Paper – 8: Cost & Management Accounting

Time Allowed: 3 Hours **Full Marks: 100**

Question No 1 is Compulsory. Answers any five Questions from the rest.
Working Notes should form part of the answer.

Question.1

(a) Match the statement in Column I with appropriate statement in Column II [1x5]

Column I	Column II
(i) Inventory Management	(A) Merit rating
(ii) Basis for remuneration employees	(B) By Product Cost Accounting
(iii) Pareto distribution	(C) Production Order
(iv) Reverse Cost Method	(D) JIT System
(v) Material Requisition	(E) Decision Making

(b) State whether the following statements are TRUE or FALSE: [1x5]

(i) Transfer pricing has significance for the purpose of measurement of divisional performance.

(ii) ABC analysis is made on the basis of unit prices of materials.

(iii) Fixed costs vary with volume rather than time.

(iv) A Production Budget is prepared before Sales Budget.

(v) An automobile service unit uses batch costing.

(c) Fill in the blanks: [1x5]

(i) A cost which does not involve any cash outflow is called _____.

(ii) In _____ contract with escalation clause, the contractor can claim for increase in prices of inputs to the agreed extent.

(iii) An increase in sales price_____ the BEP.

(iv) Margin of safety is_____.

(v) Cost sheet is a document which provides for assembly of the detailed cost of a _____.

(d) Calculate the following [2x5=10]

(i) Time allowed for a job is 45 hours; a worker takes 40 hours to complete the job. Time rate per hour is ₹15. Compute the total earnings of the worker.

(ii) Deerbound Manufacturing transferred ₹ 30,00,000 of raw materials into production during the most recent year. Direct labour and factory overhead for the period totaled ₹ 20,00,000. Beginning work in process was ₹ 6,70,000 and ending work in process was ₹ 8,50,000. Finished goods inventory decreased by ₹ 50,000. If gross profit was ₹ 16,00,000, how much was sales for the period?

(iii) A firm requires 16,000 nos. of certain component, which it buys at ₹60 each. The cost of placing an order and following it up is ₹120 and the annual storage charges work out to 10% of the cost of the item. To get maximum benefit the firm should place order for how many units at a time?

(iv) Consider the following particulars for a month :
Budgeted fixed production overhead cost - ₹ 1,10,000
Budgeted production - 5,500 units
The fixed overhead cost was under absorbed by ₹ 12,000 and the fixed production overhead expenditure variance was ₹ 2,500 (Adverse).
What is the number of units produced during the month was?

(v) A factory transferred out 8,800 completed units during Dec 2013. Opening Stock was 400 units 75% completed, closing stock was 800 units 50% completed. Assuming FIFO method, what is the equivalent production in December 2013?

Answer:

(a)

(i) - (D)

(ii) - (A)

(iii) - (E)

(iv) - (B)

(v) - (C)

(b)

(i) True

(ii) False

(iii) False

(iv) True

(v) False

(c)

(i) Notional cost

(ii) Fixed price.

(iii) Lowers

(iv) Sales minus B.E sales

(v) Cost centre or cost unit

(d)

(i) Computation of total earning of worker

Total Earnings	=H x R+ 50% [S-H] R
Total Earnings	=40 x ₹15+50% [45-40] × ₹15
Total Earnings	=₹600+ ₹37.5= ₹637.50

(ii) Total manufacturing costs were ₹ 50,00,000 (₹ 30,00,000 + ₹ 20,00,000). Of this total cost entering production, ₹ 48,20,000 was transferred to finished goods (the other ₹ 1,80,000 remained in work in process (₹ 8,50,000 - ₹ 6,70,000)).

Given that finished goods inventory decreased, the total cost of goods sold was ₹ 48,70,000 (₹ 48,20,000 transferred into finished goods + ₹ 50,000 decrease in finished goods).

=Total sales ₹ 64,70,000 (₹ 48,70,000 cost of goods sold + ₹ 16,00,000 gross profit)

(iii) Annual demand=16,000 units
Ordering cost=₹ 120
Storage cost=10% of ₹60 =₹ 6

$$EOQ=\sqrt{\frac{2\times Annual demand\times ordering cost}{10\%of₹60}}$$

$$=\sqrt{\frac{2\times 16,000\times 120}{6}}=800units$$

(iv) Fixed overhead recovery rate = Fixed overhead cost / Production (units)
= ₹ 1,10,000/ 5,500 units
= ₹ 20 / unit

Budgeted fixed overhead	₹ 1,10,000
Add : Fixed overhead expenditure variance	₹ 2,500
Actual fixed overhead	₹ 1,12,500

Absorbed overhead = Actual fixed overhead – Under absorbed overhead
= ₹ 1,12,500 – 12,000 = ₹ 1,00,500

Actual production = Overhead absorbed / Fixed overhead rate = ₹ 1,00,500 / ₹ 20
= 5,025 units.

(v) Equivalent production = 8,800 – (400 x 0.75) units + (800 x 0.50) units = 8800 – 300 + 400
= 8,900 units.

Question.2

(a) What is Inter Firm Comparison? Enumerate some of its advantages. [1+5=6]

Answers:

Inter Firm Comparison, as the name indicates, is a technique by which a Company evaluates its performance with those of other firms in the same industry. Uniform Cost accounting is a must for such meaningful comparison. To facilitate such comparison and evaluation, generally a central organization is formed to collect the necessary data periodically in a standard format from all member industries. To safeguard the confidentiality of the individual firm's performance details, the data are collected as a ratio or percentage

by the central organization in the industry. Information collected may relate to costs, capacity utilization, raw material usage, labour productivity, ROI etc.

This Comparison has many advantages which are as follows:

(i) It promotes a sense of cost consciousness among member units and helps to improve their efficiency.

(ii) It throws light on weak-areas and enables member units to take remedial action.

(iii) It prevents unhealthy price cuffing.

(iv) It enables the members to present a united stand before Government and other regulatory bodies.

(v) An overall improvement in the industry will result in higher profit for member, more benefit to labour, lower prices to consumers and high revenue to the government by way of taxes/duties.

(b) A factory has a key resource (bottleneck) of Facility A which is available for 31,300 minutes per week. Budgeted factory costs and data on two products, A and B, are shown below:

Product	Selling price/Units	Material cost/Unit	Time in Facility A
A	**₹40**	**₹20.00**	**5 minutes**
B	**₹40**	**₹17.50**	**10 minutes**

Budgeted factory cost per week:

	₹
Direct labour	**25,000**
Indirect labour	**12,500**
Power	**1,750**
Depreciation	**22,500**
Space Costs	**8,000**
Engineering	**3,500**
Administration	**5,000**

Actual production during the last week is 4,750 units of product A and 650 units of product B. Actual factory cost was ₹78,250.

Calculate:

(i) Total factory costs (TFC)

(ii) Cost per factory minute

(iii) Return per factory minute for both products

(iv) TA ratios for both product

(v) Throughput cost per the week

(vi) Efficiency ratio **[1.5x6=9]**

Answer:

(i) Total factory cost= Total of all costs except materials.

= ₹25,000+₹12,500+₹1,750+₹22,500+₹8,000+₹3,500+₹5,000

=₹78,250

(ii) Cost per Factory Minute=Total Factory Cost÷ Minutes available

= ₹78,250÷ 31,300

=₹2.50

(iii)

(a) Return per bottleneck minute for the product A= $\frac{\text{Selling Price} - \text{Material Cost}}{\text{Minutes in bottleneck}}$

= (40-20)/5

=₹4

(b) Return per bottleneck minute for the product B= $\frac{\text{Selling price} - \text{Material Cost}}{\text{Minutes in bottleneck}}$

= (40-17.5)/10
=₹2.25

(iv) Throughput Accounting (TA) Ratio for the product A= $\frac{\text{Return per Minute}}{\text{Cost per Minute}}$

= (4/2.5)
=₹1.6

Throughput Accounting (TA) Ratio for the product B= $\frac{\text{Return per Minute}}{\text{Cost per Minute}}$

= (2.25/2.5)
=₹0.9

Based on the review of the TA ratios relating to two products, it is apparent that if we only made product B, the enterprise would suffer a loss, as its TA ratio is less than 1. Advantage will be achieved, when product A is made.

(v) Standard minutes of throughput for the week:
= [4,750×5] + [650×10]
= 23,750+6,500
=30,250 minutes
Throughput Cost per week:
=30,250×₹2.5 per minutes
=₹75,625

(vi) Efficiency % =(Throughput Cost/ Actual TFC) %
= (₹75,625/₹78,250) ×100
=96.6%

The bottleneck resource of facility A is advisable for 31,300 minutes per week but produced only 30,250 standard minutes. This could be due to:
(a) The process of a 'wandering' bottleneck causing facility A to be underutilized.
(b) Inefficiency in facility A.

Question.3
(a) The following information are provided to you for a month in respect of a workshop:
(i) Overhead cost variance – ₹ 1,400 adverse
(ii) Overhead volume variance – 1,000 adverse
(iii) Budgeted hours - 1,200 hrs.
(iv) Budgeted overhead – ₹ 6,000
(v) Actual rate of recovery of overheads - ₹ 8 per hour
You are required to compute:
(1) Overhead expenditure variance
(2) Actual overheads incurred
(3) Actual hours for actual production
(4) Overheads capacity variance
(5) Overheads efficiency variance
(6) Standard hours for actual production **[1.5x6=9]**

Answer:
Working Notes:

Standard Rate of recovery of overhead rate=BOH/BH= ₹ 6,000/1,200 hrs. = ₹ 5

(1) Overhead expenditure variance = BOH - AOH= 6,000 - 6,400 = 400 (Adv)
Reconciliation of overheads expenditure variance
Overheads cost variance = Exp. Variance + Volume variance
1,400 (Adv) = 400 (Adv) + 1,000 (Adv)

(2) Actual overheads incurred
SOH=1000 hrs at ₹ 5 = ₹ 5,000
O/H Cost Var. = SOH – AOH
1400A = 5000 –AOH
-1400 = 5000 -AOH
∴ AOH = 5000 + 1400 = ₹ 6,400

(3) Actual hours for Actual production (AH)
= Actual overheads incurred/Actual rate of recovery of overheads
= ₹ 6,400 / ₹ 8 = 800 hours (AH)

(4) Overhead Capacity variance = SR (BH - AH) = 5(1200 - 800) = 2,000A

(5) Overheads Efficiency variance = SR (SH - AH) = 5(1,000 - 800) = 1,000F

Reconciliation:
Volume variance = Capacity variance + Efficiency variance
or, 1000A = 2000 A + 1000 F

(6) Standard Hours for actual production (SH)
Volume variance = SR (SH – BH)
1000A = 5(SH – 1200)
– 1000 = 5 SH – 6000
Or, SH = (6000 – 1000)/5 = 1000 hrs.

(b) ABC Ltd. produces three joint products X, Y and Z. The products are processed further. Pre-separation costs are apportioned on the basis of weight of output of each joint product. The following data are provided for month just concluded:
Cost incurred up to separation point is ₹10,000.

	Product X	Product Y	Product Z
Output (in litre)	**100**	**70**	**80**
	₹	₹	₹
Cost incurred after separation point	**2,000**	**1,200**	**800**
Selling price per Litre:			
After further processing	**50**	**80**	**60**
At pre separation point (estimated)	**25**	**70**	**45**

You are required to:
(i) Prepare a statement showing profit or loss made by each product using the present method of apportionment of pre-separation cost, and
(ii) Advice the management whether, on purely financial consideration, the three products are to be processed further. [3+3]

Answer:

Profit Statement for three Joint products:

	Product X	Product Y	Product Z	Total
	₹	₹	₹	₹
Sales	5,000	5,600	4,800	15,400

Less:				
Pre Separation Costs	4,000	2,800	3,200	10,000
Post Separation Cost	2,000	1,200	800	4,000
Profit/(Loss)	(1,000)	1,600	800	1,400

Decision whether to further process the product or not:

Product	Incremental Revenue	Incremental Costs	Incremental Profit/(Loss)
	₹	₹	₹
X (₹25x100)	2,500	2,000	500
Y (₹10x70)	700	1,200	(500)
Z (₹15x80)	1,200	800	400
			400

Product X and Z should be further processed. Y should be sold at point of separation.

Question.4

(a) An amount of ₹ 19,80,000 was incurred on a contract work upto 31.03.2014. Certificates have been received to date to the value of ₹ 24,00,000 against which ₹ 21,60,000 has been received in cash. The cost of work done but not certified amounted to ₹ 45,000. It is estimated that by spending an additional amount of ₹ 1,20,000 (including provision for contingencies) the work can be completed in all respects in another two months. The agreed contract price of the work is ₹ 25 lakhs. Compute a conservative estimate of the profit to be taken to the profit & Loss Account. Illustrate at least four methods of computing the profit. [8]

Answer:

Computation of Estimated Total Profit (N.P)

Expenditure incurred upto 31st March, 2014	₹19,80,000
Estimated additional expenditure (including provision for contingencies)	1,20,000
Estimated total cost (A)	21,00,000
Contract price (B)	25,00,000
Estimated total profit (B-A)	4,00,000

Computation of Notional Profit

Value of Work-Certified	₹ 24,00,000
Work not certified	₹ 45,000
	₹ 24,45,000
Less: Total expenditure up to date	₹ 19,80,000
Notional Profit	₹ 4,65,000

COMPUTATION OF CONSERVATIVE ESTIMATE OF THE PROFIT TO BE TAKEN TO PROFIT & LOSS ACCOUNT:

(i) $\text{Estimated Profit} \times \frac{\text{Value of work certified}}{\text{Contract price}} \times \frac{\text{Cash received}}{\text{Value of work Certified}}$

$= 4,00,000 \times \frac{24,00,000}{25,00,000} \times \frac{21,60,000}{24,00,000}$

=₹ 3,45,600

Or,

(ii) $\text{Estimated profit} \times \frac{\text{Cost of work to date}}{\text{Estimated Total Cost}} \times \frac{\text{Cash received}}{\text{Value of work Certified}}$

$$= 4,00,000 \times \frac{19,80,000}{21,00,000} \times \frac{21,60,000}{24,00,000}$$

=₹ 3,39,429 i.e., 3,39,430

Or,

(iii) $\text{Estimated profit} \times \frac{\text{Cash received}}{\text{Value of work Certified}}$

$$= 4,00,000 \times \frac{21,60,000}{24,00,000}$$

=₹3,60,000

Or,

(iv) $\text{Notional Profit} \times \frac{\text{Work Certified}}{\text{Contract Price}}$

$$= 4,65,000 \times \frac{24,00,000}{25,00,000}$$

=₹ 4,46,400

(b) Zenith Transport Company has given a route of 40 kilometers long to run bus. The bus costs the company a sum of ₹ 1,00,000. It has been insured at 3% p.a. and the annual tax will amount to ₹ 2,000. Garage rent is ₹ 200 per month. Annul repairs will be ₹ 2,000 and the bus is likely to last for 5 year. The driver's salary will be ₹ 300 per month and the conductor's salary will be ₹ 200 per month in addition to 10% of takings as commission (to be shared by the driver and the conductor equally.)

Cost of stationary will be ₹ 100 per month. Manager-cum-accountant's salary is ₹ 700 per month. Petrol and oil will be ₹ 50 per 100 kilometer. The bus will make 3 up and down trips carrying on an average 40 passengers on each trip.

Assuming 15% profit on takings, calculate the bus fare to be charged from each passenger. The bus will run an average 25 days in a month. [7]

Answer:

Statement showing fare to be charged

Particulars	Amount p.a. (₹)	Amount p.m.(₹)
(a) Standing charges:		
• Insurance @ 3% on ₹ 1,00,000	3,000	
• Tax	2,000	
• Garage rent @ ₹ 200 per month	2,400	
• Driver's salary @ ₹ 300 per month	3,600	
• Conductor's Salary @ ₹ 200 per month	2,400	
• Stationary @ ₹ 100 per month	1,200	
• Manager-cum-accountant's Salary @ ₹ 700 month	8,400	
• **Total standing charges**	**23,000**	**1,916.67**
(b) Running Expenses		
• Depreciation ₹1,00,000/5	20,000	1,666.67
• Repairs	2,000	166.66
• Petrol & oil ₹ 0.50×[40km × 2 × 3 × 25]		3,000.00
• Commission		900.00
• Profit		1,350.00
• **Total Taking**		**9,000**
• Fare per passenger kilometer (₹ 9,000 /2,40,000#)	0.0375	0.0375
• Fare passenger (₹ 9,000 / 6,000)		₹1.50

*** Computation of commission and profit.**

Less: Total taking be x

Commission @ 10%=x/10, profit is 15% of taking.

* Hence Profit=15x/100=3x/20

* Total cost without commission=₹6,750 (standing charges+ Running charges)

* Hence x=₹6,750+ x/10 + 3x/20

Solving the equation for x we get x= ₹9,000, which is total takings.

* Therefore, commission will be 10% of total taking=₹900

* Profit @15% of total taking=₹1,350

 # Total passenger kilometers an computed is shown below:

40 km. ×2(up+ down)×3 trips×25 days×401 passengers

=2,40,000 passenger km/month.

Calculation of total passenger

=40 passenger each trip × 2(up + down) × 3 trips × 25 days

=6,000 passengers

Question.5

(a) ABC Ltd., a manufacturing company having a capacity of 60,000 units, has prepared a following Cost Sheet:

Particulars	₹
Direct material (per unit)	12.50
Direct wages (per unit)	5.00
Semi-variable cost	30,000 fixed plus 0.50 per unit
Factory overhead (per unit)	10.00 (50% fixed)
Selling and Administration overhead (per unit)	8.00 (25% variable)
Selling price (per unit)	40.00

During the last year the sales volume achieved by the company was 50,000 units. The Company has launched an expansion program as under –

(i) Capacity will be increased to 1,00,000 units.

(ii) Cost of investment on expansion is ₹ 5 lakhs, which is proposed to be financed through Financial Institution at 12% p.a.

