Mock Test Paper - Series I: July, 2025

Date of Paper: 24th July, 2025

Time of Paper: 10 A.M. to 1 P.M.

INTERMEDIATE: GROUP - II

PAPER - 4: COST AND MANAGEMENT ACCOUNTING

PART I - Case Scenario based MCQs (30 Marks)

ANSWERS

1. (c) ₹ 40,000

Calculate units at each price:

Units at ₹ 10 per unit: 10,000 units

Cost for these units: ₹ 1,00,000

Remaining cost for units at ₹ 12 per unit: ₹ 130,000 - ₹ 100,000 = ₹ 30,000

Units at ₹ 12 per unit: $\frac{₹\ 30,000}{₹\ 12}$ = 2,500 units

Total units purchased: 10,000 + 2,500 = 12,500 units

Opening Stock: $\frac{₹\ 50,000}{₹\ 10}$ = 5,000 units

Total units available: 5,000 + 12,500 = 17,500 units

Units consumed in production: 14,000 units

Closing Stock Units: 17,500 - 14,000 = 3,500 units

Closing Stock Value (FIFO) = (2500 units at ₹ 12 + 1,000 units at ₹ 10)

= (2500 x ₹ 12) + (1,000 x ₹ 10) = ₹ 30,000 + ₹ 10,000 = ₹ 40,000

2. (b) ₹ 315,000

Cost of Production = Prime Cost + Factory Overheads + Quality Control Costs + Research and Development Costs + Opening WIP – Closing WIP

Prime Cost = Direct Materials Consumed + Direct Labor + Direct Expenses

= (₹ 140,000 + ₹ 90,000 + ₹ 30,000) + ₹ 60,000 + ₹ 5,000 + ₹ 10,000 - ₹ 20,000 (WIP adjustment) = ₹ 315,000

3. (a) ₹ 320,000

Cost of Goods Sold = Cost of Production + Opening Stock of Finished Goods - Closing Stock of Finished Goods

= ₹ 315,000 + ₹ 30,000 - ₹ 25,000 = ₹ 320,000

4. (a) ₹ 350,000

Cost of Sales = Cost of Goods Sold + Administration Overheads + Selling and Distribution Overheads

= ₹ 320,000 + ₹ 20,000 + ₹ 10,000 = ₹ 350,000

5. (c) ₹ 84.21

Cost per Unit of Goods Sold = Cost of Goods Sold / Units Sold

= ₹ 320,000 / 3,800 units = ₹ 84.21

6. (b) 46,000 bags

7. (d) 1,09,000, 3,35,000 and 37,000

8. (a) 1,30,800, 67,000 and 29,600

9. (c) ₹ 6.50

10. (d) ₹ 47,500

Working Note:

(i) Production Budget of 'X' for the Second Quarter

Particulars	Bags (Nos.)
Budgeted Sales	50,000
Add: Desired Closing stock	11,000
Total Requirements	61,000
Less: Opening stock	15,000
Required Production	46,000

(ii) Raw–Materials Purchase Budget in Quantity as well as in ₹ for 46,000 Bags of 'X'

Particulars	'Y' Kgs.	'Z' Kgs.	Empty Bags Nos.
Production Requirements Per bag of 'X'	2.5	7.5	1.0
Requirement for Production	1,15,000 (46,000 × 2.5)	3,45,000 (46,000 × 7.5)	46,000 (46,000 × 1)
Add: Desired Closing Stock	26,000	47,000	28,000
Total Requirements	1,41,000	3,92,000	74,000
Less: Opening Stock	32,000	57,000	37,000
Quantity *to be purchased*	1,09,000	3,35,000	37,000
Cost per Kg./Bag	₹ 1.20	₹ 0.20	₹ 0.80
Cost of Purchase (₹)	1,30,800	67,000	29,600

(iii) Computation of Budgeted Variable Cost of Production of 1 Bag of 'X'

Particulars	(₹)
Raw – Material	
Y 2.5 Kg @1.20	3.00
Z 7.5 Kg. @0.20	1.50
Empty Bag	0.80
Direct Labour (₹ 5 × 9 minutes / 60 minutes)	0.75
Variable Manufacturing Overheads	0.45
Variable Cost of Production *per bag*	6.50

