Mock Test Paper - Series II: April, 2024

Date of Paper: 16 April, 2024

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

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Suggested Answers/ Solution

PART I – Case Scenario based MCQs

1. i. A Revised Sale $= \frac{\text{Revised Fixed Cost + Expected Profit}}{\text{P / V Ratio}}$

= {₹115 + (20+10)} ÷ 45% **= ₹ 322.22 crores**

ii. D Revised Break – even Point = $\frac{\text{Fixed Cost}}{\text{P / V Ratio}}$

= ₹115 Crore ÷ 45% = ₹255.56 Crore (Refer working notes)

iii. D Revised Margin of Safety = Revised Sales – Revised Break–even Sales

= ₹ 322.22Crores – ₹ 255.56Crores = **₹ 66.66 Crores.**

iv. C ₹ 20 Crore & ₹30 Crore respectively (Refer working note)

v. A Total cost in last year = ₹230 Crore

Total cost in coming year = Variable Cost + Fixed Cost

Revised sales × 55% + 115 Crore

= ₹ 322.22 Crore × 55% + ₹ 115 Crore = ₹ 292.22 Crore

Working Note

Present Sales and Profit

Total Sales	=	Break – even Sales + Margin of Safety
	=	₹ 200 Crores + ₹ 50 Crores
	=	₹ 250 Crores
P/V Ratio	=	40%
Variable Cost	=	60% of Sales
	=	₹ 250 Crores × 60%
	=	₹ 150 Crores
Fixed Cost	=	Break – even Sales × P/V Ratio
	=	₹ 200 Crores × 40%
	=	₹ 80 Crores

Total Cost = ₹ 150 Crores + ₹ 80 Crores

= ₹ 230 Crores

Profit = Total Sales – Total Cost

= ₹ 250 Crores – ₹ 230 Crores

= ₹ 20 Cores

Revised Sales (₹ in Crores)

Present Fixed Cost	80.00
Increase in Fixed Cost	20.00
Interest at 15 *per cent* on Additional Capital (₹100Crores × 15%)	15.00
Total Revised Fixed Cost (in crore)	115.00
Assuming that the Present Selling Price is ₹100	
Revised Selling Price will be (8% Less)	92.00
New Variable Cost (Reduced from 60% to 55%) of Sales (₹ 92 × 55%)	50.60
Contribution (₹92.00 – ₹ 50.60)	41.40

New P / V Ratio $= \frac{₹\,41.40}{₹\,92.00} \times 100$

= 45%

2. i. D Variable Overhead Cost Variance = Standard Variable Overheads for Production – Actual Variable Overheads

= ₹ 44,800 – ₹ 55,680

= ₹ 10,880 (A)

ii. C Fixed Overhead Volume Variance = Absorbed Fixed Overheads – Budgeted Fixed Overheads

= ₹ 87,200 – ₹ 1,09,000

=**₹ 21,800 (A)**

iii. A Fixed Overhead Expenditure Variance = Budgeted Fixed Overheads – Actual Fixed Overheads

= ₹ 10.9 × 10,000 units – ₹ 1,30,520

= **₹ 21,520 (A)**

iv. B Calendar Variance = Possible Fixed Overheads – Budgeted Fixed Overheads

= ₹ 1,03,550 – ₹ 1,09,000

= ₹ 5,450 (A)

v. A Fixed Overhead Cost Variance = Absorbed Fixed Overheads – Actual Fixed Overheads

= ₹ 87,200 – ₹ 1,30,520

= ₹ 43,320 (A)

