Mock Test Paper - Series I: July, 2026

Date of Paper: 31st July 2026

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

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Suggested Answers/ Hints

1. (B) ₹ 1.13

Process – I

Statement of Equivalent Production

Particulars	Input (Kg.)	Particulars	Output (Kg.)	Material (%)	Material (Kg.)	Conversion (%)	Conversion (Kg.)
Opening WIP	50,000	Normal Loss	44,000	–	–	–	–
New Material Introduced	2,20,000	Units Completed	1,70,000	100	1,70,000	100	1,70,000
		Abnormal Loss	16,000	100	16,000	100	16,000
		Closing WIP	40,000	100	40,000	70	28,000
Total	**2,70,000**	**Total**	**2,70,000**		**2,26,000**		**2,14,000**

Statement of Cost for Each Element

Elements of Cost	Opening WIP (₹)	Current Cost (₹)	Total Cost (₹)	Equivalent Units (Kg.)	Cost per Kg. (₹)
Material	25,000	88,000	1,13,000	2,26,000	0.500
Conversion Cost	15,000	1,20,000	1,35,000	2,14,000	0.631
Total	**40,000**	**2,08,000**	**2,48,000**		**1.131**

2. (A) ₹ 1,92,270

3. (D) ₹ 37,668

Statement of Apportionment of Cost

Particulars	Elements	Equivalent Units (Kg.)	Cost per Unit (₹)	Cost (₹)	Total (₹)
Work Completed	Material	1,70,000	0.500	85,000	

	Conversion	1,70,000	0.631	1,07,270	1,92,270
Closing WIP	Material	40,000	0.500	20,000	
	Conversion	28,000	0.631	17,668	37,668

4. (A) Profit ₹ 80,000

Statement Showing Comparative Data

Alternative I – Sell after Process I

Particulars	Amount (₹)
Sales (1,20,000 kg × ₹ 1.80)	2,16,000
Less: Cost (1,20,000 kg × ₹ 1.131)	1,35,720
Profit	**80,280**

Alternative II – Further Processing

Particulars	Amount (₹)
Sales (2,40,000 kg × ₹ 2.40)	5,76,000
Less: Cost from Process I	1,35,720
Material in Process II	1,50,000
Processing Cost in Process II	1,30,000
Total Cost	**4,15,720**
Profit	**1,60,280**

Conclusion:

Increase in Profit = ₹ 1,60,280 – ