MOCK TEST PAPER – 1

INTERMEDIATE: GROUP – I

PAPER – 3: COST AND MANAGEMENT ACCOUNTING

SUGGESTED ANSWERS/HINTS

1. (a) Computation of Total cost of material purchased of SKY Manufacturing Company

Particulars	Units	(Amount in ₹)
Listed Price of Materials	5,000	7,50,000
Less: Trade discount @ 10% on invoice price		(75,000)
		6,75,000
Add: CGST @ 6% of ₹ 6,75,000		40,500
SGST @ 6% of ₹ 6,75,000		40,500
		7,56,000
Add: Road Tax paid		15,000
Freight and Insurance		51,000
Commission and Brokerage Paid		30,000
Add: Cost of returnable containers:		
Amount deposited ₹ 90,000		
Less: Amount refunded ₹ 60,000		30,000
		8,82,000
Add: Other Expenses @ 2% of Total Cost $\left(\frac{8,82,000}{98}\times 2\right)$		18,000
Total cost of material		9,00,000
Less: Shortage due to Normal Loss @ 20%	1,000	-
Total cost of material of good units	**4,000**	**9,00,000**
Cost per unit (₹ 9,00,000/4,000 units)		**225**

Notes:

1. GST is payable on net price i.e., listed price less discount.
2. Detention charges/ fines imposed for non-compliance of rule or law by any statutory authority. It is an abnormal cost and not included with cost of purchase.
3. Shortage due to normal reasons should not be deducted from cost to ascertain total cost of good units.

(b) Contract Account

	Particulars	(₹)		Particulars	(₹)
To	Material purchased	7,20,000	By	Work-in-progress:	
”	Stores issued	1,20,000		Value of work certified	15,60,000
”	Wages	2,70,000		Cost of work uncertified	72,000
”	Plant	90,000	”	Material unused	48,000
”	Chargeable expenses	90,000	”	Plant less depreciation	36,000

"	Indirect expenses	30,000			
"	Costing P&L A/c (Notional profit) (bal. fig.)	3,96,000			
		17,16,000			**17,16,000**

(c) Calculation of Net joint costs to be allocated:

Particulars	Amount (₹)
Joint Costs	15,00,000
Less: Net Realizable value of by-product (75,000 × 5)	3,75,000
Net joint costs to be allocated	11,25,000

Therefore, amount of joint product cost that Mili Ltd. would allocate to the product-R by using the physical volume method to allocate joint production costs:

$$= \frac{\text{Physical quantity of Product-R}}{\text{Total Quantity}} \times \text{Net joint costs to be allocated}$$

$$= \frac{1,80,000 \text{ units}}{2,70,000 \text{ units}} \times 11,25,000 = ₹\ 7,50,000$$

(d) (i) Calculation of equivalent units of production:

Input Details	Units	Output Particulars	Units	Equivalent Units			
				Material		Conversion cost	
				%	Units	%	Units
Beginning WIP	22,400	From beginning WIP	22,400	50	11,200	70	15,680
Unit Introduced	1,40,000	Completed output	1,06,400	100	1,06,400	100	1,06,400
		Closing W-I-P	33,600	80	26,880	30	10,080
Total	1,62,400	Total	1,62,400		1,44,480		1,32,160

(ii) Calculation of cost per equivalent unit for conversion costs

Particulars	
Direct labour	₹ 9,14,400
Factory overheads	₹ 19,55,800
Total	₹ 28,70,200
Equivalent units	1,32,160 units
Cost per equivalent unit	**₹ 21.72**

2. (a) Decision making Cost Sheet (per unit)

Particulars	(Amount in ₹)	(Amount in ₹)
Direct materials 40 m^2 at ₹ 10.60 per m^2		424
Direct wages:		
Bonding department- 48 hours at ₹ 25 per hour	1,200	
Finishing department- 30 hours at ₹ 19 per hour	570	1,770
Prime Cost		**2,194**

Variable overhead:*		
Bonding department- 48 hours at ₹ 1.50 per hour	72	
Finishing department- 30 hours at ₹ 1.00 per hour	30	102
Variable production cost		**2,296**
Fixed production overhead#		80
Total production cost		**2,376**
Selling and distribution cost$	40	
Administration cost$	20	60
Total Cost		**2,436**

