Mock Test Paper - Series I: March, 2024

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Test Series: March 2024

INTERMEDIATE: GROUP - II

PAPER - 4: COST AND MANAGEMENT ACCOUNTING

Suggested Answers/ Solution

PART I - Case Scenario based MCQs

1. i. D

Inflow into process	Litres	Outflow from process	Litres
Opening WIP	500	Transferred to finished goods	3,400
Quantity introduced (Balancing figure)	3,800	Total loss	800
		Closing WIP	100
	4,300		4,300

ii. A

Total loss	800 litres
Normal loss (10% of fresh input i.e. 3,800)	380 litres
Abnormal loss	420 litres

iii. B

Calculation of Equivalent production units

					Equiv	alent	Produc	tion	
Input Details	Units	Output Particulars	Units	Mat	erial	Lal	bour	Over	heads
		i di tiodidi s		%	Units	%	Units	%	Units
Opening WIP	500	From Opening WIP	500	1	1	20	100	40	200
Fresh inputs	3,800	From fresh units	2900	100	2900	100	2900	100	2900
		Normal loss	380	-		-		-	
		Closing WIP	100	100	100	20	20	10	10
		Abnormal loss	420	100	420	100	420	100	420
	4,300		4,300		3,420		3,440		3,530

Value of raw materials introduced during the month

	Equivalent units	Cost per EU (₹)	Total cost (₹)
Total value of raw material	3420	300	10,26,000
Add: Scrap value of normal loss	380	20	7,600
Value of raw material introduced			10,33,600

iv. A

Value of labour and overhead in closing Work in process

Cost elements	Equivalent units	Cost per EU (₹)	Total cost (₹)
Labour	20	200	4,000
Overheads	10	160	1,600

v. C

Value of output transferred to finished goods

Output transferred (Units) × Equivalent cost per unit 3,400 Litres × ₹660 = ₹22,44,000

2. i. D

- ii. C Please refer cost sheet below for cost of production
 Cost of production per manshift =
 Cost of production ÷ Total manshift
 ₹ 7,87,28,000 ÷ 46,800 = ₹1,682.22
- iii. A Car hire charges including GST @5%, please refer the cost sheet
- iv. B Selling and distribution cost includes the following:

Maintenance cost for weighing bridge	12,000
AMC cost of CCTV installed at weigh bridge	8,000
TA/ DA & hotel bill of sales manager	36,000
	56,000

For Cost of Sale please refer the cost sheet

v. A Manshift = 1,800 employees × 26 days = 46,800 manshiftsComputation of earnings per manshift (EMS):

$$EMS = \frac{Total\ employee\ benefits\ paid}{Manshift}$$

$$= \frac{₹\ 7,04,20,000}{46,800} = ₹\ 1504.70$$
Computation of Output per manshift (OMS):
$$OMS = \frac{Total\ Output/\ Production}{Manshift}$$

$$= \frac{2,34,000\ Tonne}{46,800} = 5\ tonnes$$

Workings

Cost Sheet of M Ltd. for the last month

Particulars	Amount (₹)	Amount (₹)
Materials consumed		50,00,000
Wages & Salary	6,40,00,000	
Gratuity & leave encashment	64,20,000	7,04,20,000
Power cost (13,000 kwh × ₹8)	1,04,000	
Diesel cost (2,000 ltr × ₹93)	1,86,000	2,90,000
HEMM hiring charges		30,00,000
Prime Cost		7,87,10,000
AMC cost of CCTV installed at factory premises		18,000
Cost of Production/ Cost of Goods Sold		7,87,28,000
Hiring charges of cars	66,000	
Reimbursement of diesel cost	22,000	
	88,000	
Add: GST @5% on RCM basis	4,400	92,400
Maintenance cost for weighing bridge	12,000	
AMC cost of CCTV installed at weigh bridge	8,000	20,000
TA/ DA & hotel bill of sales manager		36,000
Cost of Sales		7,88,76,400

3. D Labour rate variance = Standard time for actual production (SR- AR) 7,500 (A) = $(30,000 \times 30 \text{ minutes}/60 \text{ minutes}) \times (50\text{-AR})$ AR = (7,50,000 + 7,500)/15,000 = ₹50.50 per hour

