

MOCK TEST PAPER – 1
INTERMEDIATE: GROUP – I
PAPER – 3: COST AND MANAGEMENT ACCOUNTING

SUGGESTED ANSWERS/HINTS

1. (a) (i) Calculation of Economic Order Quantity (EOQ) = $\sqrt{\frac{2AO}{C}}$

$$= \sqrt{\frac{2 \times 14,400 \text{ units} \times ₹212}{₹450 \times 25\%}} = 233 \text{ units}$$

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

(A)	When EOQ is ordered	(₹)
Purchase Cost	(14,400 units x Rs. 450)	64,80,000
Ordering Cost	[(14,400 units/233 units) x Rs. 212]	13,102
Carrying Cost	(233 units x 1/2 x 450 x 25%)	13,106
Total Cost		65,06,208

(B) When Quantity Discount of 8% is accepted

		(₹)
Purchase Cost	(14,400 units x Rs. 414)	59,61,600
Ordering Cost	[(14,400 units/5,000 units) x Rs.212]	611
Carrying Cost	(5,000 units x 1/2 x Rs.414 x 25%)	2,58,750
Total Cost		62,20,961

Advise – The total cost of inventory is lower if quantity discount is accepted.

The company would save Rs. 2,85,247 (Rs. 65,06,208 - Rs. 62,20,961).

Note: Figures may change slightly because of approximation and decimals)

(b) (i) **Efficiency Ratio** = $\frac{\text{Standard hour (for actual production)}}{\text{Actual hour works}} \times 100$

$$= \frac{1,20,000 \text{ units} \times 12 \text{ hrs}}{12,00,000 \text{ hrs}} \times 100 = 120\%$$

(ii) **Activity Ratio** = $\frac{\text{Standard Hour (for actual production)}}{\text{Budgeted Hours}} \times 100$

$$= \frac{14,40,000}{1,44,000 \text{ units} \times 12 \text{ hours}} \times 100 = 83.34\%$$

(iii) **Capacity Ratio** = $\frac{\text{Actual Hours (worked)}}{\text{Budgeted Hours}} \times 100$

$$= \frac{12,00,000 \text{ hrs}}{1,44,000 \text{ units} \times 12 \text{ hours}} \times 100 = 69.45\%$$

(c) Statement of cost per batch and per order

No. of batch = 800 units ÷ 40 units = 20 batches

Particulars	Cost per batch (₹)	Total Cost (₹)
Direct Material Cost	600	12,000
Direct Wages	55	1100
Oven set-up cost	175	3500
Add: Production Overheads (25% of Direct wages)	13.75	275
Total Production cost	843.75	16875
Add: S&D and Administration overheads	126.56	2531.25
Total Cost	970.31	19406.25
Add: Profit (25% of total cost)	242.58	4851.56
Selling price	1,212.89	24,257.81
Selling Price per unit = $1,212.89 \div 40$ [Or $24,257.81 \div 800$]	30.32	30.32

(d) (i) Calculation of total cost for 'Professionals Protection Plus' policy

	Particulars	Amount (₹)	Amount (₹)
1	Marketing and Sales support:		
	- Policy development cost	18,56,250	
	- Cost of marketing	74,58,000	
	- Sales support expenses	18,89,250	1,12,03,500
2	Operations:		
	- Policy issuance cost	16,59,735	
	- Policy servicing cost	58,09,155	
	- Claims management cost	2,07,240	76,76,130
3	IT Cost		1,22,62,800
4	Support functions		
	- Postage and logistics	16,91,250	
	- Facilities cost	25,14,600	
	- Employees cost	9,24,000	
	- Office administration cost	26,73,660	78,03,510
	Total Cost		3,89,45,940

(ii) Calculation of cost per policy $\frac{\text{Total cost}}{\text{Number of policies}} = \frac{3,89,45,940}{844}$
 $= ₹ 46,144.48$

(iii) Cost per rupee of insured value $\frac{\text{Total cost}}{\text{Total insured value}} = \frac{3,89,45,940}{1,640 \text{ crore}}$
 $= ₹ 0.0024$

2. (a) (i) Computation of the value of materials purchased

To find out the value of materials purchased, reverse calculations from the given data can be presented as below:

Particulars	(₹)
Cost of goods sold	75,000
Add: Closing stock of finished goods	27,550
Less: Opening stock of finished goods	(25,520)
Cost of production	77,030
Add: Closing stock of work-in-progress	21,025
Less: Opening stock of work-in-progress	(15,225)
Works cost	82,830
Less: Factory overheads: [₹25,000×100/150]	(16,667)
Prime cost	66,163
Less: Direct labour	(25,000)
Raw material consumed	41,163
Add: Closing stock of raw materials	15,370
Raw materials available	56,533
Less: Opening stock of raw materials	(11,600)
Value of materials purchased	44,933

