered in cost books 6000                               |     |
| (vi)   | Administrative overheads over-recovered                                 | 850 |
| (vii)  | Loss due to obsolescence charged in financial account 2800              |     |
| (viii) | Interest on investment not included in cost accounts 4000               |     |
| (ix)   | Storage adjustment (credited in financial books) 240                    |     |
| (x)    | Loss due to depreciation in stock values charged in financial book 3350 |     |

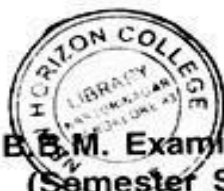
You are required to prepare (A) the reconciliation statement (b) a memorandum reconciliation Account.

### Reconciliation Statement

	Rs	Rs
<b>Profits as per cost Accounts:-</b>		88640
Add:		
(i) Bank Interested credited in financial Books	250	
(ii) Excess depreciation recovered in cost accounts	400	
(iii) Administrative Overheads over-recovered in cost accounts	850	
(iv) Interest on investments not included in cost accounts	2000	
(v) Stores adjustments credited in financial books	240	3,740
		92200
Less:		
(i) Income tax provided in financial books	10000	
(ii) Works Overhead under-recovered in cost accounts	1,550	
(iii) Loss due to obsolescence charged in financial accounts	2800	
(iv) Loss due to depreciation in stock in financial books	3,350	17,700
<b>Profits as per financial Accounts</b>		74500

**Memorandum Reconciliation Account.**

Particulars	Rs	Particulars	Rs
To income tax provided in finance books	10,000	<b>By Profits as per cost accounts</b>	88,460
To Works overhead under Recovered in cost accounts	1,550	By Bank interest credited in financial books	250
To loss due to obsolescence charged in financial books	2,800	By Excess depreciation recovered in cost accounts	400
To, loss Due to depreciation in stock values charged in financial books	3,350	By Administrative overheads over-recovered in cost accounts	850
<b>To profits as per financial accounts</b>	74,500	By stores adjustments credited in financial books	240
		By Interest in investment not included in cost accounts	2000
	92,200		92,200



AS – 344

IV Semester B.B.M. Examination, April/May 2012  
(Semester Scheme)

**BUSINESS MANAGEMENT**  
**Paper – 4.3 : Cost Accounting**

Time : 3 Hours

Max. Marks : 90

**Instructions :** 1) Answer should be written completely in **English**.  
2) Working notes forms the part of answer.

**SECTION – A**

Answer any 10 sub-questions. Each sub-question carries 2 marks.

**(10×2=20)**

1. a) Define Cost.
- b) What is a Cost Unit ?
- c) What is meant by Prime Cost ?
- d) What is meant by oncost ?



## SECTION – B

Answer any 5 questions. Each question carries 5 marks.

(5×5=25)

2. Briefly explain the different basis of classification of cost.
3. Give the meaning and objectives of Cost accounting.
4. What is meant by Labour turnover ? List the causes for Labour turnover.
5. A factory produces a standard product. The following information are given to you from which you are required to prepare a cost sheet for January 2012.

Raw materials consumed	Rs. 2,91,000
Direct wages	Rs. 1,29,000
Other direct expenses	Rs. 81,000
Factory overheads	80% of direct wages.
Office overheads	10% of works cost
S & D expenses	Rs. 20 per unit sold.
Units produced and sold during the month	10,000

Find the Selling Price per unit when the profit earned is at 20% on selling price.

6. Calculate (a) ROL (b) ROQ and (c) Maximum Stock Level from the following :

Minimum Stock Level	: 2,550 units
Average Stock Level	: 4,550 units (Minimum stock level + 1/2 of ROQ)
Consumption	: Minimum 800 units per month
	: Maximum 1,500 units per month
Delivery Period	: Minimum 2 months
	: Maximum 4 months



7. Show the Stores Ledger entries as they would appear when using the LIFO method of pricing of material issues for the following transactions;

Date	Transaction	Units	Price (Rs.)
April 1	Balance in hand b/f	300	2.00
" 2	Purchased	200	2.20
" 4	Issued	150	—
" 6	Purchased	200	2.30
" 11	Issued	150	—
" 19	Issued	200	—
" 22	Purchased	200	2.40
" 27	Issued	150	—

8. A worker completes a job in a certain number of hours. The Standard time allowed for the job is 10 hours, and the hourly rate of wages is Re. 1. The worker earns at the 50% rate, a bonus of Rs. 2 under Halsey plan. Ascertain his wages under Rowan Plan.
9. From the following particulars, calculate Machine hour rate.