(iii) Depreciation rate of new investment is 10% based on Straight-Line method.

(iv) Additional fixed overhead will be ₹ 2 lakhs up to 80,000 units, and will increase by ₹ 80,000 more beyond 80,000 units

After the expansion, the company has two alternatives for operating the expanded plan as under –

(i) Sales can be increased upto 80,000 units by spending ₹ 50,000 on special advertisement campaign to explore new market.

(ii) Sales can be increased upto 1,00,000 units subject to the following –

(a) Reduction of selling price by ₹ 4 per unit on all the units sold.

(b) The direct material cost would go down by 4% due to discount on bulk buying

(c) Increasing the variable selling and administration expenses by 4%.

Required:

(i) Construct a Flexible Budget at the level 50,000 units, 80,000 units and 1,00,000 units of production and select the best profitable level of operation.

(ii) Calculate Break Even Point both before and after expansion. [8+4]

Answer:

Computation of fixed cost at different levels

Quantity/ Output level	50,000 units	80,000 units	1,00,000 units
Present fixed costs	₹	₹	₹

From Semi-variable cost (given)	30,000	30,000	30,000
From Factory OH (₹ 10 x 50% x 60,000 units)	3,00,000	3,00,000	3,00,000
From Selling OH (₹ 8 x 75% x 60,000 units)	3,60,000	3,60,000	3,60,000
Sub-total	6,90,000	6,90,000	6,90,000
Add: Interest on Investment (₹ 5,00,000 x 12%)	-	60,000	60,000
Additional fixed cost	-	2,00,000	2,80,000
Depreciation on new investment (₹ 5,00,000 x 10%)	-	50,000	50,000
Special advertisement campaign	-	50,000	-
Total fixed cost	6,90,000	10,50,000	10,80,000

(i) Flexible Budget at different output levels

Quantity/ Output level	**50,000 units**	**80,000 units**	**1,00,000 units**
	₹	₹	₹
Selling price p.u.	40	40	(40 – 4) = 36
Sales value	20,00,000	32,00,000	36,00,000
Variable costs			
Direct materials (at ₹ 12.50 p.u.)	(50,000 x 12.50) = 6,25,000	(80,000 x 12.50) = 10,00,000	(1,00,000 x 12.50 – 4%) = 12,00,000
Direct wages (at ₹ 5 p.u.)	(50,000 x 5.00) = 2,50,000	(80,000 x 5.00) = 4,00,000	(1,00,000 x 5.00) = 5,00,000
Variable Overheads :			
From Semi-variable cost (₹ 0.50 p.u.)	(50,000 x 0.50) = 25,000	(80,000 x 0.50) = 40,000	(1,00,000 x 0.50) = 50,000
From factory overhead (₹ 10 x 50% = ₹ 5)	(50,000 x 5.00) = 2,50,000	(80,000 x 5.00) = 4,00,000	(1,00,000 x 5.00) = 5,00,000
From Selling overhead (₹ 8 x 25% = ₹ 2)	(50,000 x 2.00) = 1,00,000	(80,000 x 2.00) = 1,60,000	(1,00,000 x 2 + 4%) = 2,08,000
Total variable cost	12,50,000	20,00,000	24,58,000
Contribution	7,50,000	12,00,000	11,42,000
Fixed cost	6,90,000	10,50,000	10,80,000
Profit	60,000	1,50,000	62,000

Decision: The Company can earn maximum profits at 80,000 units. So, it is the profitable level of operation.

(ii) Computation of Break Even Quantity

Particulars	**Before expansion**	**After expansion**	
		Proposal I	**Proposal II**
Output level	50,000 units	80,000 units	1,00,000 units
Fixed cost	₹ 6,90,000	₹ 10,50,000	₹ 10,80,000
Contribution p.u.	(₹ 7,50,000 ÷ 50,000 units) = ₹ 15.00	(₹ 12,00,000 ÷ 80,000 units) = ₹ 15.00	(₹ 11,42,000 ÷ 1,00,000 units) = ₹ 11.42
BEQ	(6,90,000 ÷ 15)= 46,000 units	(10,50,000 ÷ 15)= 70,000 units	(10,80,000 ÷ 11.42)= 94,570 units
BES	46,000 units x ₹ 40 = ₹ 18,40,000	70,000 units x ₹ 40 = ₹ 28,00,000	94,570 units x ₹ 36 = ₹ 34,04,520

(b) State the scope of Uniform Costing. **[3]**

Answer:

Scope of Uniform Costing:

Uniform costing methods may be advantageously applied:

(i) In a single enterprise having a number of branches or units, each of which may be a separate manufacturing unit.
(ii) In a number of concerns in the same industry bound together through a trade association or otherwise, and
(iii) In industries which are similar in nature such as gas and electricity, various types of transport, and cotton, jute and woolen textiles.

