THE QUAIDE MILLETH COLLEGE FOR MEN

PG & RESEARCH DEPARTMENT OF COMMERCE

QUESTION BANK FOR B.Com (GEN)

III YEAR - V SEMESTER

COST ACCOUNTING - BPZ5A

UNIT - I

2 Marks :-

1. Define Cost :-

Cost is the value of economic resources used as a result of producing or doing the thing costed. That is the actual expenditure incurred on a given thing.

2. What is Cost Accounting?

It is the method of accounting for cost. The process of recording and accounting for all the elements of cost is called 'Cost accounting'.

3. Define Cost centre.

It is defined as, "a location, person or item of equipment for which costs may be computed and used for the purpose of cost control". - ICMA

4. What is Cost Control?

It is the process of setting standards and comparing actual performances. This is done for finding deviations in actual performance and to take corrective actions.

5. What is Cost reduction?

It is the real and permanent reduction in the cost of manufacturing without affecting the suitability of the product.

6. What is profit centre?

It is a subunit of a company responsible for revenues and costs. It has control over its revenues, costs and resulting Profits.

5 MARKS

(7) State the limitations of Cost Accounting:-

* Lack of uniformity
* Second hand data
* Conventions
* Uncertainty
* Costly
* Applicability

(8) Objectives of Cost Accounting:-

* To find out the cost of production
* To control cost
* To aid cost reduction
* To assist fixing selling price
* Helps in framing policy

(9) Write the advantages of cost accounting:-

* Effective decision making
* Measuring efficiency
* Cost reduction
* Fixing of selling price
* Effective cost control
* Reduction of wastage
* Effective utilisation of reserves
* Helps in effective budgeting
* Removal of wastages
* Helps to understand the progress and profitability of firm.

10) Write the differences between Cost & Management accounting :

Cost A/c	Management A/c.
* Ascertainment of cost to determine profitability	Concerned with Providing information to management for Policy formulation.
* Improvised out of financial accounting	Developed out of Cost A/c.
* Uses costing techniques	Uses both cost & non cost techniques
* Reveals favourable & unfavourable variances	Offers suggestion to handle unfavourable variances.

10 MARKS PART - C

11) Distinguish Cost Accounting from Financial Accounting.

Financial A/c	Cost A/c
* Main objective is to prepare final a/c.	To provide cost information
* Required as per legal provisions	To meet the internal requirement.
* Stocks are valued at cost or realisable value	Always valued at cost
* These are prepared annually.	This is a continuous process.
* Emphasis is on recording transactions.	Emphasis is on Cost Control.
* Prepared on the basis of historical records.	Uses both historical & predetermined costs.
* P&L A/c for entire organisation is total.	Department wise profits are computed.

12) Discuss the essential requisites of a good costing system.

* Simple to operate
* Flexibility
* Comparability
* Economy
* Timeliness
* Suitability to the organisation.
* Minimum changes in current set up
* Effective system
* Minimum clerical work.
* Simplicity of forms
* Cost accountants role to be defined.

13) Narrate the steps in Installation of a costing system.

* Determining the objectives
* Planning for minimum changes in organisation
* Determining the type and method of costing.
* Decision regarding maintanance of cost books.
* Detailed study of technical aspects.
* Design of control system
* Collection of related data
* Co-operation of staff to be sought.
* Maintaining relationship with cost office to other departments.

UNIT - II

1. What are elements of cost?
2. What are direct materials?
3. What is a cost sheet?
4. What is tender?
5. Write the purposes of cost sheet. (5 marks)
6. Give the proforma of cost sheet.
7. Calculate Prime cost, Factory cost, Cost of production, cost of Sales and profit:

Direct Materials – Rs. 10,000 Direct labour – Rs. 4,000 Direct expenses – Rs. 500, Factory Expenses – Rs. 1,500 Administrative expenses – Rs. 1,000, Selling Expenses – Rs. 300, Sales – Rs. 20,000

SOLUTION:-

DIRECT Material	10,000
Direct labour	4,000
Direct Expenses	500
Prime cost	14,500
(+) Factory Expenses	1500
Factory cost	16,000
(+) Administrative Exps	1,000
Cost of production	17,000
(+) Selling Expenses	300
Cost of Sales	17,300
(+) Profit (?)	2,700
	20,000

(8) Ascertain the cost and selling price from the following:-

Materials Consumed - Rs. 6,000 Wages paid - Rs. 9,000

Works cost @ 50% of wages, office on cost - 20% on works cost, Selling on cost - 10% on works cost, Profit - 20% on cost. (5 MARKS)