(iv) Budgeted Net Income for the Second Quarter

Particulars	Per Bag (₹)	Total (₹)
Sales Value (50,000 Bags)	9.00	4,50,000
Less: Variable Cost:		
Production Cost	6.50	3,25,000
Admn. & Selling Expenses (5% of Sales Price)	0.45	22,500
Budgeted Contribution	2.05	1,02,500

Less: Fixed Expenses:		
Manufacturing		30,000
Admn. & Selling		25,000
Budgeted Net Income		47,500

11. (c) Material cost = ₹ 1,500

Labour cost = ₹ 1,300

Overhead = ₹ 164

Total production cost = ₹ 1,500 + ₹ 1,300 + ₹ 164 = ₹ 2,964

Unit transferred = 40 – 5% of 40 = **38 units**

Value of units transferred to :

$$= \frac{\text{Total Cost - Realisable value of normal loss}}{\text{Total input units - Normal loss units}}$$

$$= \frac{₹\,2,964 - ₹\,0}{40\,\text{units} - 2\,\text{units}} = \textbf{₹ 78}$$

12. (c) Statement showing computation of the cost of processing a home loan application

Particulars	**(₹)**
Direct professional labour cost (16 employees @ ₹ 94,500 each)	15,12,000
Service overhead cost (30% of ₹ 11,40,300)	3,42,090
Total processing cost per month	18,54,090
No. of applications processed per month	480
Total processing cost per home loan application	3,862.69

13. (b) ₹ 5.30

Material Price Variance = (Standard Price - Actual Price) x Actual Quantity

600 = (5.50 - AP) x 3,000

AP = 5.50 - 0.20 = ₹5.30

14. (a) 2,376 units

$$EBQ = \sqrt{\frac{2DS}{C}}$$

Where, D = Annual demand for the product = 2,000 × 12 = **24,000 units**

S = Setting up cost per batch = ₹ 3,000

C = Carrying cost per unit of production = ₹ 24 (storage) + ₹ 1.50 (interest) = **₹ 25.50**

Storage cost per year = ₹ 2 × 12 = ₹ 24 per unit per year

Opportunity cost = 18% of ₹ 50 = ₹ 9 per unit per year

Since the average inventory is held for 2 months, the effective interest cost is:

= 9 x (2/12) = ₹ 1.5 per unit per year

$$EBQ = \sqrt{\frac{2 \times 24,000 \times 3,000}{25.50}} = 2,376 \text{ units}$$

15. (d) 19,800

Production = 70% of June sales + 30% of July sales (Closing inventory) – Opening inventory

= 24,000 x 70% + 30,000 x 30% - 6,000

= 19,800 units

PART-II Descriptive Questions (70 Marks)

1. (a) (i) Workings:

Annual production of Product X = Annual demand – Opening stock

= 5,00,000 – 12,000 = 4,88,000 units

Annual requirement for raw materials = Annual production × Material per unit – Opening stock of material

Material A = 4,88,000 × 4 units – 24,000 units = 19,28,000 units

Material B = 4,88,000 × 16 units – 52,000 units = 77,56,000 units

(i) Computation of EOQ when purchase order for the both materials is placed separately

$$\text{EOQ} = \sqrt{\frac{2 \times \text{Annual Requirement for material} \times \text{Ordering cost}}{\text{Carrying cost per unit per annum}}}$$

$$\text{Material A} = \sqrt{\frac{2 \times 19,28,000 \text{ units} \times ₹\,15,000}{13\% \text{ of } ₹\,150}}$$

$$= \sqrt{\frac{38,56,000 \times ₹15,000}{₹19.5}} = 54,462 \text{ units}$$

$$\text{Material B} = \sqrt{\frac{2 \times 77,56,000 \text{ units} \times ₹\,15,000}{13\% \text{ of } ₹\,200}}$$

$$= \sqrt{\frac{1,55,12,000 \times ₹15,000}{₹26}}$$

$$= 94,600 \text{ units}$$

(ii) Computation of EOQ when purchase order for the both materials is not placed separately