Selling price per unit = ₹ 2,436 × $\frac{100}{75}$ = **₹ 3,248**

Working Notes:

* Variable overhead rates-

Bonding: $\frac{15,00,000}{10,00,000 \text{ hours}}$ = ₹ 1.50

Finishing: $\frac{6,00,000}{6,00,000 \text{ hours}}$ = ₹ 1.00

Fixed production overhead rate per unit of output = $\frac{15,68,000}{19,600 \text{ units}}$ = ₹ 80

$ Selling and production cost per unit of output = $\frac{7,84,000}{19,600 \text{ units}}$ = ₹ 40

Administration cost per unit of output = $\frac{3,92,000}{19,600 \text{ units}}$ = ₹ 20

(b) (i) Fixed Overhead Cost Variance = (Std Fixed Overheads – Actual Fixed Overheads)

= ($\frac{1,00,000}{20,000} \times 21,000$ units – Actual Fixed Overheads) = 15,000A

= (1,05,000 - Actual Fixed Overheads) = 15,000A

=> Actual Fixed Overheads = 1,20,000

(ii) Fixed Overhead Calendar Variance=(Actual Days – Budgeted Days) x Budgeted rate per day

= (Actual Days - 25)× $\frac{1,00,000}{25}$ = 8,000F

= (Actual Days - 25) = 2

=> Actual Days = 27

(iii) Fixed Overhead Efficiency Variance =(Standard Hours for Actual Production – Actual Hours) x Budgeted rate per hour

= $\left(\frac{10,000}{20,000} \times 21,000 - \text{Actual Hours}\right) \times 10$ = 10,000A

= (10,500 – Actual Hours) = -1,000

=> Actual Hours = 11,500

(iv) Fixed overheads Expenditure variance=(Budgeted Fixed Overheads – Actual Fixed Overheads)

= (1,00,000 – 1,20,000) = **20,000A**

(v) Fixed overheads volume variance = (Budgeted units – Actual Units) x Budgeted Rate per unit

$$= \left(20,000-21,000\right)\times\frac{1,00,000}{20,000} = \textbf{5,000F}$$

(vi) Fixed overheads capacity variance = (Budgeted Hours for Actual Days – Actual Hours)

x Budgeted Rate per Hour

$$= \left(\frac{10,000}{25}\times 27-11,500\right)\times 10 = \textbf{7,000F}$$

3. (a) Calculation of total earnings and earnings per hour:

	Particulars	(a) Time taken is 256 hours	(b) Time taken is 120 hours	(c) Time taken is 24 hours
A.	Time Allowed	240 hours	240 hours	240 hours
B.	Time taken	256 hours	120 hours	24 hours
C.	Time Saved (A-B)	Nil	120 hours	216 hours
D.	Bonus hours (Refer workings)	Nil	40.80 hours	64.80 hours
E.	Hours to be paid (B+D)	256 hours	160.80 hours	88.80 hours
F.	Wages rate per hour	₹ 75	₹ 75	₹ 75
G.	**Total earnings (E×F)**	**₹ 19,200**	**₹ 12,060**	**₹ 6,660**
H.	**Earnings per hour (G÷B)**	**₹ 75**	**₹ 100.50**	**₹ 277.50**

Working Notes:

Calculation of bonus hours:

	Time saved 120 hours	Time saved 216 hours
For first 20% of time allowed i.e. 48 hours	12 (25% of 48 hours)	12 (25% of 48 hours)
For next 30% of time allowed i..e. 72 hours	28.80 (40% of 72 hours)	28.80 (40% of 72 hours)
For next 30% of time allowed i..e. 72 hours	-	21.60 (30% of 72 hours)
For next 20% of time allowed i..e. 48 hours	-	2.40 (10% of 24 hours)
Bonus hours	**40.80**	**64.80**

(b)

Actual Sales	₹ 27,00,000
Actual Selling Price per unit	18
Actual units (50%) $(\frac{27,00,000}{18})$	1,50,000

Therefore, budgeted units (80%) $(1,50,000 \times \frac{80}{50})$	2,40,000
Budgeted Selling Price $(\frac{18}{90\%})$	20