SOLUTION:-

Materials consumed	6,000
Wages	9000
PRIME COST	15,000
(+) Works cost (9000 x 50%)	4500
WORKS COST	19500
(+) Office cost (19500 x 20%)	3900
COST OF PRODUCTION	23400
(+) Selling cost 19500 x 10%	1950
COST ON SALES	25350
(+) Profit (25350 x 20%)	5070
SELLING PRICE	30420

(9) Draw a statement of cost from the following particulars:

Opening Stock:	Rs.	Closing Stock:-	Rs.
Materials	2,00,000	Materials	1,80,000
Work-in-progress	60,000	Work-in-Progress	50,000
Finished goods	5,000	Finished goods	15,000

Materials purchased - Rs. 5,00,000, Wages - Rs. 1,50,000

Manufacturing Expenses - Rs. 1,00,000, Sales - Rs. 8,00,000

Selling Expenses - Rs. 20,000

(3)

Statement showing cost:

Particulars	₹	₹
Materials purchased	5,00,000	
(+) opeing Stock Raw material	2,00 000	
(-) closing stock Raw material	180 000	
Materials consumed	5,20,000	
Wages	1, 50,000	
PRIME COST		6,70,000
Factory OH:		
Manufacturing Exps.		1,00,000
		7,70,000
~~WORKS COST~~		
(+) Opeing WIP		60,000
(-) closing WIP		50,000
		7,80,000
WORKS COST		
(+) OFFICE OH		—
(+) op. stk of fin. goods		5000
(-) cl. stk of fin. goods		15000
		7,70,000
COST OF PRODUCTION		
(+) Selling OH		20,000
		7, 90,000
COST OF SALES		
(+) Profit (?)		10,000
		8,00,000
SALES		

(10) M/s Indhu Industries Ltd., are the manufacturers of torches. The following data relate to the production in March. 2009. Prepare cost sheet.

Raw materials Consumed - Rs. 20,000

Wages - Rs. 12,000, Machine hrours worked - 9500 hrs

Machine hour rate - Rs. 2, office OH - 20% of Works cost

Selling OH - Re 50 paise per unit sold.

Units Produced - 20000 units. Units sold - 18000 units @ ₹5 per unit.

SOLUTION:-

Statement of Cost & Profit.

(Output - 20,000 units)

Particulars	Total (₹)	Per unit (₹)
Raw material Consumed	1.00	20,000
Direct Wages	0.60	12,000
PRIME COST.	1.60	32,000
Add: Factory OH: Machine hrs x rate (9500x2)	0.95	19,000
WORKS COST	2.55	51,000
Add:- office overhead 51000 x 20%.	0.51	10,200
COST OF PRODUCTION	3.06	61200
(-) closing stock of finished goods (Produced - Sold) x 3.06 2000 x 3.06	-	6120
	3.06	55,080
Add: Selling overhead 18000 units x 0.50	0.50	9000
COST OF SALES	3.56	64.080
Profit (β) (Bal. fig)	1.44	25,920
Sales (18000 units x 5)	5.00	90,000

RECONCILIATION STATEMENT.

11) What is a reconciliation statement?

12) State some reasons for differences in profit by cost & financial accounts.

13) What is under absorption of overheads?

14) What is over absorption of overheads?

15) From the following, prepare a reconciliation statement between cost and financial records:-

	Rs.
Net profit as per financial records	1,28,755
Net profit as per costing records	1,72,400
Works overhead under recovered in costing	3,120
Administrative overhead recovered in excess	1,700
Depreciation charged in financial records	11,200
Depreciation charged in costing	12,500
Interest received but not recorded in costing	8,000
Obsolescence Loss in financial records	5,700
Income tax	40,300
Bank interest in financial books (Cr)	750
Stores adjustment (Credit in fin. books)	475
Depreciation of stock charged in financial books	6,750.

SOLUTION:-

Particulars	₹	₹
Profit as per cost a/c.		1,72,400
(+) Admn. OH overabsorbed	1700	
Depreciation overabsorbed (12500-11200)	1300	
Interest received in fin. books	800	
Bank Interest	750	
Stores Adjustment	475	12,225
		184625
(-) Works OH underabsorbed	3120	
Loss in fin. books:-		
Obsolescence Loss	5700	
Prob for IT	40,300	
Depreciation	6750	55870
Profit as per financial records.		1,28,755

UNIT III MATERIAL

2. MARKS.

1. What is EOQ

The size of the order for which both ordering cost and carrying cost are minimum is known as Economic order Quantity

2. What is VED Analysis

Items are classified as vital, essential and desirable items under this System. This System is used particularly in Spare parts inventory.

3. What is ABC Analysis

In this Always Better Control (ABC) technique of inventory control, the materials are classified and controlled according to value of the materials involved. It is also called proportional parts value analysis.