Cost of the Machine	Rs. 11,000
Scrap Value	Rs. 1,000
Repairs for the effective working life	Rs. 1,500
Standing charges for 4 weekly period	Rs. 1,600
Power used : 6 units per hour at 5 paisa per unit	
Effective working life : 10,000 hours	
Hours worked in 4 weekly period : 120 hours	



## SECTION – C

Answer any 3 questions. Each question carries 15 marks.

(3×15=45)

10. From the following particulars of Material 'EME', prepare the Stores ledger a/c using FIFO method of pricing issues.

<b>March</b>	<b>1</b>	Balance 400 units at Re. 1 per unit
"	<b>2</b>	Issued 100 units
"	<b>4</b>	Received 1,600 units at Rs. 1.10 per unit
"	<b>6</b>	Issued 600 units
"	<b>10</b>	Returned to Stores 40 units issued on 2 <sup>nd</sup> March
"	<b>11</b>	Received 600 units at Rs. 1.20 per unit
"	<b>14</b>	Issued 640 units
"	<b>16</b>	Received 200 units at Rs. 1.20 per unit
"	<b>20</b>	Issued 240 units
"	<b>22</b>	Returned to Vendors 80 units (received on March 16 <sup>th</sup> )
"	<b>25</b>	Received 400 units at Re. 1 per unit
"	<b>30</b>	Issued 500 units

11. In a factory there are three production departments-  $P_1$ ,  $P_2$  and  $P_3$  and two service departments –  $S_1$  and  $S_2$ .

The departmental expenses were :

Departments	$P_1$	$P_2$	$P_3$	$S_1$	$S_2$
Expenses (Rs.)	6,50,000	6,00,000	5,00,000	1,20,000	1,00,000

The Service department expenses were allocated on a percentage basis as follows :

Service Departments	$P_1$	$P_2$	$P_3$	$S_1$	$S_2$
$S_1$	30	40	15	-	15
$S_2$	40	30	25	5	-

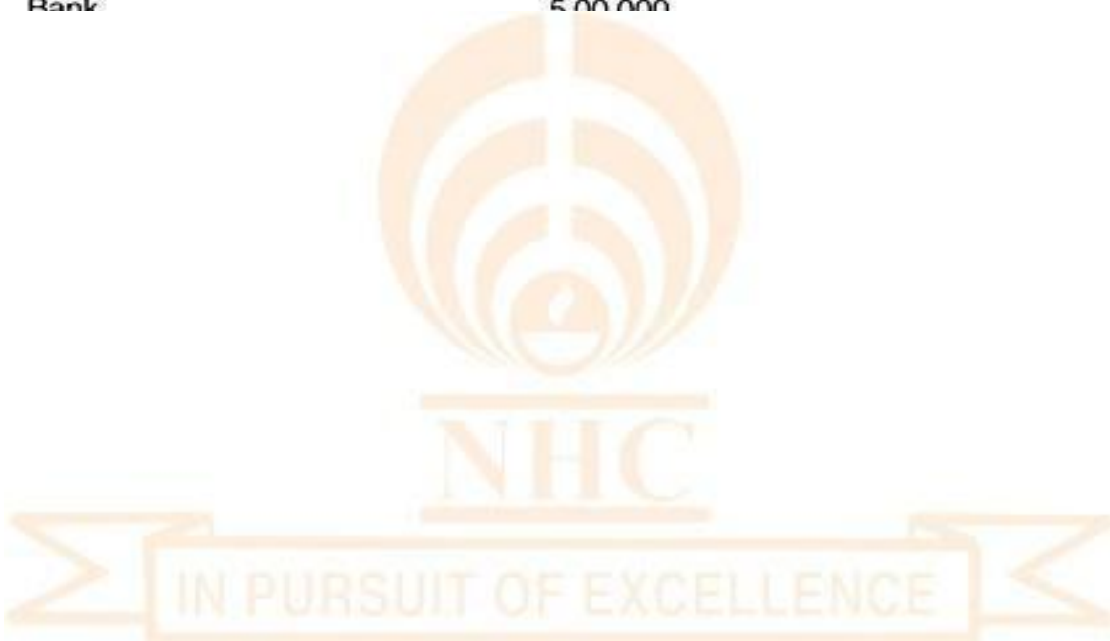
Prepare a statement showing the distribution of expenses of the two service departments to the three production departments using :

- a) Repeated distribution method and b) Simultaneous equation method.