$$\text{Material A \& B} = \sqrt{\frac{2 \times (19,28,000 + 77,56,000) \text{ units} \times ₹15,000}{13\% \text{ of } ₹190}}$$

$$= \sqrt{\frac{1,93,68,000 \times ₹15,000}{₹24.7}} = 1,08,452 \text{ units}$$

$$\text{Material A} = \frac{1,08,452 \times 19,28,000}{96,84,000} = 21,592 \text{ units}$$

$$\text{Material A} = \frac{1,08,452 \times 77,56,000}{96,84,000} = 86,860 \text{ units}$$

$$* \frac{(₹150 \times 19,28,000) + (₹200 \times 77,56,000)}{(19,28,000 + 77,56,000)} = ₹\ 190$$

(b) For Material Cost Variances:

	SQ × SP	AQ × AP	AQ × SP
X	12,000 x 4 x ₹ 8 = ₹ 3,84,000	50,000 x ₹ 8.80 = ₹ 4,40,000	50,000 x ₹ 8 = ₹ 4,00,000

Y	12,000 x 6 x ₹ 6 = ₹ 4,32,000	72,000 x ₹ 5.60 = ₹ 4,03,200	72,000 x ₹ 6 = ₹ 4,32,000
Z	12,000 x 30 x ₹ 2 = ₹ 7,20,000	3,54,000 x ₹ 2.40 = ₹ 8,49,600	3,54,000 x ₹ 2 = ₹ 7,08,000
Total	₹ 15,36,000	₹ 16,92,800	₹ 15,40,000

Material Price Variance = Actual quantity (Std. price – Actual price)

= (AQ x SP) – (AQ x AP)

= ₹ 15,40,000 – ₹ 16,92,800

= ₹ 1,52,800 (A)

Material Usage Variance = Standard Price (Std. Quantity – Actual Quantity)

= (SP x SQ) – (SP x AQ)

= ₹ 15,36,000 – ₹ 15,40,000

= ₹ 4,000 (A)

For Labour Cost Variance:

	SH × SR	**AH × AR**	**AH × SR**
Labour	(12,000 x 6) x ₹ 16 = ₹ 11,52,000	10,000 x ₹ 24 = ₹ 2,40,000 60,000 x ₹ 16 = ₹ 9,60,000	70,000 x ₹ 16 = ₹ 11,20,000
Total	₹ 11,52,000	₹ 12,00,000	₹ 11,20,000

Labour Rate Variance = Actual Hours (Std. Rate – Actual Rate)

= (AH x SR) – (AH x AR)

= ₹ 11,20,000 – ₹ 12,00,000

= ₹ 80,000 (A)

Labour Efficiency Variance = Standard Rate (Std. Hours – Actual Hours)

= (SR x SH) – (SR x AH)

= ₹ 11,52,000 – ₹ 11,20,000

= ₹ 32,000 (F)

(c) (i) In the First half year:

Contribution = Fixed cost + Profit

= ₹ 13,50,000 + ₹ 9,00,000

= ₹ 22,50,000

$$\text{P/V ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$= \frac{22,50,000}{45,00,000} \times 100$$

= 50%

$$\text{Break-even point} = \frac{\text{Fixed cost}}{\text{P/V ratio}}$$

$$= \frac{13,50,000}{50\%}$$

= ₹ 27,00,000

Margin of safety = Actual sales – Break-even point

= ₹ 45,00,000 – ₹ 27,00,000

= ₹ 18,00,000

(ii) In the second half year:

Contribution = Fixed cost – Loss

= ₹ 13,50,000 – ₹ 4,50,000

= ₹ 9,00,000

$$\text{Expected sales volume} = \frac{\text{Contribution}}{\text{P/V ratio}}$$

$$= \frac{9,00,000}{50\%}$$

= ₹ 18,00,000

2. Process- I Account

Particulars	Total (₹)	Cost (₹)	Profit (₹)	Particulars	Total (₹)	Cost (₹)	Profit (₹)
Opening stock	15,15,000	15,15,000	--	Process- II A/c*	1,09,08,000	81,81,000	27,27,000
Direct materials	30,30,000	30,30,000	--	Closing Stock	7,47,400	7,47,400	--