The need for application of Uniform Costing System exists in a business, irrespective of the circumstance and conditions prevailing therein. In concerns which are members of a trade association, the procedure for Uniform Costing may be devised and controlled by the association or by any other central body specially formed for the purpose.

Question.6

(a) What are the limitations of ZBB? [4]

Answer:

The limitations are as follows:

(i) Lack of co-ordination: Various operational problems are likely to be faced in implementing the technique of ZBB. It requires the wholehearted support from Top Management.
(ii) Old is gold attitude: Generally, managers are reluctant to start afresh. They tend to plan for future just by reference to past actions and budgets.
(iii) Time consuming: It is time consuming as well as costly. It needs properly trained managerial personnel to do the required job.
(iv) Lack of adequate data: ZBB requires data for justifying the allocation of resources to various alternatives in every period. Sometimes, this data may not be available for analysis.

(b) The New Enterprises Ltd. has Production Depts. A, B and C and two Service Depts. D and E. The following figures are extracted from the records of the company.

Rent and Rates	**₹5,000**
General Lighting	**600**
Indirect Wages	**1,500**
Power	**1,500**
Depreciation of Machinery	**10,000**
Sundries	**10,000**

The following further details are available:

	Total	A	B	C	D	E
Floor Space (Sq. ft.)	**10,000**	**2,000**	**2,500**	**3,000**	**2,000**	**500**
Light Points	**60**	**10**	**15**	**20**	**10**	**5**
Direct Wages (₹)	**10,000**	**3,000**	**2,000**	**3,000**	**1,500**	**500**
H.P. of Machines	**150**	**60**	**30**	**50**	**10**	**-**
Value of Machinery (₹)	**2,50,000**	**60,000**	**80,000**	**1,00,000**	**5,000**	**5,000**
Working Hours	**-**	**6,226**	**4,028**	**4,066**	**-**	**-**

The expenses of D and E are allocated as following:

	A	B	C	D	E
D	**20%**	**30%**	**40%**	**-**	**10%**
E	**40%**	**20%**	**30%**	**10%**	**-**

What is the total cost of an article if its raw material cost is ₹ 50, labour cost ₹ 30, and it passes through departments A, B and C for 4, 5 and 3 hours respectively. [8]

Answer:

(i) OVERHEADS PRIMARY DISTRIBUTION SUMMARY

Items	Basis of Charge	Total	Production Deptts.			Service Deptts.	
			A	B	C	D	E
		₹	₹	₹	₹	₹	₹
Direct Wages	Allocation	2,000	-	-	-	1,500	500
Rent and Rates	₹ 0.50 per sq. ft.	5,000	1,000	1,250	1,500	1,000	250
General Lighting	₹ 0.10 per point	600	100	150	200	100	50
Indirect Wages	15% of Direct Wages	1,500	450	300	450	225	75
Power	₹10 per H.P.	1,500	600	300	500	100	-
Depreciation of Machinery	4% of the value of Machinery	10,000	2,400	3,200	4,000	200	200
Sundries	100% of Direct Wages	10,000	3,000	2,000	3,000	1,500	500
Total Departmental Overheads		30,600	7,550	7,200	9,650	4,625	1,575

(ii) **OVERHEADS SECONDARY DISTRIBUTION SUMMARY**
(REPEATED DISTRIBUTION METHOD)

Items	Production Deptts.			Service Deptts.	
	A	B	C	D	E
Total overheads as per (i)	7,550	7,200	9,650	4,625	1,575
Dept. D overheads apportioned	925	1,387	1,850	(4,625)	463
Dept. E overheads apportioned (1,575 + 463)	815	408	611	204	(2,038)
Dept. D overheads apportioned	41	61	82	(204)	20
Dept. E overheads apportioned	8	4	6	2	(20)
Dept. D overheads apportioned	-	1	1	(2)	-
Total	9,339	9,061	12,200		
Working Hours	6,226	4,028	4,066		
Rate per hour	1.50	2.25	3.00		

STATEMENT SHOWING THE TOTAL COST OF THE ARTICLE

Direct Material		₹ 50.00
Direct Labour		30.00
		80.00
Prime Cost		
Overheads:		
Department A : 4 hours @ ₹ 1.50 per hour	6.00	
Department B : 5 hours @ ₹ 2.25 per hour	11.25	
Department C : 3 hours @ ₹ 3.00 per hour	9.00	26.25
		106.25

(c) Calculation of a basic EOQ depends on certain assumptions. "List down these assumptions. **[3]**

Answer

The computation of economic order quantity is subject to the following assumptions:

(i) Ordering cost (per order) and carrying cost (per unit/annum) are known and constant.