Actual wages per unit = 50.50/2 = ₹25.25

4. B Variable overhead for each % of level of activity

$$=\frac{40,00,000-30,000,000}{75-50}=40,000$$

Fixed cost = $30,00,000 - (40,000 \times 50) = 10,00,000$

Total overheads for 60% level of activity

$$= 10,00,000 + (40,000 \times 60) = 34,00,000$$

- 5. C
- **6. B** Actual Overhead (Actual machine hours × machine hour rate) $5,20,000 (17040 \times 30) = 8,800$ under absorbed
- **7.** A Optimum batch size or Economic Batch Quantity (EBQ):

EBQ =
$$\sqrt{\frac{2DS}{C}} = \sqrt{\frac{2 \times 80,000 \times 3,500}{12}} = 6,832 \text{ units.}$$

Number of Optimum runs = $80,000 \div 6,832 = 11.70$ or 12 run

PART-II

1. (a) (i) Production Budget (in units) for the year ended 31st March 2025

	Product X	Product Y
Budgeted sales (units)	28,000	13,000
Add: Increase in closing stock	320	160
No. good units to be produced	28,320	13,160
Post production rejection rate	4%	6%
No. of units to be produced	29,500	14,000
	$\left(\frac{28,320}{0.96}\right)$	$\left(\frac{13,160}{0.94}\right)$

(ii) Calculation of Economic Order Quantity for Material Z

$$EOQ = \sqrt{\frac{2 \times 2,52,310 \times 15,600}{72 \times 11\%}} = \sqrt{\frac{5,04,620 \times 15,600}{72 \times 11\%}} = 31,526.95 \text{ kg}.$$

(b) Purchase budget (in kgs and value) for Material Z

	Product X	Product Y
No. of units to be produced	29,500	14,000
Usage of Material Z per unit of production	5 kg.	6 kg.
Material needed for production	1,47,500 kg.	84,000 kg.

Materials to be purchased	$ \frac{1,63,889 \text{ kg.}}{\left(\frac{1,47,500}{0.90}\right)} $		
Total quantity to be purchased	2,52,310 kg.		
Rate per kg. of Material Z	₹72		
Total purchase price	₹1,81,66,320		

- (c) Since, the maximum number of orders per year cannot be more than 40 orders and the maximum quantity per order that can be purchased is 4,000 kg. Hence, the total quantity of Material Z that can be available for production:
 - $= 4,000 \text{ kg.} \times 40 \text{ orders} = 1,60,000 \text{ kg.}$

	Product X	Product Y
Material needed for	1,03,929 kg.	56,071 kg.
production to maintain the same production mix	$\left(1,60,000 \times \frac{1,63,889}{2,52,310}\right)$	$\left(1,60,000 \times \frac{88,421}{2,52,310}\right)$
Less: Process wastage	10,393 kg.	2,804 kg.
Net Material available for production	93,536 kg.	53,267 kg.
Units to be produced	18,707 units	8,878 units
	$\left(\frac{93,536\mathrm{kg.}}{5\mathrm{kg.}}\right)$	$\left(\frac{53,267\mathrm{kg.}}{6\mathrm{kg.}}\right)$

2. (a) (i) Calculation of Absolute Ton-km for the next month:

Journey	Distance in km	Weight- Up (in MT)	Ton-km	Weight- Down (in MT)	Ton-km	Total
	(a)	(b)	(c)=(a)×(b)	(d)	(e)= (a)×(d)	(c)+(e)
Delhi to Kochi	2,700	14	37,800	6	16,200	54,000
Delhi to Guwahati	1,890	12	22,680	0	0	22,680
Delhi to Vijayawada	1,840	15	27,600	0	0	27,600
Delhi to Varanasi	815	10	8,150	0	0	8,150
Delhi to Asansol	1,280	12	15,360	4	5,120	20,480
Delhi to Chennai	2,185	10	21,850	8	17,480	39,330
Total	10,710	73	1,33,440	18	38,800	1,72,240

Total Ton-Km = 1,72,240 ton-km

(ii) Calculation of cost per ton-km:

Particulars	Amount (₹)	Amount (₹)
A. Running cost:		
- Diesel Cost {₹19.20 × (10,710 × 2)}	4,11,264.00	
- Engine oil cost	6,920.31	
$\left(\frac{\text{₹4,200}}{13,000\text{km}} \times 21,420\text{km}\right)$		
- Cost of loading of goods {₹180 × (73+18)}	16,380.00	
- Depreciation {(30,00,000/720,000×21,420 km)×4}	3,57,000.00	7,91,564.31
B. Repairs & Maintenance Cost (36,000/10,000×21,420)		77,112.00
C. Standing Charges		
- Drivers' salary (₹24,000 × 4 trucks)	96,000.00	
- Cleaners' salary (₹15,000 × 4 trucks)	60,000.00	
- Supervision and other general exp.	14,000.00	1,70,000.00
Total Cost (A + B + C)		10,38,676.31
Total ton-km		1,72,240
Cost per ton-km		6.03

(b) Calculation of cost per unit:

Particulars	Units	(₹)
Listed Price of Materials	5,000	5,00,000
Less: Trade discount @ 10% on invoice price		(50,000)
		4,50,000
Add: GST @18% of ₹ 4,50,000		81,000
		5,31,000
Add: Toll Tax		1,800
Freight and Insurance		36,000
Commission and Brokerage Paid		10,000

Add: Cost of returnable containe Amount deposited	rs: ₹ 30,000		
Less: Amount refunded	₹ 26,000		4,000
			5,82,800
Add: Other Expenses @ 2% of $\left(\frac{\stackrel{?}{\scriptstyle 5,82,800}}{98} \times 2\right)$	Total Cost		11,894
Total cost of material			5,94,694
Less: Shortage material due reasons @ 5%	to normal	250	-
Total cost of material of good un	its	4,750	5,94,694
Cost per unit (₹ 5,94,694/4,750	units)		125.20

Note:

- 1. GST is payable on net price i.e., listed price less discount.
- 2. GST paid on purchase is added with cost as ITC on GST cannot be claimed
- 3. Cash discount is treated as interest and finance item; hence it is ignored.
- 4. Demurrage is penalty imposed by the transporter for delay in uploading or off-loading of materials. It is an abnormal cost and not included.
- 5. Shortage due to normal reasons should not be deducted from cost to ascertain total cost of good units.

3. (a) The important ledgers to be maintained under non-integrated accounting system in the Cost Accounting are the followings:

- (a) Cost Ledger This is the principle ledger of the cost department in which impersonal accounts are recorded. This ledger is made selfbalancing by maintaining therein a Control Account for each subsidiary ledger.
- (b) Stores Ledger It contains an account for each item of stores. The entries in each account maintained in this ledger are made from the invoice, goods received note, material requisitions, material received note etc. Accounts in respect of each item of stores show receipt, issue and balance in physical as well as in monetary terms.
- (c) Work-in-Process Ledger This ledger is also known as job ledger, it contains accounts of unfinished jobs and processes. All material costs, wages and overheads for each job in process are posted to the respective job accounts in this ledger. The balance in a job account represents total balance of job/work-in-process, as shown by the job account.

- (d) Finished Goods Ledger It contains an account for each item of finished product manufactured or the completed job. If the finished product is transferred to stock, a credit entry is made in the workin-process ledger and a corresponding debit entry is made in this ledger.
- (b) (i) Computation of wages of each worker under guaranteed hourly rate basis

Worker	Actual hours worked (Hours)	Hourly wage rate (₹)	Wages (₹)
I	380	40	15,200
II	100	50	5,000
Ш	540	60	32,400

(ii) Computation of Wages of each worker under piece work earning basis

Product	Piece rate per unit	Worker-I		Woi	ker-II	Wor	ker-III
	(₹)	Units	Wages (₹)	Units	Wages (₹)	Units	Wages (₹)
X	15	210	3,150	-	-	600	9,000
Υ	20	360	7,200	-	-	1,350	27,000
Z	30	460	13,800	250	7,500	-	-
Total			24,150		7,500		36,000

Since each worker's earnings are more than 50% of basic pay. Therefore, worker-I, II and III will be paid the wages as computed i.e. ₹24,150, ₹7,500 and ₹36,000 respectively.