Direct wages	22,62,400	22,62,400	--				
Prime Cost	68,07,400	68,07,400					
Overheads	21,21,000	21,21,000	--				
Total Cost	89,28,400	89,28,400					
Profit**	27,27,000	--	27,27,000				
	1,16,55,400	89,28,400	27,27,000		1,16,55,400	89,28,400	27,27,000

*Transfer price = (Total Cost - Closing stock) $\left(1 + \frac{1}{3}\right)$

= (₹ 89,28,400 - ₹ 7,47,400) $\left(1 + \frac{1}{3}\right)$

= ₹ 1,09,08,000

**Profit on transfer = ₹ 1,09,08,000 × 1/4th

= ₹ 27,27,000

Process- II Account

Particulars	Total (₹)	Cost (₹)	Profit (₹)	Particulars	Total (₹)	Cost (₹)	Profit (₹)
Opening stock	18,18,000	15,15,000	3,03,000	Finished Stock A/c**	2,27,25,000	1,53,01,500	74,23,500
Transferred from Process- I	1,09,08,000	81,81,000	27,27,000	Closing stock*	9,09,000	7,57,500	1,51,500
Direct materials	31,81,500	31,81,500	--				
Direct wages	22,72,500	22,72,500	--				
Prime cost	1,81,80,000	1,51,50,000	30,30,000				
Overheads	9,09,000	9,09,000	--				
Total cost	1,90,89,000	1,60,59,000	30,30,000				
Profit***	45,45,000	--	45,45,000				
	2,36,34,000	1,60,59,000	75,75,000		2,36,34,000	1,60,59,000	75,75,000

* Cost of Closing Stock = $\frac{₹\ 1,51,50,000}{₹\ 1,81,80,000}$ x ₹ 9,09,000

= ₹ 7,57,500

**Transfer price = (Total Cost - Closing stock) $\left(1 + \frac{1}{4}\right)$

= (₹ 1,90,89,000 - ₹ 9,09,000) $\left(1 + \frac{1}{4}\right)$

= ₹ 2,27,25,000

***Profit on transfer = ₹ 2,27,25,000 × 1/5th

= ₹ 45,45,000

Finished Stock Account

Particulars	Total (₹)	Cost (₹)	Profit (₹)	Particulars	Total (₹)	Cost (₹)	Profit (₹)
Opening stock	45,45,000	28,78,500	16,66,500	Costing P&L A/c	2,82,80,000	1,66,49,850	1,16,30,150
Process- II	2,27,25,000	1,53,01,500	74,23,500	Closing stock*	22,72,500	15,30,150	7,42,350
Profit	32,82,500	--	32,82,500				
	3,05,52,500	1,81,80,000	1,23,72,500		3,05,52,500	1,81,80,000	1,23,72,500

*Cost of Closing Stock $= \frac{\text{Cost of transfer from Process-II}}{\text{Transfer price from Process-II}} \times$ Value of closing stock

$= \frac{₹\ 1,53,01,500}{₹\ 2,27,25,000} \times ₹\ 22,72,500$

= ₹ 15,30,150

3. (a) (i) Statement Showing Allocation of Joint Cost

Particulars	BWX (Bio-Wax) (₹)	BFT (Bio-Fertiliser) (₹)
No. of Units Produced	2,200	3,000
Selling Price per Unit (₹)	55	40
Sales Value	**1,21,000**	**1,20,000**
Less: Estimated Profit (25% of sales for BWX, 20% for BFT)	(30,250)	(24,000)
Cost of Sales	**90,750**	**96,000**
Less: Selling Expenses (10% of sales for both)	(12,100)	(12,000)
Cost of Production	**78,650**	**84,000**
Less: Cost after Separation	(62,000)	(45,000)
Joint Cost Allocated	**16,650**	**39,000**

(ii) Statement of Product-wise and Overall Profitability for April 2025

Particulars	ABE (₹)	BWX (₹)	BFT (₹)
Sales Value (A)	9,00,000 (6,000 units x ₹ 150)	1,21,000	1,20,000