Budgeted Variable cost per unit $= \frac{(2,40,000 \times 20)\ (1-.30)}{2,40,000 \text{ units}} = \frac{33,60,000}{2,40,000 \text{ units}}$ = ₹ 14

(i) Statement of profitability at budget and actual activity

Particulars		Budget (80%)	Actual (50%)
Units		2,40,000	1,50,000
Sales (₹)	(a)	48,00,000	27,00,000
Variable cost (₹)	(b)	33,60,000	22,05,000
Contribution (₹)	(c = a - b)	14,40,000	4,95,000
Fixed cost (₹)	(d)	7,20,000	7,20,000
Profit (₹)	(e = c – d)	7,20,000	(2,25,000)

(ii) Calculation of P/V ratio and BES

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

$= \frac{4,95,000}{27,00,000} \times 100$ = 18.33%

Break Even Sales (in ₹) $= \frac{\text{Fixed Cost}}{\text{P/v Ratio}}$

$= \frac{7,20,000}{18.33\%}$ = ₹ 39,27,987

Break Even Sales (in Units) $= \frac{\text{Fixed Cost}}{\text{Contribution per unit}}$

$= \frac{7,20,000}{3.3^*}$ = 2,18,182 Units

*Contribution per unit = $\frac{4,95,000}{1,50,000 \text{ units}}$ = 3.3 per unit

4. (a) Operating Cost Statement

Particulars	Total Cost Per Month (in ₹)
Fixed Charges:	
Salary of Drivers (₹ 25,000 × 20 buses)	5,00,000
Salary of Cleaners (₹ 15,000 × 20 buses)	3,00,000
Road Tax (₹ 1,50,000 × 20 buses)	30,00,000
Insurance (₹ 63,36,000/12 months)	5,28,000

Depreciation $\left(\frac{48,00,000 \times 20\% \times 20 \text{ buses}}{12 \text{ months}}\right)$	16,00,000
Administrative Overheads (₹ 50,88,000/12 months)	4,24,000
Total (A)	**63,52,000**
Variable Charges:	
Diesel (60,750 km. × ₹10)	6,07,500
Tyres and Tubes	12,58,040
Lubricants	10,70,000
Repairs	24,70,000
Total (B)	**54,05,540**
Total Operating Cost (A+B)	1,17,57,540
Add: Passenger tax (Refer to WN-1)	29,39,385
Add: Profit (Refer to WN-1)	48,98,975
Total takings (C)	**1,95,95,900**
No. of passengers kms. in a month (D)	24,30,000
Cost per passenger km. (C/D)	**8.06**

Working Notes:

1. Let total takings be X then Passenger tax and profit will be as follows:

   X = ₹ 1,17,57,540 + 0.15X + 0.25X

   X – 0.40X = ₹ 1,17,57,540

   X = $\frac{1,17,57,540}{0.60}$ = ₹ 1,95,95,900

   Passenger tax = ₹ 1,95,95,900 × 0.15 = ₹ 29,39,385

   Profit = ₹ 1,95,95,900 × 0.25 = ₹ 48,98,975

2. Total Kilometres to run during the month of November, 2021

   = (112.50 km. × 30 days × 20 Buses) x 90% = 60,750 Kilometres

3. Total passenger Kilometres during the month of November, 2021

   = 60,750 km. × 40 passengers = 24,30,000 Passenger- km.

(b) Statement of Cost for the month of February, 2022

Particulars	Amount (₹)	Amount (₹)
(i) Cost of Material Consumed:		
Raw materials purchased (₹ 3,00,000 – ₹ 60,000)	2,40,000	
Carriage inwards	30,000	
Add: Opening stock of raw materials	1,20,000	
Less: Closing stock of raw materials	(45,000)	3,45,000
Direct Wages		1,80,000
Direct expenses:		
Cost of special drawing	45,000	
Hire charges paid for Plant (Direct)	36,000	81,000