Working Notes:

1. Piece rate per unit

Product	Standard time per unit in minute	Piece rate each minute (₹)	Piece rate per unit (₹)
Х	15	1	15
Υ	20	1	20
Z	30	1	30

2. Time allowed to each worker

Worker	Product-X	Product-Y	Product-Z	Total Time (Hours)
1	210 units ×	360 units ×	460 units × 30	24,150/60
	15	20	= 13,800	= 402.50
	= 3,150	= 7,200		

П	-	-	250 units × 30	7,500/60
			= 7,500	= 125
Ш	600 units ×	1, 350 units ×	-	36,000/60
	15	20		= 600
	= 9,000	= 27,000		

(iii) Computation of wages of each worker under Premium bonus basis (where each worker receives bonus based on Rowan Scheme)

Worker	Time Allowed (Hr.)	Time Taken (Hr.)	Time saved (Hr.)	Wage Rate per hour (₹)	Earnings (₹)	Bonus (₹)*	Total Earning (₹)
I	402.5	380	22.5	40	15,200	850	16,050
II	125	100	25	50	5,000	1,000	6,000
III	600	540	60	60	32,400	3,240	35,640

$$\begin{array}{cc} \star & \frac{\mathsf{Time}\,\mathsf{Taken}}{\mathsf{Time}\,\mathsf{Allowed}} {\times} \mathsf{Time}\,\mathsf{Saved} {\times} \mathsf{Wage}\,\mathsf{Rate} \end{array}$$

Worker-I =
$$\frac{380}{402.5}$$
 × 22.5 × 40 = 850 ; Worker-II = $\frac{100}{125}$ × 25 × 50 = 1,000
Worker-III = $\frac{540}{600}$ × 60 × 60 = 3,240

. (a) (i) Statement of Profit under Absorption Costing

Particulars	April	May	June
Faiticulais	(₹)	(₹)	(₹)
Sales (units)	4,200	4,500	5,200
Selling price per unit	2,050	2,050	2,050
Sales value (A)	86,10,000	92,25,000	1,06,60,000
Cost of Goods Sold:			
Opening Stock @ ₹1,480	0	5,92,000	4,44,000
Production cost @ ₹1,480	68,08,000	65,12,000	81,40,000
Closing Stock @ ₹1,480	(5,92,000)	(4,44,000)	(8,88,000)
Under/ (Over) absorption	40,000	60,000	(50,000)
Add: Fixed Selling Overheads	95,000	95,000	95,000
Cost of Sales (B)	63,51,000	68,15,000	77,41,000
Profit $(A - B)$	22,59,000	24,10,000	29,19,000

Workings:

1. Calculation of full production cost

	(₹)
Direct Materials (4 kg. × ₹ 120)	480
Direct labour (6 hours × ₹ 60)	360
Variable production Overhead (150% of ₹ 360)	540
Total Variable cost	1,380
Fixed production overhead $\left(\frac{\text{₹60,00,000}}{\text{60,000 units}}\right)$	100
	1,480

2. Calculation of Opening and Closing stock

	April	May	June
Opening Stock	0	400	300
Add: Production	4,600	4,400	5,500
Less: Sales	4,200	4,500	5,200
Closing Stock	400	300	600

3. Calculation of Under/Over absorption of fixed production overhead

	April (₹)	May (₹)	June (₹)
Actual Overhead	5,00,000	5,00,000	5,00,000
Overhead absorbed	4,60,000	4,40,000	5,50,000
	(4,600 units × ₹100)	(4,400 units × ₹100)	(5,500 units × ₹100)
Under/(Over) absorption	40,000	60,000	(50,000)

(ii) Statement of Profit under Marginal Costing

Particulars	April (₹)	May (₹)	June (₹)
Sales (units)	4,200	4,500	5,200
Selling price per unit	2,050	2,050	2,050
Sales value	86,10,000	92,25,000	1,06,60,000
Less: Variable production cost @ ₹1,380	57,96,000	62,10,000	71,76,000
Contribution	28,14,000	30,15,000	34,84,000
Less: Fixed Production Overheads	5,00,000	5,00,000	5,00,000

Less:	Fixed	Selling	95,000	95,000	95,000
Overhe	ads				
Profit			22,19,000	24,20,000	28,89,000