Less:			
Joint Cost	3,04,350 (3,60,000 -16,650 - 39,000)	16,650	39,000
Cost after Separation	–	62,000	45,000
Selling Expenses (15%, 10%, 10%)	1,35,000	12,100	12,000
Total Cost (B)	4,39,350	90,750	96,000
Profit (A – B)	**4,60,650**	**30,250**	**24,000**
Profit per Unit	**76.775**	**13.750**	**8.00**

Overall Profit = ₹4,60,650 + ₹30,250 + ₹24,000 = ₹5,14,900

(b) (i) Statement calculating profit as per cost records

Particulars	(₹)
Materials	75,00,000
Wages	37,50,000
Direct Expenses	Nil
Prime Cost	**1,12,50,000**
Add: Factory Overhead @ 120% of wages	45,00,000
Gross Factory Cost	**1,57,50,000**
Less: Closing WIP	(5,25,000)
Factory Cost of (50,000 + 3,075) units	1,52,25,000
Add: Admn. Overhead @ 20% of Factory cost	30,45,000
	1,82,70,000
Less: Closing Stock of finished goods (3,075 units)	(10,58,507)*
Cost of Goods sold (50,000 units)	**1,72,11,493**
Add: Selling & Dist. Overhead @ ₹ 15 per unit	7,50,000
Cost of sales (50,000 units)	**1,79,61,493**
Sales of 50,000 units	1,87,50,000
Profit	**7,88,507**

$* \left(\frac{3,075 \text{ units}}{53,075 \text{ units}} \times ₹ \ 1,82,70,000 \right)$

(ii) Reconciliation Statement

		(₹)	(₹)
Profit as per Cost Accounts			**7,88,507**
Add:	Factory overheads over-absorbed (₹ 45,00,000 - ₹ 33,75,000)	11,25,000	
	Admn. overhead over-absorbed (₹ 30,45,000 – ₹ 19,50,000)	10,95,000	
	Difference in the valuation of closing stock of finished goods (₹ 11,25,000 – ₹ 10,58,507)	66,493	22,86,493
			30,75,000
Less:	Selling & Dist. Overhead under-absorbed (₹ 13,50,000 – ₹ 7,50,000)	6,00,000	
	Goodwill written off	15,00,000	
	Interest on loan	1,50,000	22,50,000
Profit as per financial accounts			**8,25,000**

(c) Statement showing computation of effective hourly cost of employee 'A'

Particulars		**Per month (₹)**	**Per annum (₹)**
(A)	Earning of Employee 'A':		
	Basic pay	9,000	1,08,000
	Dearness Allowance	1,800	21,600
	Bonus	2,160	25,920
	Employer's contribution to P.F.	1,080	12,960
	Other allowances	2,250	27,000
		16,290	**1,95,480**
(B)	Effective working hours (refer working)		1,800 hours
(C)	**Effective hourly cost {(A) ÷ (B)}**		**₹108.60**

Working:

Calculation of effective working hours = Annual working hours - Normal idle time

= 2,160 hours – 360 hours

= 1,800 hours

4. (a) Calculation of Relevant In-House Cost and saving:

Component	Voice Module	Control Panel	Power Adapter
Direct Labour (₹)	1,500	2,000	1,200
Direct Material (₹)	1,200	1,800	1,100
Variable Overhead (₹)	700	900	600
Total In-House Cost (₹)	3,400	4,700	2,900
Outsource Price (₹)	3,700	4,600	3,300
Saving (₹)	300	(100)	400
Labour Hours per Unit	1.2	2	3.5
Savings per Labour hour (₹)	250	-	114.29
Rank	I	-	II

Note: As the internal cost of making the control panel exceeds the external purchase price of buying, it would be beneficial to outsource their production entirely.

Allocate Labour Efficiently

Make Voice Modules first:

Labour needed per unit = 1.2 hours

To make all 4,000 units: 4,000 × 1.2 = 4,800 hours (available 4,000 hours)

Max units company can make = 4,000 ÷ 1.2 = 3,333 units

Component	Make In-House	Outsource
Voice Module	3,333 units	667 units
Control Panel	0 units	4,000 units
Power Adapter	0 units	4,000 units

(b) Accounting treatment of idle time wages & overtime wages in cost accounts:
Normal idle time is treated as a part of the cost of production. Thus, in the case of direct workers, an allowance for normal idle time is built into the labour cost rates. In the case of indirect workers, normal idle time is spread over all the products or jobs through the process of absorption of factory overheads.