WORKING NOTE

Fixed Overheads = $\frac{\text{Budgeted Fixed Overheads}}{\text{Budgeted Output}}$ = 12,00,000÷1,20,000	₹ 10.00
Fixed Overheads element in *Semi-Variable* Overheads i.e. 60% of ₹ 1,80,000	₹ 1,08,000
Fixed Overheads = $\frac{\text{Budgeted Fixed Overheads}}{\text{Budgeted Output}}$ ₹ 1,08,000/120,000	₹ 0.90
Standard Rate of Absorption of Fixed Overheads *per unit* (₹ 10.00 + ₹ 0.90)	₹ 10.90
Fixed Overheads Absorbed on 8,000 units @ ₹10.90	₹ 87,200
Budgeted Variable Overheads *Add:* Variable element in Semi-Variable Overheads 40% of ₹ 1,80,000 Total Budgeted Variable Overheads Standard Variable Cost *per unit* = $\frac{\text{Budgeted Variable Overheads}}{\text{Budgeted Output}}$	₹ 6,00,000 ₹ 72,000 ₹ 6,72,000 ₹5.60
Standard Variable Overheads for 8,000 units @ ₹5.60	₹ 44,800
Budgeted Annual Fixed Overheads (₹ 12,00,000 + 60% of ₹ 1,80,000)	₹ 13,08,000
Possible Fixed Overheads = $\frac{\text{Budgeted Fixed Overheads}}{\text{Budgeted Days}}$ x Actual Days = 1,09,000/20 days ×19 days	₹ 1,03,550
Actual Fixed Overheads (₹ 1,19,000 + 60% of ₹ 19,200)	₹ 1,30,520
Actual Variable Overheads (₹ 48,000 + 40% of ₹ 19,200)	₹ 55,680

3. A (TT x 60) + [0.50 x (8-TT) x 60] = 420 TT* = 6 hours

Time saved = 8-6 = 2

* TT=Total Time Taken

4. C Ordering Cost = 4,00,000/320 = 1,250

Delivery Cost = 1,35,000/270 = 500

A = 1,250 x 100 + 500 x 70 = 1,60,000

B = 1,250 x 220 + 500 x 200 = 3,75,000

5. **B** Direct labour : ₹ 45,000

Direct expenses : ₹ 15,000

Direct materials consumed : ₹ 67,500

Prime Cost ₹ 1,27,500

6. **A** Abnormal gain units = 7600 - [8000 - 800] = 400 Abnormal gain = [40,000 - (800 x 5)]/ 7200 units x 400 units = 2,000

7. **B** Total cost = ₹ 5,25,000

Tonnes Km carried = 6,55,000

Unit Cost = ₹ 525000/655000 Km = ₹ 0.801

PART-II– Descriptive Questions

1. **(a)** **Process A Account**

Dr Cr.

	₹		₹
To Materials	40,000	By Transfer to Process B A/c	1,20,000
To Labour	40,000		
To Overheads	16,000		
	96,000		
To Profit (20% of transfer price, i.e., 25% of cost)	24,000		
	1,20,000		1,20,000

Process B Account

Dr Cr.

	₹		₹
To Transferred from Process A A/c	1,20,000	By Transfer to Finished Stock A/c	2,88,000
To Labour	56,000		
To Overhead	40,000		
	2,16,000		
To Profit (25% of transfer price i.e., 33.33% of cost)	72,000		
	2,88,000		2,88,000

Statement of Total Profit

	₹
Profit from Process A	24,000
Profit from Process B	72,000
Profit on Sales (₹ 4,00,000 – ₹ 2,88,000)	1,12,000
Total Profit	2,08,000

(b) (i) Calculation of Economic Order Quantity

$$EOQ = \sqrt{\frac{2 \times \text{Annual Demand} \times \text{Ordering Cost}}{\text{Carrying cost per unit per annum}}}$$

$$= \sqrt{\frac{2 \times 12,000 \text{ units} \times ₹1,200}{₹1,740 \times 0.12}} = 371 \text{ units (Approx)}$$

(ii) Evaluation of Profitability of Different Options of Order Quantity

(a) When EOQ is ordered

		(₹)
Purchase Cost	(12,000 units × ₹ 1,740)	2,08,80,000.00
Ordering Cost*	[(12,000 units ÷ 371 units) i.e. 33 × ₹ 1,200]	39,600.00
Carrying Cost**	(371 units × ₹ 1,740 × ½ × 12/100)	38,732.40
Total Cost		2,09,58,332.40

(b) When Quantity Discount of 5% is offered.