4. What is Bin card

Bin refers to a box / container / space where materials are kept. card is placed with each of the bin to record the details of material like receipt, Issue and return.

5. What is inventory Control

Inventory control is a system which ensures the maintenance of required quantity of inventories of the required quality at the required time with minimum amount of investment.

6. What is inventory turnover ratio.

Inventory turnover ratio as, a ratio which measures the number of times a firm's average inventory is sold during a year.

7. Define Defective

It signifies those units or portions of production which can be rectified and turned out as good units by the application of additional material, labour and other service.

8. Define Scrap

It has been defined as the incidental residue from certain types of manufacture, usually of small amount and low value, recoverable without further processing.

5. MARKS

9. Objectives of Inventory Control

⇒ Effective use of finance in inventory investment

⇒ Supply of required material without delay and to avoid "out of stock" danger level.

⇒ Reduction of risk through obsolescence.

⇒ Economy in purchasing.

⇒ Storage of inventory with minimum cost.

⇒ Service to customers by maintaining stocks.

⇒ Correct and regular report to management regarding material position.

10. What are the advantages of material control.

* Ensures availability of material for production.
* Reduces wastage of raw materials.
* Achieves economy of buying and storage cost
* Reduces pilferage, theft, obsolescence and other material losses.
* Avoid excessive investment in stocks.
* Helps in maintaining perpetual inventory System to furnish information to management regarding materials.

11. Write the formulae for Stock levels.

a) Reorder level :-

= Maximum consumption x maximum reorder period

b) Minimum Level

= Reorder level − (Normal consumption × Normal reorder period)

c) Maximum stock level

= Reader level + Reorde quantity −

(Minimum Consumption x Minimum reorder period)

d) Average level

= Minimum level + $\frac{1}{2}$ of reorder quantity

(or)

= $\frac{1}{2}$ maximum level + minimum level

e) Danger level

= Average Consumption x Maximum reorder period for emegency purchases.

12. Find out the economic order quantity from the following particulars.

Annual usage 6000 units

Cost of material per unit ₹20

Cost of placing and receiving one order ₹60

Annual carrying cost of one unit 10% of inventory value.

$$EOQ = \sqrt{\frac{2AB}{CS}}$$

A = Annual usage

B = Buying cost per order

C = Cost per unit

S = Storage and carrying cost % P.A.

$$EOQ = \sqrt{\frac{2 \times 6000 \times 60}{20 \times \frac{10}{100}}}$$

$$= \boxed{600 \text{ units}}$$

13. From the following data calculate Inventory turn over ratio.

Stock at 1st January ₹18000

Stock at 31st December ₹10,000

purchases during the year ₹76000.

Inventory Turnover Ratio = $\frac{\text{Cost of material consumed}}{\text{Cost of Average stock.}}$

Average stock = $\frac{\text{opening stock of material} + \text{closing stock of material}}{2}$

Average stock = $\frac{18000 + 10,000}{2}$ = ₹ 14000

Inventory turnover ratio = $\frac{76000}{14000}$

= **6 times**

14. Calculate the reorder quantity from the following particulars.

Annual usage	20,000 units
Buying cost per order	₹ 10
Cost per unit	₹ 100
Cost of carrying inventory	10% of cost

$EOQ = \sqrt{\frac{2AB}{CS}}$

$= \sqrt{\frac{2 \times 20000 \times 10}{10}}$

= **200 units**

15. Calculate economic order quantity.

Annual consumption : 600 units
Order cost : ₹ 12 per order
Cost per unit : ₹ 20
Storage & carrying cost : 20%.

$$EOQ = \sqrt{\frac{2AB}{CS}}$$

$$= \sqrt{\frac{2 \times 600 \times 12}{20 \times \frac{20}{100}}}$$

$$= \boxed{60 \text{ units}}$$

16. From the following information, calculate a) maximum stock level b) minimum stock level c) reorder level d) Average stock level

Minimum consumption - 240 units per day
Maximum Consumption - 420 units per day
Normal consumption - 300 units per day
Reorder quantity - 3600 units
Reorder period - 10 - 15 days
Normal reorder period - 12 days.

Reorder level = Maximum consumption × maximum reorder period.

= 420 × 15

= 6300 units

Maximum level = Reorder level + Reorder quantity − (Minimum consumption × minimum reorder period)

= 6300 + 3600 − (24 × 10)

= 7500 units

Minimum level = Reorder level − (Normal consumption × Normal reorder period)

= 6300 − (300 × 12)

= 6300 − 3600

= 2700 units

$$\text{Average Stock level} = \frac{\text{minimum level} + \text{maximum level}}{2}$$

$$= \frac{7500 + 2700}{2}$$

= 5100 units

17. Calculate reorder level, minimum stock level, maximum stock level and Average stock level

Normal usage	−	300 units per week
Maximum usage	−	450 units per week
minimum usage	−	150 units per week
Reorder period	−	4 to 6 weeks
Reorder quantity	−	2400 units.