(iii) Reconciliation of profit under Absorption costing to Marginal Costing

Particulars	April (₹)	May (₹)	June (₹)
Profit under	22,59,000	24,10,000	29,19,000
Absorption Costing			
Add: Opening Stock	0	40,000	30,000
		(400 × ₹100)	(300 × ₹100)
Less: Closing Stock	40,000	30,000	60,000
	(400 × ₹100)	(300 × ₹100)	(600 × ₹100)
Profit under Marginal Costing	22,19,000	24,20,000	28,89,000

Break-even Point
$$=\frac{TotalFixedCost}{Contributionperunit}$$

$$= \frac{36,00,000}{130} = 27,692.31 \text{ or } 27,693 \text{ units}$$

Break-even Sales =
$$\frac{\text{TotalFixedCost}}{\text{P/VBatio}} = \frac{\$36,00,000}{21.67\%} = \$1,66,12,829$$

Calculation of Profit/ (loss):

= ₹ 14,600 (A) (b) Profit Statement using Activity based costing (ABC) method:

	Particulars		Product		
		A	В	С	
A.	Sales Quantity	1,00,000	80,000	60,000	
B.	Selling price per unit (₹)	90	180	140	
C.	Sales Value (₹) [A×B]	90,00,000	1,44,00,000	84,00,000	3,18,00,000
D.	Direct cost per unit (₹)	50	90	95	
E.	Direct Cost (₹) [A×D]	50,00,000	72,00,000	57,00,000	1,79,00,000
F.	Overheads: (Refer working note-3)				

= ₹ 3,45,600 - ₹ 3,60,200

(i)	Machining services (₹)	21,00,000	22,40,000	21,00,000	64,40,000
(ii)	Assembly services (₹)	24,00,000	12,80,000	7,20,000	44,00,000
(iii)	Set-up costs (₹)	4,50,000	3,00,000	1,50,000	9,00,000
(iv)	Order processing (₹)	2,20,000	2,40,000	2,60,000	7,20,000
(v)	Purchasing (₹)	1,50,000	1,75,000	75,000	4,00,000
G.	Total Cost (₹) [E+F]	1,03,20,000	1,14,35,000	90,05,000	3,07,60,000
H.	Profit (₹) (C-G)	(13,20,000)	29,65,000	(6,05,000)	10,40,000

Working Notes:

1.

			Products			
		Α	В	С	Total	
A.	Production (units)	1,00,000	80,000	60,000		
B.	Machine hours per unit	3	4	5		
C.	Total Machine hours [A×B]	3,00,000	3,20,000	3,00,000	9,20,000	
D.	Rate per hour (₹)	8	8	8		
E.	Machine Dept. cost [C×D]	24,00,000	25,60,000	24,00,000	73,60,000	
F.	Labour hours per unit	6	4	3		
G.	Total labour hours [A×F]	6,00,000	3,20,000	1,80,000	11,00,000	
H.	Rate per hour (₹)	5	5	5		
I.	Assembly Dept. cost [G×H]	30,00,000	16,00,000	9,00,000	55,00,000	

Machine hour rate =
$$\frac{₹73,60,000}{9,20,000 \text{ hours}} = ₹8$$

Labour hour rate =
$$\frac{₹55,00,000}{11,00,000 \text{ hours}}$$
 = ₹5

2. Calculation of cost driver rate

Cost Pool	Amount (₹)	Cost Driver	Quantity	Driver rate (₹)
Machining services	64,40,000	Machine hours	9,20,000 hours	7.00
Assembly services	44,00,000	Direct labour hours	11,00,000 hours	4.00
Set-up costs	9,00,000	Machine set-ups	9,000 set-ups	100.00
Order processing	7,20,000	Customer orders	7,200 orders	100.00
Purchasing	4,00,000	Purchase orders	800 orders	500.00