(ii) Prime Cost		**6,06,000**
Carriage on return	9,000	
Store overheads (10% of material consumed)	34,500	
Factory overheads (20% of Prime cost)	1,21,200	
Additional expenditure for rectification of defective products (refer working note)	3,240	1,67,940
Gross factory cost		7,73,940
Add: Opening value of W-I-P		75,000
Less: Closing value of W-I-P		(36,000)
(iii) Works/ Factory Cost		**8,12,940**
Less: Realisable value on sale of scrap		(7,500)
(iv) Cost of Production		**8,05,440**
Add: Opening stock of finished goods		-
Less: Closing stock of finished goods		-
Cost of Goods Sold		**8,05,440**
Administrative overheads:		
Maintenance of office building	3,000	
Salary paid to Office staff	37,500	
Legal Charges	3,750	44,250
Selling overheads:		
Expenses for participation in Industrial exhibition	12,000	12,000
Distribution overheads:		
Depreciation on delivery van	9,000	
Warehousing charges	2,250	11,250
(v) Cost of Sales		**8,72,940**

Working Notes:

1. Number of Rectified units

Total Output	8,000 units
Less: Rejected 10%	800 units
Finished product	7,200 units
Rectified units (10% of finished product)	**720 units**

2. Proportionate additional expenditure on 720 units

= 20% of proportionate direct wages

= 0.20 x (₹ 1,80,000/8,000) x 720

= ₹ 3,240

5. (a) (i) Statement Showing "Cost per unit - Traditional Method"

Particulars of Costs	A (₹)	B (₹)	C (₹)
Direct Materials	1,350	1,200	1,800
Direct Labour [(4, 12, 8 hours) × ₹ 300]	1,200	3,600	2,400
Production Overheads [(10, 18, 14 hours) × ₹ 90]	900	1,620	1,260
Cost per unit	**3,450**	**6,420**	**5,460**

(ii) Statement Showing "Cost per unit - Activity Based Costing"

Products	A	B	C
Production (units)	**3,000**	**5,000**	**20,000**
	(₹)	**(₹)**	**(₹)**
Direct Materials (1350, 1200, 1800)	40,50,000	60,00,000	3,60,00,000
Direct Labour (1200, 3600, 2400)	36,00,000	1,80,00,000	4,80,00,000
Machine Related Costs @ ₹ 27 per hour (30,000, 90,000, 2,80,000)	8,10,000	24,30,000	75,60,000
Setup Costs @ ₹ 1,44,000 per setup (20, 10, 20)	28,80,000	14,40,000	28,80,000
Inspection Costs @ ₹ 72,000 per inspection (100, 40, 60)	72,00,000	28,80,000	43,20,000
Purchase Related Costs @ ₹ 11,250 per purchase (60, 100, 160)	6,75,000	11,25,000	18,00,000
Total Costs	**1,92,15,000**	**3,18,75,000**	**10,05,60,000**
Cost per unit (Total Cost ÷ Units)	**6,405**	**6,375**	**5,028**

Working Notes:

1. Number of Batches, Purchase Orders, and Inspections-

	Particulars	A	B	C	Total
A.	Production (units)	3,000	5,000	20,000	
B.	Batch Size (units)	150	500	1,000	
C.	Number of Batches [A. ÷ B.]	20	10	20	50
D.	Number of Purchase Order per batch	3	10	8	
E.	Total Purchase Orders [C. × D.]	60	100	160	320
F.	Number of Inspections per batch	5	4	3	
G.	Total Inspections [C. × F.]	100	40	60	200

2. Total Machine Hours-

	Particulars	A	B	C
A.	Machine Hours per unit	10	18	14
B.	Production (units)	3,000	5,000	20,000
C.	Total Machine Hours [A. × B.]	30,000	90,000	2,80,000

Total Machine Hours = 4,00,000

Total Production Overheads-

= 4,00,000 hrs. × ₹ 90 = ₹ 3,60,00,000

3. Cost Driver Rates-

Cost Pool	%	Overheads (₹)	Cost Driver Basis	Cost Driver (Units)	Cost Driver Rate (₹)
Setup	20%	72,00,000	Number of batches	50	1,44,000 per Setup
Inspection	40%	1,44,00,000	Number of inspections	200	72,000 per Inspection
Purchases	10%	36,00,000	Number of purchases	320	11,250 per Purchase
Machine Operation	30%	1,08,00,000	Machine Hours	4,00,000	27 per Machine Hour

(b) Statement Showing Distribution of Overheads of PM Ltd.