		(₹)
Purchase Cost	(12,000 units × ₹ 1,740 × 0.95)	1,98,36,000.00
Ordering Cost*	[(12,000 units ÷ 6,000 units) × ₹1,200]	2,400.00
Carrying Cost**	(6,000 units × ₹1,653 × ½ × 12/100)	5,95,080.00
Total Cost		2,04,33,480.00

Advise – The total cost of inventory is lower if quantity discount offer is accepted. Hence, the company is advised to accept the quantity discount.

$$* \text{ Ordering Cost} = \frac{\text{Annual Demand}}{\text{Order Quantity}} \times \text{Cost of placing an order}$$

$$** \text{ Carrying Cost} = \frac{\text{Cost per unit} \times \text{Quantity ordered} \times \text{Carrying Cost}}{2}$$

(c) Let T hours be the total time worked in hours by the skilled worker (machine-man Sam); ₹ 30/- is the rate per hour; standard time is 4 hours per unit and effective hourly earning rate is ₹ 37.50 then

Earning = Hours worked × Rate per hour

$$+\frac{\text{Time saved}}{\text{Time allowed}} \times \text{Time taken} \times \text{Rate per hour}$$

(Under Rowan incentive plan)

$$₹\ 37.5\ T = (T \times ₹\ 30) + \frac{(4 - T)}{4} \times T \times ₹\ 30$$

₹ 37.5 = ₹ 30 + (4 – T) × ₹ 7.5

Or ₹ 7.5 T = ₹ 22.5

Or T= 3 hours

Total earnings and effective hourly rate of skilled worker (machine man Sam) under Halsey Incentive Scheme (50%)

Total earnings = (Hours worked × Rate per hour) + (½ Time saved × Rate per hour)

(under 50% Halsey Incentive Scheme)

= (3 hours × ₹ 30) + (½ × 1 hour × ₹ 30)

$$\text{Effective hourly rate} = \frac{\text{Total earnings}}{\text{Hours taken}} = \frac{₹\ 105}{3\ \text{hours}} = ₹\ 35$$

2. (a) Computation of Machine Hour Rate

		Basis of apportionment	Total	Machines		
				P	Q	R
			(₹)	(₹)	(₹)	(₹)
(A)	**Standing Charges**					
	Insurance	Depreciation Basis	8,000	3,000	3,000	2,000
	Indirect Labour	Direct Labour	24,000	6,000	9,000	9,000
	Building Maintenance expenses	Floor Space	20,000	8,000	8,000	4,000
	Rent and Rates	Floor Space	1,20,000	48,000	48,000	24,000
	Salary of foreman	Equal	2,40,000	80,000	80,000	80,000
	Salary of attendant	Equal	60,000	20,000	20,000	20,000

	Total standing charges		4,72,000	1,65,000	1,68,000	1,39,000
	Hourly rate for standing charges			90.36	92.00	76.12
(B)	**Machine Expenses:**					
	Depreciation	Direct	20,000	7,500	7,500	5,000
	Spare parts	Final estimates	13,225	4,600	5,750	2,875
	Power	K.W. rating	40,000	15,000	10,000	15,000
	Consumable Stores	Direct	9,000	3,600	2,700	2,700
	Total Machine expenses		82,225	30,700	25,950	25,575
	Hourly Rate for Machine expenses			16.81	14.21	14.01
	Total (A + B)		5,54,225	1,95,700	1,93,950	1,64,575
	Machine Hour rate			107.17	106.22	90.13

Working Notes:

(i) Calculation of effective working hours:

No. of holidays 52 (Sundays) + 14 (other holidays) = 66

Saturday (52 – 2) = 50

No. of days (Work full time) = 365 – 66 – 50 = 249

	Hours
Full days work 249 × 8	= 1,992
Half days work 50 × 4	= 200
	2,192

	Hours
Effective capacity 85% of 2,192	1,863 (Rounded off)
Less: Normal loss of time (Breakdown) 2%	37 (Rounded off)
Effective running hour	1,826

(ii) Amount of spare parts is calculated as under:

	P	Q	R
	₹	₹	₹
Preliminary estimates	4,000	4,000	2,000

Add: Increase in price @ 15%	600	600	300
	4,600	4,600	2,300
Add: Increase in consumption @ 25%	–	1,150	575
Estimated cost	4,600	5,750	2,875

(iii) Amount of Indirect Labour is calculated as under:

	₹
Preliminary estimates	20,000
Add: Increase in wages @ 20%	4,000
	24,000

(iv) Amount of Consumables Stores is calculated as under:

	₹
Preliminary estimates	10,000
Less: Decrease in consumption @ 10%	1,000
	9,000

(v) Interest on capital outlay is a financial matter and, therefore it has been excluded from the cost accounts.