(ii) Anticipated usage (in units) of material for a period is uniform and known.

(iii) Cost per unit of the material (to be purchased) is known and it is constant.

Question.7

(a) SK Enterprise manufactures a special product "ZE". The following particulars were collected for the year 2013:

Annual consumption	**12,000 units (360 days)**
Cost per unit	**₹ 1**
Ordering cost	**₹ 12 per order**
Inventory carrying cost	**24%**
Normal lead time	**15 days**
Safety stock	**30 days consumption**

Required:

(i) Re-order quantity

(ii) Re-order level

(iii) What should be the inventory level (ideally) immediately before the material order is received? (2+1+1)

Answer

(i) How much should be ordered each time i.e., Economic Order Quantity (EOQ)

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

Where A is the annual consumption
B is the ordering cost per order
CS is the carrying cost per unit per annum

$$= \sqrt{\frac{2\times 12,000\times 12}{1\times(24/100)}} = \sqrt{12,00,000}$$

= 1095.4 units or say 1,100 units.

(ii) When should the order be placed i.e., reordering level
Reordering level = *Safety stock +normal lead time consumption

$$\text{Reordering level} = \left[\frac{12000}{360}\times 30\right] + \left[\frac{12,000}{360}\times 15\right]$$

= 1,000+500 = 1,500 units.

(iii) What should be the inventory level (ideally) immediately before the material ordered is received i.e. the Safety Stock.

$$\text{*Safety Stock} = \left[\frac{12,000}{360}\times 30\right]$$

= 1,000 units.

(b) Explain the treatment of overtime premium in cost accounting. Suggest steps for controlling overtime. [2+2]

Answer

Treatment of Overtime premium is Cost Accounting

In cost accounting the treatment of overtime premium will be as follows:

(i) If the overtime is resorted to at the desire of the customer, then the entire amount of overtime including overtime premium should be charged to the job directly.

(ii) If it is due to a general pressure of work to increase the output, the premium as well as overtime wages may be charged to general overheads.

(iii) If it is due to the negligence or delay of workers of a particular department, it may be charged to the concerned department.

(iv) If it is due to circumstances beyond control, it may be charged to Costing Profit & Loss Account.

Steps for Controlling Overtime:

Important steps for controlling overtime work are as follows:

(i) Entire overtime work should be duly authorized after investigating the reasons for it.

(ii) Overtime cost should be shown against the concerned department. Such a practice should enable proper investigation and planning of production in future.

(iii) If overtime is a regular feature, the necessity for recruiting more men and adding a shift should be considered.

(iv) If overtime is due to lack of plant and machinery or other resources, steps may be taken to install more machines, or to resort to sub-contracting.

(c) Calculate the earnings of A and B from the following particulars for a month and allocate the labour cost to each job X, Y and Z:

	A	B
(i) Basic Wages	**₹ 100**	**160**
(ii) Dearness Allowance	**50%**	**50%**
(iii) Contribution to Provident Fund (on basic wages)	**8%**	**8%**
(iv) Contribution to Employees' State Insurance (on basic wages)	**2%**	**2%**
(v) Overtime Hours	**10**	

The Normal working hours for the month are 200. Overtime is paid at double the total of normal wages and dearness allowance. Employer's contribution to State Insurance and Provident Fund are at equal rates and employees' contributions. The two workers were employed on jobs X, Y and Z in the following proportions:

	Jobs		
	X	**Y**	**Z**
Workers A	**40%**	**30%**	**30%**
Worker B	**50%**	**20%**	**30%**

Overtime was done on job Y. **[4+3]**

Answer.

Statement Showing Earnings of Workers A and B

Workers:	A	B
	₹	₹
Basic Wages	100	160
Dearness Allowance (50% of Basic Wages)	50	80
Overtime Wages (Refer to Working Note 1)	15	-
Gross Wages earned	165	240
Less: - Provident Fund – 8% of Basic wages		
- ESI – 2% of Basic wage	10	16
Net Wages paid	155	224

Statement of Labour Cost:	₹	₹
Gross Wages (excluding overtime)	150	240
Employer's Contribution to P.F. and E.S.I.	10	16
Ordinary wages	160	256
Labour Rate per hour	0.80 (₹ 160/200)	1.28 (₹ 256/200)

Statement Showing allocation of Wages to Jobs

Total Wages:		Jobs X	Y	Z
	₹	₹	₹	₹
Worker A:				
Ordinary Wages: (4 : 3 :3)	160	64	48	48
Overtime	15	–	15	–
Workers B:				
Ordinary Wages: (5: 2 : 3)	256	128	51.20	76.8
	431	192	114.2	124.8

Working Notes:

1. Normal Wages are considered as basic wages

$$\text{Overtime} = \frac{2 \times (\text{Basic wage} + \text{D.A.})}{200} \times 10 \text{ hours}$$

= 2 × (₹ 150/200) × 10 hours = ₹ 15/-.