12. Rambo Constructions Ltd. undertakes a contract for Rs. 48 lakhs. The trial balance for the year ending 31<sup>st</sup> March 2011 as follows :

Particulars	Dr. (Rs.)	Cr. (Rs.)
Share capital		30,00,000
Sundry Debtors and Creditors	4,00,000	10,00,000
Contractee's Account		20,00,000
Bank	5,00,000	



- b) Materials returned to stores Rs. 10,000.
- c) Plant costing Rs. 1,00,000 sold for Rs. 92,000 on 31-03-2011.
- d) Plant returned to stores costing Rs. 6,00,000.
- e) Materials lost Rs. 6,000.





- f) Plant lost due to fire Rs. 20,000.
- g) Work certified 80% of Contract price.
- h) Cash received on account till 31-03-2011 – 80% of work certified.
- i) Depreciation on Plant at 10% per year and building (Rs. 10,00,000) at 5% per year.

You are required to prepare :

- 1) Contract No. 820 a/c,
- 2) Contractee's A/c,
- 3) B/S as on 31-03-2011

13. The product of a manufacturing company passes through three processes A, B and C and then in to finished stock. The following are the figures relating to both the processes;

	Total (Rs.)	Process-A	Process-B	Process-C
Direct Materials (Rs.)	34,820	20,000	30,200	34,620
Direct Wages (Rs.)	1,20,000	30,000	40,000	50,000
Direct Expenses (Rs.)	7,260	5,000	2,260	–
Production overhead (Rs.)	60,000	–	–	–
Normal loss in input (%)	–	10	5	10
Sale of Scrap per unit (Rs.)		30	50	60
Production in units		920	870	800

1000 units at Rs. 50 per unit were introduced in to process A. There was no stock of materials or WIP in any department at the beginning or end of the period. Production overhead is allocated to each process on the basis of 50% of Direct labour cost. Prepare the Process accounts.



4. From the following information prepare a reconciliation statement.
- Profit as per cost account Rs. 27,400.
  - Under absorption of factory overhead in cost account is Rs. 1,300.
  - Over absorption of administration overhead in cost account Rs. 600.
  - Interest paid included only in financial account Rs. 400.
  - Dividend received Rs. 1,000.
  - Profit as per financial account Rs. 27,300.
5. In a factory 20,000 units of product 'A' were manufactured in the month of March 2013. From the following figures obtained from the costing records. Prepare a cost sheet showing cost per unit.

	(Rs.)
Opening stock	5,000
Raw materials	55,000
Closing stock of Finished goods	1,000
Raw materials	10,000
Direct wages	25,000
Factory overhead	40,000
Office overhead	20,000
Material returned to seller	4,000

6. Two components X and Y are used as follows Normal usage 50 units per week each. Minimum usage 25 units per week each. Maximum usage 15 units per week each.

Re-order quantity X 400 units Y 600 units

Re-order period X 4 to 6 weeks Y 2 to 4 weeks.

Calculate for each components

- Re-order level
- Minimum level
- Maximum level
- Average stock level.



MS – 432

IV Semester B.B.M. Examination, May/June 2013  
(Semester Scheme)  
(Fresh) (2012-13 and Onwards)  
Business Management  
Paper – 4.3 : COST ACCOUNTING

Time : 3 Hours

Max. Marks : 100

**Instruction :** Answers should be written in **English**.

SECTION – A

Answer **any 8** sub-questions. **Each** sub question carries **2** marks. (8×2=16)

1. a) Define Cost Accounting.
- b) State four advantages of Cost Accounting.
- c) What is variable cost ? Give two examples.
- d) Give three advantages of perpetual inventory system.
- e) What is meant by E.O.Q. ?
- f) Give four examples of factory overhead.
- g) What do you mean by work certified ?
- h) What are the main features of Job Costing ?
- i) State the meaning of retention money.
- j) What is meant by reconciliation statement ?