Reorder level = Maximum Consumption × Maximum reorder period.

= 450 × 6

= **2700 units**

Minimum stock level = Reorder level − (Normal consumption × Normal reorder period)

= 2700 − (300 × 5) $\frac{4+6}{2} = 5$

= 2700 − 1500

= **1200 units**

Maximum stock level = Reorder level + Reorder quantity − (Minimum consumption × Minimum reorder period)

= 2700 + 2400 − (150 × 4)

= 2700 + 2400 − 600

= **4500 units**

Average stock level = $\frac{1}{2}$ Maximum level + minimum level

= $\frac{1}{2}$ 4500 + 1200

= **2850 units**

10. MARKS.

18. Two components X and Y used as follows.

Normal usage	– 600 units per week each	
Maximum usage	– 900 units per week each	
Minimum usage	– 300 units per week each	
	X	Y
Reorder quantity	4800 units	7200 units
Reorder period	4 to 6 weeks	2 to 4 weeks

calculate for each component:

a) Reorder level b) minimum level c) maximum level

d) Average stock level.

a) Reorder level = Maximum Consumption x Maximum reorder period

X = 900 x 6

= 5400 units

Y = 900 x 4

= 3600 units

b) Minimum leve = Reorder level – (Normal Consumption x Normal reorder period)

X = 5400 – (600 x 5) $\frac{4+6}{2} = 5$

= 5400 – 3000

= 2400 units

Y = 3600 – (600 x 3) $\frac{2+4}{2} = 3$

= 3600 – 1800

= 1800 units

c) Maximum level = Reorder level + Reorder quantity − (Minimum consumption × minimum reorder period)

X = 5400 + 4800 − (300 × 4)

= 5400 + 4800 − 1200

= **9000 units**

Y = 3600 + 7200 − (300 × 2)

= 3600 + 7200 − 600

= **10200 units**

d) Average level = $\frac{1}{2}$ Maximum level + Minimum level

X = $\frac{1}{2}$ 9000 + 2400

= **5700 units**

Y = $\frac{1}{2}$ 10200 + 1800

= **6000 units**

	X	Y
Reorder level	5400 units	3600 units
Minimum level	2400 units	1800 units
Maximum level	9000 units	10200 units
Average level	5700 units	6000 units.

19. Draw a Stores ledger card recording the following transactions under a) FIFO method and b) LIFO method.

2010 July
1 opening Stock 2000 units at ₹ 10 each
5 Received 1000 units at ₹ 11 each
6 Issues 500 units
10 Received 5000 units at ₹ 12 each
12 Received back 50 units out of issue made on 6th July.
14 Issued 600 units
18 Returned to supplier 100units out of goods received on 5th
19 Received back 100 units out of the issuemade on 14th July
20 Issued 150 units
25 Received 500 units at ₹ 14 each
28 Issued 300 units.

The Stock verification report reveals that there was a shortage of 10 units on 18th July and another shortage of 15 units on 26th July.

a) STORES LEDGER Account – FIFO Method

Date	particulars	Receipt			Issues			Balance		
		Qty	Rate	Amount	Qty	Rate	Amount	Qty	Rate	Amount
2010 July 1	Balance B/d	-	-	-	-	-	-	2000	10	20,000
5	GRN	1000	11	11,000	-	-	-	2000	10	20,000
								1000	11	11,000
6	MRN	-	-	-	500	10	5000	1500	10	15000
								1000	11	11000
10	GRN	5000	12	60,000	-	-	-	1500	10	15000
								1000	11	11000
								5000	12	60,000
12	Material Returned	50	10	500	-	-	-	1500	10	15000
								1000	11	11000
								5000	12	60000
								50	10	500
14	MRN	-	-	-	600	10	6000	900	10	9000
								1000	11	11000
								5000	12	60000
								50	10	500
18	Shortage	-	-	-	10	10	100	890	10	8900
	Returned to Supplier				100	11	1100	900	11	9900
								5000	12	60,000
								50	10	500