Under Cost Accounting, the overtime premium is treated as follows:

- If overtime is resorted to at the desire of the customer, then the overtime premium may be charged to the job directly.
- If overtime is required to cope with general production program or for meeting urgent orders, the overtime premium should be treated as overhead cost of particular department or cost center which works overtime.
- Overtime worked on account of abnormal conditions should be charged to costing Profit & Loss Account.
- If overtime is worked in a department due to the fault of another department the overtime premium should be charged to the latter department.

(c) **(i)** Variable overhead absorption rate

$$= \frac{\text{Difference in Total Overheads}}{\text{Difference in levels in terms of machine hours}}$$

$$= \frac{₹\ 3,47,625 - ₹\ 3,38,875}{15,500 \text{ hours} - 14,500 \text{ hours}} = ₹\ 8.75 \text{ per machine hour.}$$

(ii) Calculation of Total fixed overheads:

	(₹)
Total overheads at 14,500 hours	3,38,875
Less: Variable overheads (₹ 8.75 × 14,500)	(1,26,875)
Total fixed overheads	2,12,000

(iii) Calculation of Budgeted level of activity in machine hours:

Let budgeted level of activity = X

Then, $\frac{(₹\ 8.75X + ₹\ 2,12,000)}{X} = ₹\ 22$

8.75X + ₹ 2,12,000 = 22X

13.25X = 2,12,000

X =16,000

Thus, budgeted level of activity = 16,000 machine hours.

(iv) Calculation of Under / Over absorption of overheads:

	(₹)
Actual overheads	3,22,000
Absorbed overheads (14,970 hours × ₹ 22 per hour)	3,29,340
Over-absorption (3,29,340 – 3,22,000)	7,340

5. (a) (i) Statement Showing "Computation of Cost of Product P and Q" (Based on the Existing System of 'Single Overhead Recovery Rate')

	Product P	Product Q
Units	15,000	5,000
Direct Materials Cost (₹)	6,000	4,000
Direct Labour Cost (₹)	5,760 (960 hours x ₹ 6)	600 (100 hours x ₹ 6)
Overheads (₹) (Refer to W.N. 1)	50,400 (960 hours x ₹ 52.50)	5,250 (100 hours x ₹ 52.50)
Total Cost of Products (₹)	62,160	9,850
Cost *per unit* (₹)	4.144 (₹ 62,160 / 15,000 units)	1.97 (₹ 9,850 / 5,000 units)

(ii) Statement Showing Computation of Cost of Products P and Q (Using 'Activity Based Costing System')

	Product P	Product Q
Units	15,000	5,000
Direct Materials Cost (₹)	6,000	4,000
Direct Labour Cost (₹)	5,760	600
Receiving Cost (Refer to W.N. 4)	13,243 (48 x ₹ 275.89)	14,346 (52 x ₹ 275.89)
Setup Cost (Refer to W.N. 4)	24,141 (36 x ₹ 670.59)	16,094 (24 x 670.59)
Inspection Cost (Refer to W.N. 4)	4,482 (30 x ₹ 149.41)	1,494 (10 x ₹ 149.41)
Total Cost of Products (₹)	53,626	36,534
Cost *per unit* (₹)	3.58 (₹ 53,626 /15,000 units)	7.31 (₹ 36,534 /5,000 units)

(iii) Computation of Sales Value per Quarter 'Component K' (Using 'Activity Based Costing System')

3,000 units of 'Component K' to be delivered *per quarter*	₹
Initial Design Cost *per quarter* (₹ 60,000 / 8 quarters)	7,500
Direct Material Cost	12,000
Direct Labour Cost (300 hours x ₹ 6)	1,800
Receiving Cost (20 No. of Consignment x ₹ 275.89)	5,518
Setup Cost (6 Production Runs x ₹ 670.59)	4,024
Inspection Cost (24 Inspections x ₹ 149.41)	3,586
Total Cost	34,428
Add: Mark up (25%of cost)	8,607
Sales Value	43,035
Selling Price *per unit* 'K' (₹ 43,035 / 3,000 units)	14.35