(ii) Cost statement

	(₹)
Raw material consumed [Refer to statement (i) above]	41,163
Add: Direct labour cost	25,000
Prime cost	66,163
Add: Factory overheads	16,667
Works cost	82,830
Add: Opening work-in-progress	15,225
Less: Closing work-in-progress	(21,025)
Cost of production	77,030
Add: Opening stock of finished goods	25,520
Less: Closing stock of finished goods	(27,550)
Cost of goods sold	75,000
Add: General and administration expenses	4,375
Add: Selling expenses	6,125
Cost of sales	85,500
Profit (sales i.e ₹1,05,250 – Cost of sales i.e ₹ 85,500)	19,750
Sales	1,05,250

(b)

(i) Material Cost Variance (A + B)	= {(SQ × SP) – (AQ × AP)}
Or ₹5,500	= (SQ × SP) – ₹98,000
Or (SQ × SP)	= ₹1,03,500
Or (SQA × SPA) + (SQB × SPB)	= ₹ 1,03,500
Or (1,503.8 kg × SPA) + (1,127.8 kg × ₹50)	= ₹ 1,03,500
Or (1,503.8 kg × SPA) + ₹56,390	= ₹1,03,500
Or (1,503.8 kg × SPA)	= ₹ 47,110
Or SP _A	= $\frac{47,110}{1503.80 \text{ kg}}$ = ₹31.33
(ii) Material Price Variance (A + B)	= {(AQ × SP) – (AQ × AP)}
Or ₹300	= (AQ × SP) – ₹ 98,000
Or (AQ × SP)	= ₹ 98,300
Or (AQA × SPA) + (AQB × SPB)	= ₹98,300
Or (1,500 kg × ₹31.33 (from (i) above)) + AQB × ₹50	= ₹98,300
Or ₹ 46,995 + (AQB × ₹ 50)	= ₹ 98,300
Or (AQB × ₹ 50)	= ₹ 51,305
Or AQB	= 1,026kg
Actual Quantity of Material B	= 1,026 kg.
(iii) (AQ × AP)	= ₹98,000
Or (AQ _A × AP _A) + (AQ _B × AP _B)	= ₹ 98,000
Or (1,500 kg × AP _A) + (1,026 kg (from (ii) above) × ₹53)	= ₹ 98,000
Or (1,500 kg × AP _A) + ₹ 54,378	= ₹ 98,000
Or (1,500 kg AP _A)	= ₹ 43,622
Or AP _A = $\frac{43,622}{1,500}$	= ₹ 29.10
Actual Price of Material A	= ₹ 29.10
(iv) Total Actual Quantity of Material-A and Material-B	= AQA + AQB
Or 1,500 kg + 1,026 kg (from (ii) above)	= 2,526 kg
Revised SQ _A = $\frac{1320 \text{ kg}}{(1,320 + 990)} \times 2,526 \text{ kg}$	= 1,443 kg
Revised SQ _B = $\frac{990 \text{ kg}}{(1,320 + 990)} \times 2,526 \text{ kg}$	= 1,083 kg

(v) Material Mix Variance (A + B) = {(RSQ × SP) – (AQ × SP)}
= {(RSQA × SPA) + (RSQB × SPB) – ₹98,300} = (1,443 kg (from (iv) above) × ₹ 31.33 (from (i) above)) + (1,083 kg (from (iv) above) × ₹50) - ₹98,300
= (₹45,209 + ₹54,150) – ₹98,300 = ₹ 1059 (F)

3. (a) Expense Budget of SoyaB Ltd. for the period

	Per unit (₹)	50,000 units	75,000 units	1,00,000 units
		Amount (₹)	Amount (₹)	Amount (₹)
Sales (A)	180	90,00,000	1,35,00,000	1,80,00,000
Less: Variable Costs:				
- Direct Material	72	36,00,000	54,00,000	72,00,000
- Direct Wages	24	12,00,000	18,00,000	24,00,000
- Variable Overheads	24	12,00,000	18,00,000	24,00,000
- Direct Expenses	14.4	7,20,000	10,80,000	14,40,000
- Variable factory expenses (70% of Rs 16 p.u.)x 120%	13.44	6,72,000	10,08,000	13,44,000
- Variable Selling & Dist. exp. (85% of Rs 10 p.u.)x120%	10.2	5,10,000	7,65,000	10,20,000
Total Variable Cost (B)	158.04	79,02,000	1,18,53,000	1,58,04,000
Contribution (C) = (A – B)	21.96	10,98,000	16,47,000	21,96,000
Less: Fixed Costs:				
- Office and Admin. exp. (100%)	--	3,30,000	3,30,000	3,30,000
- Fixed factory exp. (30%)	--	2,64,000	2,64,000	2,64,000
- Fixed Selling & Dist. exp. (15%)	--	82,500	82,500	82,500
Total Fixed Costs (D)	--	6,76,500	6,76,500	6,76,500
Profit (C – D)	--	4,21,500	9,70,500	15,19,500