3. Calculation of activity-wise cost

			Products			
		Α	В	С	Total	
A.	Machining hours (Refer Working note-1)	3,00,000	3,20,000	3,00,000	9,20,000	
B.	Machine hour rate (₹) (Refer Working note-2)	7	7	7		
C.	Machining services cost (₹) [A×B]	21,00,000	22,40,000	21,00,000	64,40,000	
D.	Labour hours (Refer Working note-1)	6,00,000	3,20,000	1,80,000	11,00,000	
E.	Labour hour rate (₹) (Refer Working note-2)	4	4	4		
F.	Assembly services cost (₹) [D×E]	24,00,000	12,80,000	7,20,000	44,00,000	
G.	Machine set-ups	4,500	3,000	1,500	9,000	
H.	Rate per set-up (₹) (Refer Working note-2)	100	100	100		
I.	Set-up cost (₹) [G×H]	4,50,000	3,00,000	1,50,000	9,00,000	
J.	Customer orders	2,200	2,400	2,600	7,200	

K.	Rate per order (₹) (Refer Working note-2) Order processing	100 2,20,000	100 2,40,000	100 2,60,000	7,20,000
	cost (₹) [J×K]	2,20,000	2,40,000	2,00,000	7,20,000
M.	Purchase orders	300	350	150	800
N.	Rate per order (₹) (Refer Working note-2)	500	500	500	
Ο.	Purchasing cost (₹) [M×N]	1,50,000	1,75,000	75,000	4,00,000

6. (a) Treatment of over and under absorption of overheads are:-

- (i) Writing off to costing P&L A/c:— Small difference between the actual and absorbed amount should simply be transferred to costing P&L A/c, if difference is large then investigate the causes and after that abnormal loss/ gain shall be transferred to costing P&L A/c.
- (ii) Use of supplementary Rate: Under this method the balance of under and over absorbed overheads may be charged to cost of W.I.P., finished stock and cost of sales proportionately with the help of supplementary rate of overhead.
- (iii) Carry Forward to Subsequent Year: Difference should be carried forward in the expectation that next year the position will be automatically corrected.

(b) The impact of IT in cost accounting may include the followings:

- (i) After the introduction of ERPs, different functional activities get integrated and as a consequence a single entry into the accounting system provides custom made reports for every purpose and saves an organisation from preparing different sets of documents. Reconciliation process of results of both cost and financial accounting systems become simpler and less sophisticated.
- (ii) A move towards paperless environment can be seen where documents like Bill of Material, Material Requisition Note, Goods Received Note, labour utilisation report etc. are no longer required to be prepared in multiple copies, the related department can get e-copy from the system.
- (iii) Information Technology with the help of internet (including intranet and extranet) helps in resource procurement and mobilisation. For example, production department can get materials from the stores without issuing material requisition note physically. Similarly, purchase orders can be initiated to the suppliers with the help of extranet. This enables an entity to shift towards Just-in-Time (JIT) approach of inventory management and production.

- (iv) Cost information for a cost centre or cost object is ascertained with accuracy in timely manner. Each cost centre and cost object is codified and all related costs are assigned to the cost object or cost centre. This process automates the cost accumulation and ascertainment process. The cost information can be customised as per the requirement. For example, when an entity manufactures or provide services, it can know information job-wise, batch-wise, process-wise, cost centre wise etc.
- (v) Uniformity in preparation of report, budgets and standards can be achieved with the help of IT. ERP software plays an important role in bringing uniformity irrespective of location, currency, language and regulations.
- (vi) Cost and revenue variance reports are generated in real time basis which enables the management to take control measures immediately.
- (vii) IT enables an entity to monitor and analyse each process of manufacturing or service activity closely to eliminate non-value-added activities.

The above are examples of few areas where Cost Accounting is done with the help of IT.

(c) Controllable costs and Uncontrollable costs: Cost that can be controlled, typically by a cost, profit or investment centre manager is called controllable cost. Controllable costs incurred in a particular responsibility centre can be influenced by the action of the executive heading that responsibility centre.

Costs which cannot be influenced by the action of a specified member of an undertaking are known as uncontrollable costs.

(d) Apportionment of Joint Cost amongst Joint Products using:

Market value at the point of separation: This method is used for apportionment of joint costs to joint products upto the split off point. It is difficult to apply if the market value of the product at the point of separation is not available. It is useful method where further processing costs are incurred disproportionately.

Net realizable value Method: From the sales value of joint products (at finished stage) the followings are deducted:

- Estimated profit margins
- Selling & distribution expenses, if any
- Post split off costs.

The resultant figure so obtained is known as net realizable value of joint products. Joint costs are apportioned in the ratio of net realizable value.