(b) Economic batch quantity in Batch Costing*:* In batch costing the most important problem is the determination of 'Economic Batch Quantity'. The determination of economic batch quantity involves two types of costs viz, (i) set up cost and (ii) carrying cost. With the increase in the batch size, there is an increase in the carrying cost but the set up cost per unit of product is reduced. This situation is reversed when the batch size is reduced. Thus there is one particular batch size for which both set up and carrying costs are minimum. This size of a batch is known as economic or optimum batch quantity.

Economic batch quantity can be determined with the help of table, graph or mathematical formula. The mathematical formula usually used for its determination is as follows:

$$E.B.Q = \sqrt{\frac{2DS}{C}}$$

Where, D= Annual demand for the product

S = Setting up cost per batch

C = Carrying cost per unit of production per annum

3. (a) (a) **Flexible Budget for different levels**

	₹	₹	₹	₹	₹
No. of Students	60	90	120	150	180
VARIABLE COST					

Breakfast	3000	4500	6000	7500	9000
Lunch	6000	9000	12000	15000	18000
Tea	600	900	1200	1500	1800
Entrance fee	1200	1800	2400	3000	3600
Sub-total (A)	10800	16200	21600	27000	32400
Variable cost/unit	180	180	180	180	180
SEMI-VARIABLE COST					
Bus rent	13000	13000	19500	19500	26000
Special permit fee	1000	1000	1500	1500	2000
Allowance for teachers	2000	2000	3000	3000	4000
Sub-total (B)	16000	16000	24000	24000	32000
FIXED COST					
Block entrance fee	2500	2500	2500	2500	2500
Prize to students	500	500	500	500	500
Sub total (C)	3000	3000	3000	3000	3000
Total cost (A + B + C)	29,800	35,200	48,600	54,000	67,400

(b) Cost per student 496.67 391.11 405.00 360.00 374.44

(c) Break-even level

	₹
Collection per students	400
Less Variable Cost	180
Contribution	220

Since semi-fixed costs relate to a block of 50 students, the fixed and semi-variable cost for three level will be:

Level of Student	51–100	101–150	151-200
Fixed + Semi–variable cost (₹)	19,000	27,000	35,000
Contribution per unit (₹)	220	220	220
Break Even level of students	86	123	159

(b) (i) Statement of cost allocation to each product from each activity

	Product			
	A (₹)	**B (₹)**	**C (₹)**	**Total (₹)**
Power (Refer to working note)	10,00,000	20,00,000	15,00,000	45,00,000

	(10,000 kWh × ₹ 100)	(20,000 kWh × ₹ 100)	(15,000 kWh × ₹ 100)	
Quality Inspections (Refer to working note)	31,50,000 (3,500 inspections × ₹ 900)	22,50,000 (2,500 inspections × ₹ 900)	27,00,000 (3,000 inspections × ₹ 900)	81,00,000

Working Note:

Rate per unit of cost driver:

Power : (₹ 60,00,000 ÷ 60,000 kWh) = ₹100/kWh

Quality Inspection: (₹ 90,00,000 ÷ 10,000 inspections) = ₹900 per inspection

(ii) Calculation of cost of unused capacity for each activity:

	(₹)
Power (₹60,00,000 – ₹45,00,000)	15,00,000
Quality Inspections (₹90,00,000 – ₹81,00,000)	9,00,000
Total cost of unused capacity	24,00,000

4. (a) Job Cost Sheet for the period…..