(b) Income Statement

	LNP Ltd. (₹)	MNT Ltd. (₹)
Sales (Rs.)	13,60,000	17,00,000
Less: Variable Cost	10,88,000	10,20,000
Contribution	2,72,000	6,80,000
P.V. Ratio $\left(\frac{\text{Contribution}}{\text{Sales}} \times 100\right)$	20%	40%
Fixed Cost (₹)	1,72,000	5,80,000
Profit (₹)	1,00,000	1,00,000

(i) Break-Even Point = $\frac{\text{Fixed Cost}}{\text{P. V. Ratio}}$

LNP Ltd. = $= \frac{₹ 1,72,000}{20\%} = ₹ 8,60,000$

MNT Ltd. = $= \frac{₹ 5,80,000}{40\%} = ₹ 14,50,000$

(ii) Sales value to earn a profit of ₹ 5,00,000

$$\text{Sales} = \frac{\text{Fixed Cost} + \text{Desired Profit}}{\text{P. V. Ratio}}$$

$$\text{LNP Ltd.} = \frac{1,72,000 + 5,00,000}{40\%} = ₹ 33,60,000$$

$$\text{MNT Ltd.} = \frac{5,80,000 + 5,00,000}{40\%} = ₹ 27,00,000$$

(iii) Sales value at which both companies will earn same profit

Let S = Sales value and P = Profit

Sales – Variable cost = Fixed cost + Profit

or, Contribution = Fixed cost + Profit

LNP Ltd.:

$$20\% S = ₹ 1,72,000 + P$$

$$\text{or, } 0.20S = ₹ 1,72,000 + P \dots\dots\dots(i)$$

MNT Ltd.

$$40\% S = ₹ 5,80,000 + P$$

$$\text{or, } 0.40S = ₹ 5,80,000 + P \dots\dots\dots(ii)$$

By solving these equations, we will get the value of 'S' and 'P'

$$0.20S = 1,72,000 + P$$

$$0.40S = 5,80,000 + P$$

$$\underline{\hspace{1cm} - \hspace{1cm} -}$$

$$- 0.20S = -4,08,000$$

$$\text{or, } S = ₹ 20,40,000$$

Putting the value of 'S' in equation no. (i) we will get the value of 'P'

$$0.20 \times 20,40,000 = 1,72,000 + P$$

$$\text{or, } P = ₹ 2,36,000$$

Therefore, at Sale value of ₹20,40,000 both the companies will earn same profit of ₹ 2,36,000

4. (a)

Process X Account

Particulars	Tones	Amount (₹)	Particulars	Tones	Amount (₹)
To Materials	1,500	32,250	By Weight Loss	30	---
To Wages		5,000	By Scrap	60	180
To Direct Expenses		3,820	By Process Y	846	24,534
			By Warehouse	564	16,356
Total	1,500	41,070	Total	1,500	41,070

$$\text{Cost per Ton} = (41,070 - 180) / (1,500 - 30 - 60) = ₹ 29 \text{ per ton}$$

Process Y account

Particulars	Tones	Amount (₹)	Particulars	Tones	Amount (₹)
To Process X	846	24,534	By Weight Loss	26	---
To Materials	454	6,356	By Scrap	52	260
To Wages		3,260	By Process Z	611	18,332.5
To Direct Expenses		2,775	By Warehouse	611	18,332.5
Total	1300	36,925	Total	1300	36,925

Cost per Ton = $(36,925 - 260) / (1,300 - 26 - 52) = ₹30$ per ton

Process Z Accounts

Particulars	Tones	Amount (₹)	Particulars	Tones	Amount (₹)
To Process Y	611	18332.5	By Weight Loss	16	---
To Materials	189	2,268	By Scrap	32	224
To Wages		2,540	By Warehouse	752	24,817
To Direct Expenses		1,900			
Total	800	25,041	Total	800	25041