19	Material Returned	100	10	1000	–	–	–	890	10	8900
								900	11	9900
								5000	12	60,000
								50	10	500
								100	10	1000
20	MRN	–	–	–	150	10	1500	740	10	7400
								900	11	9900
								5000	12	60,000
								50	10	500
								100	10	1000
25	GRN	500	14	7000	–	–	–	740	10	7400
								900	11	9900
								5000	12	60,000
								50	10	500
								100	10	1000
								500	14	7000
26	Shortage	–	–	–	15	10	150	725	10	7250
								900	11	9900
								5000	12	60,000
								50	10	500
								100	10	1000
28	MRN	–	–	–	300	10	3,000	500	14	7000
								425	10	4250
								900	11	9900
								5000	12	60,000
								50	10	500
								100	10	1000
								500	14	7000

closing stock = 6975 units valued @ ₹ 82650

b) STORES LEDGER ACCOUNT – LIFO METHOD

Date	particulars	Receipt			Issues			Balance		
		Qty	Rate	Amount	Qty	Rate	Amount	Qty	Rate	Amount
2010 July 1	Balance B/d	–	–	–	–	–	–	2000	10	20,000
5	GRN	1000	11	11,000	–	–	–	2000	10	20,000
								1000	11	11000
6	MRN	–	–	–	500	11	5500	2000	10	20,000
								500	11	5500
10	GRN	5000	12	60,000	–	–	–	2000	10	20,000
								500	11	5500
								5000	12	60,000
12	Material Returned	150	11	550	–	–	–	2000	10	20,000
								500	11	5500
								5000	12	60,000
					600			150	11	550
14	MRN	–	–	–	150	11	550	2000	10	20,000
					550	12	6600	500	11	5500
								4450	12	53400
18	Returned to Supplier	–	–	–	100	11	1100	2000	10	20000
	Shortage	–	–	–	10	12	120	400	11	4400
								440	12	53280

19	material Returned	100	12	1200	—	—	—	2000	10	20,000	}
								400	11	4400	
								4440	12	53280	
					150			100	12	1200	
20	MRN	—	—	—	100	12	1200	2000	10	20000	}
					50	12	600	400	11	4400	
								4390	12	52680	
25	GRN	500	14	7000	—	—	—	2000	10	20,000	}
								400	11	4400	
								4390	12	52680	
								500	14	7000	
26	Shortage	—	—	—	15	14	210	2000	10	20,000	}
								400	11	4400	
								4390	12	52,680	
								485	14	6790	
28	MRN	—	—	—	300	14	4200	2000	10	20000	}
								400	11	4400	
								4390	12	52680	
								185	14	2590	

Closing stock = 6975 units valued @ ₹ 6 79,670

20. The following transactions took place in respect of an item of Material.

	Receipt Quantity	Rate Rs.p	Issue Quantity
2-3-02	200	2.00	–
10-3-02	300	2.40	–
15-3-02	–	–	250
18-3-02	250	2.60	–
20-3-02	–	–	200

Record the above transactions in Stores ledger, using Simple Average and weighted Average Method.

STORES LEDGER (Simple Average Method)

Date	particulars	Receipt			Issues			Balance		
		Qty	Rate	Amount	Qty	Rate	Amount	Qty	Rate	Amount
2.3.02	GRN	200	2	400	–	–	–	200	2	400
10.3.02	GRN	300	2.40	720	–	–	–	200	2	400
								300	2.40	720
15.3.02	MRN	–	–	–	250	$\frac{2+2.4}{2}$ = 2.2	550	250		570
18.3.02	GRN	250	2.6	650	–	–	–	250		570
								250		650
20.3.02	MRN	–	–	–	200	$\frac{2.4+2.6}{2}$ = 2.5	500	300		720

closing Stock = 300 units valued @ ₹ 720.

Stores ledger Account
(Weighted Average Method)

Date	particulars	Receipt			Issues			Balance		
		Qty	Rate	Amount	Qty	Rate	Amount	Qty	Rate	Amount
2.3.02	GRN	200	2.0	400	—	—	—	200	2.0	400
								500	2.24	1120
10.3.02	GRN	300	2.40	720	—	—	—	200	2	400
								300	2.4	720
15.3.02	MRN	—	—	—	250	2.24	560	250		560
18.3.02	GRN	250	2.60	650	—	—	—	500		1210
20.3.02	MRN	—	—	—	200	2.42	484	300		726

Closing Stock = 300 unit valued @ ₹ 726.

UNIT - IV - LABOUR.

1. Write notes on labour turnover.
2. What is idle time?
3. What is Time rate?
4. What is piece rate?
5. What is over time?
6. Discuss the Causes of labour turnover? (5 MARKS)
7. Write notes on Taylor's piece rate system.
8. What are the features of good wage system. (5 MARKS)
9. From the following particulars supplied by HR department, Calculate labour turnover under the three methods!

Total No. of employees at the beginning	- 2010
No. of employees Recruited	- 30
No. of employees left during the period	- 50
Total No. of Employees at the end	- 1990.