Working Notes

1. Overhead Rate per Labour Hour

$$= \frac{\text{Total Overhead Incurred by the Company in First Half Year}}{\text{Total Direct Labour Hours Worked}}$$

$$= \frac{₹21,00,000}{40,000 \text{ hours}}$$

= ₹ 52.50 *per labour hour*

2. Statement Showing Apportionment of 'Technical Staff Salaries' Over 'Machine Maintenance', 'Setup' and 'Quality Inspection' in the Ratio 30:40:30

	Total Salaries (₹)	**Machine Maintenance (₹)**	**Setup (₹)**	**Quality Inspection (₹)**
Technical Staff Salaries	6,37,500	1,91,250	2,55,000	1,91,250

3. Statement Showing Apportionment of 'Machine Operation' and 'Machine Maintenance' Between 'Stores' and 'Production Activity (Setup)'

	Total Expenses (₹)	Stores / Receiving (₹)	Setup (₹)
Machine Operation (20:80)	10,12,500	2,02,500	8,10,000
Machine Maintenance (20:80) [₹ 1,91,250 + ₹ 1,87,500] (Refer to W.N. 2)	3,78,750	75,750	3,03,000
Wages and Salaries of Stores Staff	2,62,500	2,62,500	----
Component of Setup Cost (Refer to W.N. 2)	2,55,000	----	2,55,000
Total	19,08,750	5,40,750	13,68,000

4. Rate per 'Activity Cost Driver'

	Stores / Receiving (₹)	Setup (₹)	Quality Inspection (₹)
Total Overheads (₹) ...(A)	5,40,750	13,68,000	1,91,250
Units of Activities Carried out ...(B)	1,960	2,040	1,280
Rate per Activity Cost Driver (₹) ...{(A) / (B)}	275.89	670.59	149.41

(b) Working Notes:

1. Depreciation per annum: $= \frac{\text{Purchase price - Scrap value}}{\text{Estimated life}}$

$$= \frac{₹\ 4,00,000 - ₹\ 10,000}{5 \text{ years}} = ₹\ 78,000$$

2. Total distance travelled by mini-bus in 25 days:

= Length of the route (two -sides) × No. of trips per day × No. of days

= 60 km × 6 trips × 25 days = 9,000 km

3. Total Passenger-Km:

= Total distance travelled by mini-bus in 25 days × No. of seats

= 9,000 km × 20 seats = 1,80,000 passenger-km

Statement suggesting fare per passenger-km

	Cost per annum ₹	Cost per month ₹
Fixed expenses:		
Insurance	15,000	
Garage rent	9,000	
Road tax	3,000	
Administrative charges	5,000	
Depreciation	78,000	
Interest on loan	10,000	
	1,20,000	10,000
Running expenses:		
Repair and maintenance	15,000	1,250
Replacement of tyre-tube	3,600	300
Diesel and oil cost (9,000 km × ₹ 5)	-	45,000
Driver and conductor's salary	-	5,000
Total cost (per month)		61,550.00
Add: Profit 20% of total revenue or 25% of total cost		15,387.50
Total revenue		76,937.50

Rate per passenger-km ₹ 76,937.50/1,80,000 passenger km = 0.42743 i.e., = 0.43 i.e., 43 paise

6. (a) **Responsibility Centres:** To have a better control over the organisation, management delegates its responsibility and authority to various departments or persons. These departments or persons are known as responsibility centres and are held responsible for performance in terms of expenditure, revenue, profitability and return on investment.

Four types of responsibility centres are explained below:

- **Cost Centres:** The responsibility centre which is held accountable for incurrence of costs which are under its control. The performance of this responsibility centre is measured against pre-determined standards or budgets.

- **Revenue Centres**: The responsibility centres which are accountable for generation of revenue for the entity.
- **Profit Centres**: These are the responsibility centres which have both responsibility of generating revenue and incurrence of expenditures. Since, managers of profit centres are accountable for both costs as well as revenue, profitability is the basis for measurement of performance of these responsibility centres.
- **Investment Centres:** These are the responsibility centres which are not only responsible for profitability but also has the authority to make capital investment decisions. The performance of these responsibility centres are measured on the basis of Return on Investment (ROI) besides profit.