Question.8. Write a short note on any three of the following: **[3× 5 = 15]**

(a) Importance of Time and Motion study
(b) Scope of Cost Accountancy
(c) The advantages of time rate remuneration plans
(d) Classification of cost based on function
(e) Causes of Labour Turnover

Answer:

(a) Time and motion study is important to management because of the following features:

- **(i)** Improved methods, layout, and design of work ensure effective use of men, material and resources.
- **(ii)** Unnecessary and wasteful methods are pin-pointed with a view to either improving them or eliminating them altogether. This leads to reduction in the work content of an operation, economy in human efforts and reduction of fatigue.
- **(iii)** Highest possible level of efficiency is achieved in all respect.
- **(iv)** Provides information for setting labour standards - a step towards labour cost control and cost reduction.
- **(v)** Useful for fixing wage rates and introducing effective incentive scheme.

(b) Scope of Cost Accountancy

The scope of Cost Accountancy is very wide and includes the following:-

- **(i)** Cost Ascertainment: The main objective of Cost Accounting is to find out the Cost of product / services rendered with reasonable degree of accuracy.
- **(ii)** Cost Accounting: It is the process of Accounting for Cost which begins with recording of expenditure and ends with preparation of statistical data.
- **(iii)** Cost Control: It is the process of regulating the action so as to keep the element of cost within the set parameters.
- **(iv)** Cost Reports: This is the ultimate function of Cost Accounting. These reports are primarily prepared for use by the management at different levels. Cost reports helps in planning and control, performance appraisal and managerial decision making.
- **(v)** Cost Audit: Cost Audit is the verification of correctness of Cost Accounts and check on the adherence to the Cost Accounting plan. Its purpose is not only to ensure the

arithmetic accuracy of cost records but also to see the principles and rules have been applied correctly.

To appreciate fully the objectives and scope of Cost Accounting, it would be useful to examine the position of Cost Accounting in the broader field of general accounting and other sciences. i.e Financial Accounting , Management Accounting, Engineering and Service Industry.

(c) The advantages of time rate remuneration plans are as follows:

(i) It is commonly recognized by all trade unions as well as worker
(ii) It is a guaranteed income assured to the worker
(iii) It is very easy to understand and simple to calculate the earnings of worker
(iv) It involves less clerical work and detailed records are not necessary.
(v) Since the production is not the criteria for calculation of wages, tools and materials are handled carefully. Wastage is also minimized.

(d) Based on the functions, the cost can be classified into:

(i) Production Cost – The production cost is inclusive of all direct material, direct labour, direct expenses and manufacturing expenses. It refers to costs concerned with manufacturing activity which starts with supply of material and ends with primary packing of the product.

(ii) Administration Cost – The Administration cost in incurred for carrying the administrative function of the organization i.e. cost of policy formulation and its implementation to attain the objectives of the organization.

(iii) Selling and Distribution Cost – The Selling cost refers to the cost of selling function i.e. the cost of activities relating to create and stimulate demand for company's products and to secure orders. The Distribution costs will be incurred on goods made available to the customers. These costs include the cost of maintaining and creating demand of product, making the goods available in the hands of customer.

(iv) Research and Development Cost – The Research cost is the cost of searching for new products, new manufacturing process, improvement of existing products, processes or equipment and the Development cost is the cost of putting research result on commercial basis.

(e) Causes of Labour Turnover:

The causes of Labour Turnover can be divided into two categories: Avoidable and unavoidable.

(i) Avoidable Causes: These causes include the following:

- Dissatisfaction with the job.
- Dissatisfaction with the working hours
- Dissatisfaction with the working environment.
- Relationship with colleagues.
- Dissatisfaction with monetary and non monetary incentives.
- Relationship with superiors
- Other reasons like lack of facilities like absence of group insurance, good canteens, poor housing amenities, bad management etc.

(ii) Unavoidable causes: These causes include the following:

- Personnel betterment
- Retirement
- Death
- Illness or accident
- Termination
- Marriage

- Pregnancy
- Other reasons like family commitments, attitude, organizational culture, etc.