Solution

SEPERATION METHOD :-

$$\text{Labour Turnover} = \frac{\text{No. of employees left}}{\text{Avg. no. of Employees}} \times 100$$

$$= \frac{50}{2000} \times 100 = 2.5\%.$$

$$\text{Labour Turnover (Replacement method)} = \frac{\text{No of Employees recruited for Vacancy}}{\text{Avg. Employees}} \times 100$$

$$= \frac{30}{2000} \times 100 = 1.5\ \%$$

$$\text{Flux method} = \frac{\text{No. of seperation} + \text{No. of replacement}}{\text{Average Employees}} \times 100$$

$$= \frac{80}{2000} \times 100 = 4\ \%$$

(10) From the following data, prepare statement showing cost per man day of eight hours:

a) Basic salary & DA – Rs. 300 per month
b) Leave salary @ 6% of Basic & DA
c) Employer's contribution to PF 6% of (a) & (b)
d) Employee's contribution to PF 6% of (a) & (b)
e) Pro rata expenditure on amenities to labour @ Rs. 25 per head per month
f) Number of working hours in a month – 200.

SOLUTION

Basic & DA	300
Leave salary (300 x 6%)	18
Contribution to PF (318 x 6%)	19.08
amenities exps	25
	362.08

Cost per man day = $\frac{362.08}{200} \times 8$

Cost = ₹ 14.48 per man day

11. Calculate the wages of A & B under Taylor's system & Piece rate plan

Standard time : 10 units per hour
Wages – Re. 1 per hour

In a day of 8 hours 'A' produced 60 units
'B' produced 100 units

SOLUTION :-

Standard output = 10 unit x 8 hrs
= 80 units.

Piece rate = Rate p/h / unit p/h
= 1/10
= 0.10 per unit.

Wages of A (below standard) = 60 x 0.10 x 80 %.
= ₹ 4.8 /-

Wages of B (above std) = 100 x 0.10 x 120 %.
= ₹ 12 /-.

Normal piece rate :-

Wages = Unit produced x piece rate

A's wages = 60 x 0.10 = ₹ 6 /-

B's wages = 100 x 0.10 = ₹ 10 /-

12) During a week, a worker produced 300 units working for 48 hours. The hourly rate is ₹ 4. The estimated time to produce 1 unit is 10 minutes. Calculate wages under Halsey, Halsey-weir & Rowan plans.

SOLUTION

Standard time for 1 unit = 10 minutes.
" " for 300 unit = 300 x 10 = 3000 minutes
= 50 hours.

Std. time - 50 hrs actual time = 48 hrs.

Halsey plan

Wages = (Time taken x rate) + 50% (Time saved x rate)

= (48 x 4) + 50% (2 x 4)

= 192 + 4 = ₹196 /-

Halsey weir plan

Wages = (Time taken x rate) + 30% (Time saved x rate)

= (48 x 4) + 30% (2 x 4)

= 192 + 2.4

Wages = ₹194.4 /=

Rowan plan

Rowages = (Time taken x rate) + $\left(\frac{\text{Time saved} \times \text{Time taken}}{\text{Std. Time}} \times \text{rate}\right)$

= (48 x 4) + $\left(\frac{2 \times 48}{50} \times 4\right)$

= 192 + 7.68

Wages = 199.68 /-

UNIT - V OVERHEADS

SECTION-A 2 MARKS

1. Define overheads.

The indirect cost that cannot be traced specifically any units is called overhead. It includes indirect material, indirect labour etc.

2. What is allocation of overheads?

It is the allotment of whole cost to particular cost centre or cost units.

3. What is primary distribution?

Primary distribution is the allocation and apportionment of overheads to all departments on some suitable basis.

4. What is secondary distribution?

It is the process of redistribution of overheads of service departments to production departments.

5. What is Machine hour rate?

It is the cost per hour for operating a machine. It is calculated by dividing the cost absorbed by a machine by the number of hours of operation.

6. What is comprehensive machine hour rate?

If the machine operator's wage is added with the machine hour rate, then it is the Comprehensive machine hour rate.

5 MARKS

7. Write the classification of overheads.

Overheads

Function wise classification
- (i) Manufacturing overhead
- ii) Administration overhead.
- iii) Selling overhead
- iv) Distribution overhead
- v) Research & Development cost

Behaviour wise.
- i) Fixed overhead
- (ii) Variable overhead
- (iii) Semi variable overhead.

8) Discuss the methods of overhead absorption.
- i) Direct Material Cost method
- ii) Direct labour cost method (wages)
- iii) Prime Cost Percentage method
- iv) Machine hour method.
- v) Direct labour hour method.
- vi) Rate per unit of production method.
- vii) Sale price method.