Cost per Ton = $(25,041 - 224) / (800 - 16 - 32) = ₹33$ per ton

(b) Contract Account

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Materials		27,78,600	By material at site		40,000
To Direct wages	14,60,800		By Work in progress:		
Add: outstanding	<u>2,21,200</u>	16,82,000	- Work certified	80,00,000	
To Site expenses		10,56,000	- Work uncertified	9,60,000	89,60,000
To Office expenses		6,88,600			
To Postage and Stationery		32,560			
To Rates and taxes	28,160				
Less: Advance	<u>(1,540)</u>	26,620			
To Fuel and power		9,30,600			
To Depreciation*		10,06,600			
To Notional profit c/d		7,98,420			
		<u>90,00,000</u>			<u>90,00,000</u>

* Depreciation

(i) On Machinery = $\{10\% \text{ on } (₹39,60,000 \times 0.85)\} = ₹3,36,600$

(ii) On Vehicles = $15\% \text{ on } ₹40,00,000 = ₹6,00,000$

- (iii) On Furniture = 10% on ₹7,00,000 = ₹ 70,000
 Total = ₹ 9,86,800

5. (a) (i) Traditional Absorption Costing

	Zm	Rm	Pm	Total
(a) Quantity (units)	6,000	7,200	9,840	23,040
(b) Direct labour per unit (₹)	80	150	200	-
(c) Direct labour hours (a × b)/₹ 40	12,000	27,000	49,200	88,200

Overhead rate per direct labour hour = Budgeted overheads / Budgeted labour hours
 = (₹2,50,000 + ₹1,50,000 + ₹ 1,00,000 + ₹3,00,000) / 88,200 hours
 = ₹8,00,000 / 88,200 hours
 = ₹9 per direct labour hour(approx.)

Calculation of Cost per Unit

	Zm	Rm	Pm
Direct Costs:			
Direct Material	450	420	880
Direct Labour (₹)	80	150	200
Production Overhead: (₹)	18	33.75	45
	(80× 9/40)	(150× 9/40)	(200× 9/40)
Total cost per unit (₹)	548	603.75	1125

(ii) Calculation of Cost-Driver level under Activity Based Costing

	Zm	Rm	Pm	Total
Quantity (units)	6,000	7,200	9,840	-
No. of orders (to be rounded off for fraction)	200 (6,000 / 30)	240 (7,200 / 30)	328 (9,840 / 30)	768
No. of production runs	120 (6,000 / 50)	144 (7,200 / 50)	197 (9,840 / 50)	461
No. of Inspections (done for each production run)	120	144	197	461
Maintenance hours	4,000	2,000	4,000	10,000

Calculation of Cost-Driver rate

Activity	Budgeted Cost (₹) (a)	Cost-driver level (b)	Cost Driver rate (₹) (c) = (a) / (b)
Material procurement	2,50,000	768	325.5
Set-up	1,50,000	461	325.5
Quality control	1,00,000	461	217.0
Maintenance	3,00,000	10,000	30.0

Calculation of total cost of products using Activity Based Costing

Particulars	Product		
	Zm (₹)	Rm (₹)	Pm (₹)
Direct Material	450	420	880
Direct Labour	80	150	200
Prime Cost per unit (A)	530	570	1080
Material procurement	10.85 (325.5×200/6000)	10.85 (325.5×240/7200)	10.85 (325.5×328/9840)
Set-up	6.51 (325.5×120/6000)	6.51 (325.5×144/7200)	6.51 (325.5×196.8/9840)
Quality control	4.34 (217×120/6000)	4.34 (217×144/7200)	4.34 (217×196.8/9840)
Maintenance	20.0 (4000×30/6000)	8.3 (2000×30/7200)	12.2 (4000×30/9840)
Overhead Cost per unit (B)	41.7	30.0	33.9
Total Cost per unit (A + B)	571.7	600.0	1113.9

(b) (i) (a) Statement of Joint Cost allocation of inventories of X, Y and Z

(By using Net Realisable Value Method)

	Products			Total
	T	U	V	
	(₹)	(₹)	(₹)	(₹)
Final sales value of total production (Working Note 1)	1,14,00,000 (1,900 × ₹ 6,000)	1,40,00,000 (2,800 × ₹ 5,000)	2,03,12,500 (3,125 × ₹ 6,500)	4,57,12,500
Less: Additional cost	--	--	(9,00,000)	(9,00,000)
Net realisable value (at split-off point)	1,14,00,000	1,40,00,000	1,94,12,500	4,48,12,500
Joint cost allocated (Working Note 2)	15,89,958	19,52,580	27,07,462	62,50,000

Cost of goods sold as on March 31, 2022

(By using Net Realisable Value Method)