			₹
Direct materials			2,13,000
Direct wages:			
Machine shop		63,000	
Assembly shop		48,000	1,11,000
	Prime Cost		3,24,000
Works overhead:			
Machine shop		88,200	
Assembly shop		51,800	1,40,000
	Work Cost		4,64,000
Administration overhead			92,800
	Cost of Production		5,56,800
Selling overhead			81,000
Distribution overhead			62,100
	Total Cost		6,99,900

Schedule of Overhead Rate

(i) Works Overhead: Hourly rate = (Overhead amount ÷ Hours)

Machine shop = (88,200 ÷ 12,000) = ₹ 7.35 per hour

Assembly shop = (51,800 ÷ 10,000) = ₹ 5.18 per hour

(ii) Administrative Overhead as a % of works cost

$= \frac{92,800}{4,64,000} \times 100 = 20\%$

(iii) Selling and distribution overhead as % of works cost

$= \frac{81,000 + 62,100}{4,64,000} \times 100 = 30.84\%$

Labour hour rates are calculated as under:

Machine shop = ₹ 63,000 ÷ 12,000 hrs. = ₹ 5.25

Assembly shop = ₹ 48,000÷10,000 hrs. = ₹ 4.80

(b) Cost Estimate for Job

Direct Materials	₹	₹
(i) 25 kg @ ₹ 17.20 per kg	430	
(ii) 15 kg @ ₹ 21 per kg	315	745.00
Direct Labour		
Machine shop (30 hrs. @ ₹ 5.25)	157.50	
Assembly shop (42 hrs. @ ₹ 4.80)	201.60	359.10
Prime Cost		1104.10
Works Overhead		
Machine shop (30 hours @ ₹ 7.35)	220.50	
Assembly shop (42 hours @ ₹ 5.18)	217.56	438.06
Works Cost		1542.16
Administration overhead (20% of works cost)		308.43
Cost of Production		1850.59
Selling and distribution cost (30.84% of works cost)		475.60
Total Estimated Cost		2326.19

(b) Detection of slow moving and non-moving item of stores:

The existence of slow moving and non-moving item of stores can be detected in the following ways.

(i) By preparing and *perusing periodic reports* showing the status of different items or stores.

(ii) By calculating the *inventory turnover period* of various items in terms of number of days/ months of consumption.

(iii) By computing *inventory turnover ratio* periodically, relating to the issues as a percentage of average stock held.

(iv) By implementing the use of a well designed information system.

Necessary steps to reduce stock of slow moving and non-moving item of stores:

(i) Proper procedure and guidelines should be laid down for the disposal of non-moving items, before they further deteriorates in value.

(ii) Diversify production to use up such materials.

(iii) Use these materials as substitute, in place of other materials.

(c) When the Cost and Financial Accounts are integrated - there is no need to have a separate reconciliation statement between the two sets of accounts. Integration means that the same set of accounts fulfil the requirement of both i.e., Cost and Financial Accounts.

5. (a) Cost sheet for the year ended 31st March, 2023.

Units produced - 14,000 units

Units sold - 14,153 units

Particulars	**Amount (₹)**
Raw materials purchased	43,50,000
Add: Freight Inward	1,20,000
Add: Opening value of raw materials	2,28,000
Less: Closing value of raw materials	(3,05,000)
	43,93,000
Less: Sale of scrap of material	(7,000)
Materials consumed	43,86,000
Direct Wages (12,56,000 + 1,50,000)	14,06,000
Prime Cost	57,92,000
Factory overheads (20% of Prime Cost)	11,58,400
Add: Opening value of W-I-P	1,92,500
Less: Closing value of W-I-P	(1,40,700)
Factory Cost	70,02,200
Add: Administrative overheads	1,73,000
Cost of Production	71,75,200
Add: Value of opening finished stock	6,08,500
Less: Value of closing finished stock [₹ 500(71,75,200/14,350) × 767] (1,320 + 14,350 – 14,903 = 767 units)	(3,83,500)
Cost of Goods Sold	74,00,200
Distribution expenses (₹16 × 14,903 units)	2,38,448

Cost of Sales	76,38,648
Profit (Balancing figure)	9,90,189
Sales (₹ 579 × 14,903 units)	86,28,837