9) 'K' limited has three production departments 'A', 'B' & 'C' and two service departments D & E. The overheads were;

Rent – 5,000 Indirect wages – Rs. 1500
Depreciation of Machinery – Rs. 10,000, lighting – 600
Power – Rs. 1500 Sundries – Rs. 10,000.

Following further details are available:-

Ptrs	A	B	C	D	E
Floor space	~~2000~~ 2000	~~2000~~ 2500	~~2500~~ 3000	~~3000~~ 2000	500
Light points	10	15	20	10	5
Direct wages	3000	2000	3000	1500	500
HP of machine	60	30	50	10	-
value of machine	60,000	80,000	1,00,000	5,000	5,000

Apportion the cost on most equitable basis.

SOLUTION

PRIMARY DISTRIBUTION SUMMARY

Particulars	Ratio	Total	A	B	C	D	E
Rent	4:5:6:4:1	5000	1000	1250	1500	1000	250
Indirect wages	6:4:6:3:1	1500	450	300	450	225	75
Depreciation	12:16:20:1:1	10,000	2400	3200	4000	200	200
Lighting	2:3:4:2:1	600	100	150	200	100	50
Power	6:3:5:1	1500	600	300	500	100	-
Sundries	6:4:6:3:1	10,000	3000	2000	3000	1500	500
Direct wages	Allocation	2000	-	-	-	1500	500
		30600	7550	7200	9650	4625	1575

(10) From the following particulars, compute the machine hour rate.

Cost of machine – Rs. 11,000
Scrap value – Rs. 680
Repairs for effective life – Rs. 1500
Standing charges for 4 weekly period – Rs. 40
Effective working life 10,000 hours
Power used: 6 units per hour @ 5 paise per unit
Hours worked in 4 weekly period – 120 hours.

COMPUTATION OF MACHINE HOUR RATE.

Particulars.	Per hour.
Standing charges (40 ÷ 120)	0.3333
Machine Expenses :	
Depreciation = $\frac{11000 - 680}{10000}$	1.0320
Repairs = $\frac{1500}{10,000}$	0.1500
Power 6 × 0.05	0.30
Machine Hour rate.	1.8153

(11) Work out Composite machine hour rate for the machine whose scrap value is Nil.

(i) Cost of machine Rs. 3,60,000
(ii) Freight & Installation – Rs. 40,000
(iii) Working life – 20 years.
iv) Working hours – 8000 per year
v) Repair – 50% of depreciation
vi) Power : 10 units per hour @ 10 paise p/u
vii) Lubricating oil – Rs. 2 per day of 8 hours.
viii) Consumable stores @ Rs. 10 per day (8 hours)
ix) Wages of operator @ Rs. 4 per day.

SOLUTION

To compute composite MHR, operator's wage to be included.

$$\text{Depreciation} = \frac{360000 - 0}{20 \times 8000 \text{ hrs}} = 2.50$$

COMPOSITE MHR

Particulars	Per day (8hr)	Per hour
Standing Charges:		
Lubricating oil	2.00	
Stores	10.00	
Wages of operator	4.00	
Standing charges (16/8)	16.00	2
Machine Expenses:-		
Depreciation		2.50
Repairs (2.50 × 50%)		1.25
Power (10 × 0.10)		1.00
Composite MHR.		6.75

12. A manufacturing unit has three production departments and four service departments. The expenses as per Primary distribution were:

A – Rs. 20,000 B – Rs. 18,000 C – Rs. 10,000

Service departments:-

Stores – Rs. 4,000 Time keeping – Rs. 3000 Power – Rs. 1,600

Canteen – 1,000

Following information are available:-

Ptds	A	B	C
Horse power of machines	900	900	600
No. of workers	60	45	45
Value of stores	7500	4500	3000

Apportion the Cost of Service departments to Production departments.

SECONDARY DISTRIBUTION STATEMENT.

Prob	Ratio	A	B	C
Overhead as Per primary	-	20,000	18,000	10,000

SECONDARY DISTRIBUTION STATEMENT.

Particulars	Ratio	A	B	C
overhead as Per primary	-	20,000	18000	10,000
Expenses of Stores	5:3:2	2000	1200	800
Time keeping	4:3:3	1200	900	900
Power	3:3:2	600	600	400
Canteen	4:3:3	400	300	300
Total overhead		24,200	21,000	12400

Stores - materials ratio, Time keeping - No. of workers,
Power - Horse Power, Canteen - No. of workers.

PART-C 10 MARKS

(3) A manufacturing Unit has two production departments P_1, P_2 and three service departments time booking, Stores & Maintanance. The following are details for 2009.