Particulars	Basis	Total	Production Departments			Service Departments	
			P_1	P_2	P_3	S_1	S_2
		(₹)	(₹)	(₹)	(₹)	(₹)	(₹)
Direct wages	Actual	33,900	-	-	-	30,000	3,900
Rent & rates	Area	1,00,000	20,000	25,000	30,000	20,000	5,000
General lighting	Light points	12,000	2,000	3,000	4,000	2,000	1,000
Indirect wages	Direct wages	38,780	12,000	8,000	12,000	6,000	780
Power	H.P.	30,000	12,000	6,000	10,000	2,000	-
Depreciation of machines	Value of machines	2,00,000	48,000	64,000	80,000	4,000	4,000
Sundries	Direct wages	1,93,900	60,000	40,000	60,000	30,000	3,900
		6,08,580	**1,54,000**	**1,46,000**	**1,96,000**	**94,000**	**18,580**

Redistribution of Service Department's Expenses over Production Departments

	P_1 (₹)	P_2 (₹)	P_3 (₹)	S_1 (₹)	S_2 (₹)
Total overhead distributed as above	1,54,000	1,46,000	1,96,000	94,000	18,580
Dept. S_1 Overheads apportioned (20:30:40:—:10)	18,800	28,200	37,600	(94,000)	9,400
Dept. S_2 overheads apportioned	11,192	5,596	8,394	2,798	(27,980)

(40:20:30:10:—)					
Dept. S_1 Overheads apportioned (20:30:40:—:10)	560	839	1,119	(2,798)	280
Dept. S_2 overheads apportioned (40:20:30:10:—)	124	63	93	-	(280)
	1,84,676	**1,80,698**	**2,43,206**	**-**	**-**
Working hours	3,070	4,475	2,419		
Rate per hour	**60.16**	**40.38**	**100.54**		

Determination of total cost of Product 'X'

	(₹)
Direct material cost	1,000.00
Direct labour cost	600.00
Overhead cost (See working note)	744.14
	2,344.14

Working Note:

Overhead cost

= (₹ 60.16 × 4 hrs.) + (₹ 40.38 × 5 hrs.) + (₹ 100.54 × 3 hrs.)

= ₹ 240.62 + ₹ 201.90 + ₹ 301.62 = ₹ 744.14

6. (a)

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.

(b)

Item	Cost Tracing	Cost Allocation	Non-manufacturing
Carpenter wages	√		
Depreciation - office building			√
Glue for assembly		√	
Lathe department supervisor		√	
Metal brackets for drawers	√		
Factory washroom supplies		√	
Lumber	√		
Samples for trade shows			√

Lathe depreciation		√	
Lathe operator wages		√	

(c) **The economic batch size or Economic Batch Quantity** may be determined by calculating the total cost for a series of possible batch sizes and checking which batch size gives the minimum cost. The objective here being to determine the production lot (Batch size) that optimizes on both set up and inventory holding cots formula. The mathematical formula usually used for its determination is as follows:

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

Where,

D = Annual demand for the product

S =Setting up cost per batch

C=Carrying cost per unit of production

(d) **Essential pre-requisites for Integrated Accounts:** The essential pre-requisites for integrated accounts include the following steps-

1. The management's decision about the extent of integration of the two sets of books. Some concerns find it useful to integrate up to the stage of prime cost or factory cost while other prefers full integration of the entire accounting records.
2. A suitable coding system must be made available so as to serve the accounting purposes of financial and cost accounts.
3. An agreed routine, with regard to the treatment of provision for accruals, prepaid expenses, other adjustment necessary for preparation of interim accounts.
4. Perfect coordination should exist between the staff responsible for the financial and cost aspects of the accounts and an efficient processing of accounting documents should be ensured.

(e) **Inter-Process Profit:** To control cost and to measure performance, different processes within an organization are designated as separate profit centres. In this type of organizational structure, the output of one process is transferred to the next process not at cost but at market value or cost plus a percentage of profit. The difference between cost and the transfer price is known as inter-process profits.

The advantages and disadvantages of using inter-process profit, in the case of process type industries are as follows:

Advantages:

1. Comparison between the cost of output and its market price at the stage of completion is facilitated.
2. Each process is made to stand by itself as to the profitability.

Disadvantages:

1. The use of inter-process profits involves complication.
2. The system shows profits which are not realised because of stock not sold out.