(b) **Defectives:** It signifies those units or portions of production which do not meet the quality standards. Defectives arise due to sub-standard materials, bad-supervision, bad-planning, poor workmanship, inadequate-equipment and careless inspection.

The defectives which can be re-made as per the quality standard by using additional materials are known as reworks. Reworks include repairs, reconditioning and refurbishing.

Defectives which cannot be brought up to the quality standards are known as rejects. The rejects may either be disposed-off or re-cycled for production process.

Treatment of Defectives:

Normal - An amount equal to the cost less realisable value on sale of defectives are charged to material cost of good production.

Abnormal - Material cost of abnormal defectives are not included in material cost but treated as loss after giving credit to the realisable value of such defectives. The material cost of abnormal loss is transferred to costing profit and loss account.

Reclamation of loss from defective units

In the case of articles that have been spoiled, it is necessary to take steps to reclaim as much of the loss as possible. For this purpose:

(i) All defective units should be sent to a place fixed for the purpose;

(ii) These should be dismantled;

(iii) Goods and serviceable parts should be separated and taken back into the stock;

(iv) Parts which can be made serviceable by further work should be separated and sent to the workshop for the purpose and taken into stock after the defects have been removed; and

(v) Parts which cannot be made serviceable should be collected in one place for being melted or sold off.

Printed forms should be used to record quantities for all purposes aforementioned.

(c) The crux of standard costing lies in variance analysis. Standard costing is the technique whereby standard costs are predetermined and subsequently compared with the recorded actual costs. It is a technique of cost ascertainment and cost control. It establishes predetermined estimates of the cost of products and services based on management's standards of efficient operation. It thus lays emphasis on "what the cost should be". These should be costs are when compared with the actual costs. The difference between standard cost and actual cost of actual output is defined as the variance.

The variance in other words in the difference between the actual performance and the standard performance. The calculations of variances are simple. A variance may be favourable or unfavourable. If the actual cost is less than the standard cost, the variance is favourable but if the actual cost is more than the standard cost, the variance will be unfavourable. They are easily expressible and do not provide detailed analysis to enable management of exercise control over them. It is not enough to know the figures of these variances from month to month. We in fact are required to trace their origin and causes of occurrence for taking necessary remedial steps to reduce / eliminate them.

A detailed probe into the variance particularly the controllable variances helps the management to ascertain:

(i) the amount of variance

(ii) the factors or causes of their occurrence

(iii) the responsibility to be laid on executives and departments and

(iv) corrective actions which should be taken to obviate or reduce the variances.

Mere calculation and analysis of variances is of no use. The success of variance analysis depends upon how quickly and effectively the corrective actions can be taken on the analysed variances. In fact variance gives information. The manager needs to act on the information provided for taking corrective action. Information

is the means and action taken on it is the end. In other words, the calculation of variances in standard costing is not an end in itself, but a means to an end.

OR

(d) **Research and Development Expenses:** The Terminology defines research expenses as "the expenses of searching for new or improved products, new application of materials, or new or improved methods." Similarly, development expenses are defined as "the expenses of the process which begins with the implementation of the decision to produce a new or improved product."

If research is conducted in the methods of production, the research expenses should be taken separately while computing cost of production; while the expenditure becomes a part of the administration overhead if research relates to administration. Similarly, *market research expenses* are charged to the selling and distribution overhead.

Development costs incurred in connection with a particular product should be charged directly to that product. Such expenses are usually treated as "deferred revenue expenses," and recovered as a cost per unit of the product when production is fully established.

General research expenses of a routine nature incurred on new or improved methods of manufacture or the improvement of the existing products should be charged to the general overhead.

Even in this case, if the amount involved is substantial it may be treated as a *deferred revenue expenditure*, and spread over the period during which the benefit would accrue. Expenses on fundamental research, not relating to any specific product, are treated as a part of the administration overhead. Where research proves a failure, the cost associated with it should be excluded from costs and charged to the costing Profit and Loss Account.