P_1 - Rs. 16,000 P_2 - Rs. 10000 Stores - Rs. 5000
Time booking - 4,000 Maintanance - 3,000/-
The other informations are:

	P_1	P_2	Stores	Timebooking	maintanance
No. of Employees	40	30	20	16	10
No. of Stores requisition	24	20	-	-	3
Machine hour	2400	1600	-	-	-

Prepare OH distribution Statement

Statement showing Secondary Distribution

Particulars	Ratio	P_1	P_2	St.	TB	Main
OH on per Primary	–	16000	10000	5000	4000	3000
Expenses of TB	4:3:2:1	1600	1200	800	-4000	400
Expenses of Store	12:10:3	2784	2320	-5800	0	696
Expenses of Maintanance	3:2	2458	1638	0	0	-4096
Total overhead		22842	15158	–	–	–

(14)

SIMULTANEOUS EQUATION METHOD:-

A company has three production departments and two service departments and the expenses are given below:-

Production departments

A - Rs. 800 B - Rs. 700 C - Rs. 500

Service departments.

X - Rs. 234 Y - Rs. 300

Service departments give service to other departments in the following manner.

Service departments	A	B	C	X	Y
X	20%	40%	30%	–	10%
Y	40%	20%	20%	20%	–

Apportion the expenses on simultaneous equation method:

SOLUTION

Let 'x' be the expenses of X and 'y' be the Expenses of Y.

$\therefore \quad x = 234 + 0.2y \quad — (1)$

$y = 300 + 0.1x \quad — (2)$

Multiplying by 10 to remove decimals,

$10x = 2340 + 2y$ — (1)

$10y = 3000 + x$ — (2)

Multiply (1) by 5 to cancel variables.

$50x = 11700 + 10y$

$\therefore 50x - 10y = 11700$ — (3)

$-x + 10y = 3000$

$49x + 0 = 14700$

$49x = 14700$

$\therefore x = 14700/49 = \text{Rs. } 300.$

Substitute the value of x in eqn (2)

$10y = 3000 + x$

$10y = 3000 + 300$

$10y = 3300$

$\therefore y = 330/-$

Secondary Distribution Summary

Particulars	Ratio	A	B	C
Overhead as per Primary distribution	-	800	700	500
(+) Expenses of X (300×90%)	2:4:3	60	120	90
Expenses of X (330×80%)	4:2:3	132	66	66
Total overhead.		992	886	656

15) REPEATED DISTRIBUTION METHOD

The following particulars relate to a manufacturing Company which has three departments A, B and C and two Service departments X & Y.

A – Rs. 6,300 B – Rs. 7,400 C – Rs. 2800 X – Rs. 4500

Y – Rs. 2000/-

The company decided to charge the service department cost on the basis of the following percentage.

	Production			Service.	
	A	B	C	X	Y
X.	40%	30%	20%	–	10%
Y	30%	30%	20%	20%	–

Apportion the expenses on Repeated distribution method.

SOLUTION.

STATEMENT SHOWING SECONDARY DISTRIBOTION

Particulars.	A	B	C	X	Y
overhead as per Primary distribution	6300	7400	2800	4500	2000
Expenses of X (4:3:2:1)	1800	1350	900	-4500	450
Expenses of Y (3:3:2:2)	735	735	490	490	-2450
Expenses of X (4:3:2:1)	196	147	98	-490	49
Expenses of Y (3:3:2:2)	15	15	10	9	-49
Expenses of X (4:3:2:1)	4	3	2	-9	–
Expenses of Y (3:3:2:2)	–	–	–	–	–
Total overhead	9050	9650	4300		

16. Calculate Machine Hour rate:-

Cost of Machine – Rs. 80,000 Cost of Installation – Rs. 20,000

Scrap Value – Rs. 20,000 Life – 10 years

Rent per Quarter for the shop – Rs. 3000

General lighting (per month) – Rs. 200

Shop supervision per Quarter – Rs. 6,000

Insurance Premium p.a – Rs. 600

Estimated repairs p.a – Rs. 1,000.

Power 2 units per hour at Rs. 50 per 100 units.

Estimated working hours Per annum Rs. 2000 hours.

The machine occupies 1/4 of total area of shop. The supervisor devotes 1/6 of his time to supervise this machine. General lighting is to be apportioned on the basis of floor area.

SOLUTION

COMPUTATION OF MACHINE HOUR RATE

Particulars	Per annum	Per hour
Standing Charges:		
Rent (3000 x 4 x 1/4)	3,000	
Lighting (200 x 12 x 1/4)	600	
Supervision (6000 x 4 x 1/6)	4000	
Insurance	600	
(8200/2000)	8200	4.1
Running Expenses		
Depreciation (1,00,000 − 20,000 / 10 yrs x 2000)		4
Power ($\frac{50}{100}$ x 2)		1
Repairs (1000/2000 hrs)		0.5
MACHINE HOUR RATE		9.60