	Products			Total
	T	U	V	
	(₹)	(₹)	(₹)	(₹)
Allocated joint cost	15,89,958	19,52,580	27,07,462	62,50,000
Additional costs	--	--	9,00,000	9,00,000
Cost of goods available for sale (CGAS)	15,89,958	19,52,580	36,07,462	71,50,000
Less: Cost of ending inventory	7,53,138	2,09,205	1,44,298	11,06,642

(Working Note 1)	(CGAS×47.37%)	(CGAS × 10.71%)	(CGAS × 4%)	
Cost of goods sold	8,36,820	17,43,375	34,63,163	60,43,358

Working Note:

1. Total production of three products for the year 2021-2022

Products	Quantity sold in tones	Quantity of ending inventory in tons	Total production	Ending inventory percentage (%)
1	2	3	(4) = [(2) + (3)]	(5) = (3)/ (4)
T	1000	900	1900	47.37
U	2500	300	2800	10.71
V	3000	125	3125	4.00

2. Joint cost apportioned to each product:

$$\frac{\text{Total Joint cost}}{\text{Total Net Realisable Value}} \times \text{Net Realisable Value of each product}$$

$$\text{Total cost of Product T} = \frac{62,50,000}{4,48,12,500} \times 1,14,00,000 = 15,89,958$$

$$\text{Total cost of Product U} = \frac{62,50,000}{4,48,12,500} \times 1,40,00,000 = 19,52,580$$

$$\text{Total cost of Product V} = \frac{62,50,000}{4,48,12,500} \times 1,94,12,500 = 27,07,462$$

6. (a) The advantages of zero-based budgeting are as follows:

- It provides a systematic approach for the evaluation of different activities and ranks them in order of preference for the allocation of scarce resources.
- It ensures that the various functions undertaken by the organization are critical for the achievement of its objectives and are being performed in the best possible way.
- It provides an opportunity to the management to allocate resources for various activities only after having a thorough cost-benefit-analysis. The chances of arbitrary cuts and enhancement are thus avoided.
- The areas of wasteful expenditure can be easily identified and eliminated.
- Departmental budgets are closely linked with corporation objectives.
- The technique can also be used for the introduction and implementation of the system of 'management by objective.' Thus, it cannot only be used for fulfillment of the objectives of traditional budgeting but it can also be used for a variety of other purposes.

- (b) **Difference between Cost Accounting and Management Accounting**

	Basis	Cost Accounting	Management Accounting
(i)	Nature	It records the quantitative aspect only.	It records both qualitative and quantitative aspect.
(ii)	Objective	It records the cost of producing a product and providing a service.	It Provides information to management for planning and co-ordination.
(iii)	Area	It only deals with cost Ascertainment.	It is wider in scope as it includes financial accounting, budgeting, taxation, planning etc.

(iv)	Recording of data	It uses both past and present figures.	It is focused with the projection of figures for future.
(v)	Development	Its development is related to industrial revolution.	It develops in accordance to the need of modern business world.
(vi)	Rules and Regulation	It follows certain principles and procedures for recording costs of different products.	It does not follow any specific rules and regulations.

- (c) In integrated accounting system cost and financial accounts are kept in the same set of books. Such a system will have to afford full information required for Costing as well as for Financial Accounts. In other words, information and data should be recorded in such a way so as to enable the firm to ascertain the cost (together with the necessary analysis) of each product, job, process, operation or any other identifiable activity. It also ensures the ascertainment of marginal cost, variances, abnormal losses and gains. In fact all information that management requires from a system of Costing for doing its work properly is made available. The integrated accounts give full information in such a manner so that the profit and loss account and the balance sheet can be prepared according to the requirements of law and the management maintains full control over the liabilities and assets of its business.

Since, only one set of books are kept for both cost accounting and financial accounting purpose so there is no necessity of reconciliation of cost and financial accounts.

- (d) Cost units are usually the units of physical measurement like number, weight, area, volume, length, time and value.

Industry or Product	Cost Unit Basis
Automobile	Number
Steel	Ton
Cement	Ton/ per bag etc.
Chemicals	Litre, gallon, kilogram, ton etc.
Power	Kilo-watt hour (kWh)
Transport	Passenger- kilometer

- (e)

Bin Card	Stores Ledger
It is maintained by the storekeeper in the store.	It is maintained in cost accounting department.
It contains only quantitative details of material received, issued and returned to stores.	It contains information both in quantity and value.
Entries are made when transaction takes place.	It is always posted after the transaction.
Each transaction is individually posted.	Transactions may be summarized and then posted.
Inter-department transfers do not appear in Bin Card.	Material transfers from one job to another job are recorded for costing purposes.