(b) Workings:

Total occupancy = Occupancy in normal season + Occupancy in off-season

= (20 rooms × 80% × 8 months × 30 days) + (20 rooms × 50% × 4 months × 30 days)

= 3,840 + 1,200 = 5,040 room-days

Total Cost = Variable cost + Fixed cost

= (₹ 500 × 5,040 room-days) + ₹ 53,25,000

= ₹ 25,20,000 + ₹ 53,25,000

= 78,45,000

(a) Calculation of tariff rate per room

Tariff per room per day = (Total cost + 25% Margin on total cost) ÷ Total occupancy

= (₹ 78,45,000 + 19,61,250) ÷ 5,040 = ₹ 1,945.68

(b) Calculation of break-even occupancy

Contribution per day = Tariff – Variable cost

= ₹ 1,945.68 – 500 = ₹ 1445.68

Break-even occupancy = ₹ 53,25,000 ÷ 1445.68

= 3683

Occupancy in normal season = Break-even occupancy – Occupancy in off-season

= 3683 – (20 rooms × 50% × 4 months × 30 days)

= 3683 – 1200 = 2483 room-days

In Percentage = 2483 ÷ 4800 = 51.73%

6. (a) When the cost and financial accounts are kept separately, It is imperative that these should be reconciled, otherwise the cost accounts would not be reliable. The reconciliation of two set of accounts can be made, if both the sets contain sufficient detail as would enable the causes of differences to be located. It is therefore, important that in the financial accounts, the expenses should be analysed in the same way as in cost accounts. It is important to know the causes which generally give rise to differences in the costs & financial accounts. These are:

(i) Items included in financial accounts but not in cost accounts

- Income-tax
- Transfer to reserve

- Dividends paid
- Goodwill / preliminary expenses written off
- Pure financial items
- Interest, dividends
- Losses on sale of investments
- Expenses of Co's share transfer office
- Damages & penalties

(ii) Items included in cost accounts but not in financial accounts

- Opportunity cost of capital
- Notional rent

(iii) Under / Over absorption of expenses in cost accounts

(iv) Different bases of inventory valuation

Motivation for reconciliation is:

- To ensure reliability of cost data
- To ensure ascertainment of correct product cost
- To ensure correct decision making by the management based on Cost & Financial data
- To report fruitful financial / cost data.

(b) The essential features, which a good Cost Accounting System should possess, are as follows:

(a) Informative and Simple: Cost Accounting System should be tailor-made, practical, simple and capable of meeting the requirements of a business concern. The system of costing should not sacrifice the utility by introducing meticulous and unnecessary details.

(b) Accuracy: The data to be used by the Cost Accounting System should be accurate; otherwise it may distort the output of the system and a wrong decision may be taken.

(c) Support from Management and subordinates: Necessary cooperation and participation of executives from various departments of the concern is essential for developing a good system of Cost Accounting.

(d) Cost-Benefit: The Cost of installing and operating the system should justify the results.

(e) Procedure: A carefully phased programme should be prepared by using network analysis for the introduction of the system.

(f) Trust: Management should have faith in the Costing System and should also provide a helping hand for its development and success.

(c) The following steps are useful for minimizing labour turnover:

(a) *Exit interview*: An interview to be arranged with each outgoing employee to ascertain the reasons of his leaving the organization.

(b) *Job analysis and evaluation*: to ascertain the requirement of each job.

(c) Organization should make use of a scientific system of recruitment, placement and promotion for employees.

(d) Organization should create healthy atmosphere, providing education, medical and housing facilities for workers.

(e) Committee for settling workers grievances.

OR

(c) CVP Analysis:-Assumptions

(i) Changes in the levels of revenues and costs arise only because of changes in the number of products (or service) units produced and sold.

(ii) Total cost can be separated into two components: Fixed and variable

(iii) Graphically, the behaviour of total revenues and total cost are linear in relation to output level within a relevant range.

(iv) Selling price, variable cost per unit and total fixed costs are known and constant.

(v) All revenues and costs can be added, sub traded and compared without taking into account the time value of money.