SECTION – B

Answer **any 3** questions. **Each** question carries **8** marks. (3×8=24)

2. State the differences between cost accounting and financial accounting.
3. A workman's wages for a guaranteed 44 hours week is Rs. 0.75 per hour. The estimated time to produce one article is 30 minutes and under incentive plan the time allowed is increased by 20 %. During a week a worker produced 100 articles. Calculate the wages under each of the following methods :
  - i) Time Rate
  - ii) Rowan system
  - iii) Halsey system.

P.T.O.



SECTION – C

Answer any 4 questions. Each question carries 15 marks. (4x15=60)

7. In respect of a factory the following particulars have been extracted for the year 2008.

	(Rs.)
Cost of materials	6,00,000
Wages	5,00,000
Factory overheads	3,00,000
Administration charges	3,36,000
Selling charges	2,24,000
Distribution charges	1,40,000
Profit	4,20,000

A work order has to be executed in 2009 and the estimated expenses are :  
Materials Rs. 8,000, Wages Rs. 5,000.

Assuming that in 2009, the rate of factory overheads has gone up by 20 %, distribution charges have gone down by 10 % and selling and administration charges have gone each up by 15 %, at what price should the product be sold so as to earn the same rate of profit on the selling price as in 2008. Factory overheads are based on wages and administration, selling and distribution overheads on factory cost.

8. Following are the receipts and issues of material.

Date	Receipts	Cost	Issue
1-1-1997	1,000 units	1,000	-
1-2-1997	1,000 units	800	-
28-2-1997	-	-	1,200 units
1-3-1997	1,000 units	1,200	-
31-3-1997	-	-	1,200 units

Prepare stocks ledger accounts under LIFO, FIFO and simple average.

9. Thekedar accepted a contract for the construction of a building for Rs. 10,00,000, the contractee agreeing to pay 90 % of work certified by the architect. During the first year, the amounts spent were :

	(Rs.)		(Rs.)
Material	1,20,000	Machinery	30,000
Labour	1,50,000	Other expenses	90,000

At the end of the year, the machinery was valued at Rs. 20,000 and materials at site were of the value of Rs. 5,000. Work certified during the year totalled Rs. 4,00,000. In addition work-in-progress not certified at the end of the year had cost Rs. 15,000. Prepare contract account in the books of Thekedar. Also show the various figures of profit that can be reasonably transferred to the profit and loss account.



10. Joseph owns a fleet of taxis and the following information is available by the records maintained by him.

Number of Taxis	10
Cost of each Taxi	Rs. 20,000
Salary of manager	Rs. 6,000 per month
Salary of accountant	Rs. 5,000 per month
Salary of cleaner	Rs. 2,000 per month
Salary of mechanic	Rs. 4,000 per month
Garage rent	Rs. 6,000 per month
Insurance premium	5 % per annum
Annual tax	Rs. 6,000 per Taxi
Driver's salary	Rs. 2,000 per month per Taxi
Annual repair	Rs. 10,000 per Taxi

Total life of a taxi is 2,00,000 km. A taxi runs in all 3,000 km in a month of which 30 % it runs empty. Petrol consumption is one litre for 10 km at 70 per litre, oil and other sundries are Rs. 50.00 per 100 kms. Calculate the cost of running a taxi per km.

11. Product X is obtained after it passes through 3 distinct processes. You are required to prepare process accounts from the following information.

	Total	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>
Material (Rs.)	15,084	5,200	3,960	5,924
Wages (Direct)	18,000	4,000	6,000	8,000
Production overhead	18,000			

1,000 units at Rs. 6 per unit were introduced in P<sub>1</sub>. Production overhead to be distributed as 100 % on direct wages.

	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>
Actual output	950 units	840 units	750 units
Normal loss	5 %	10 %	15 %
Value of scrap per unit	Rs. 4	Rs. 8	Rs. 10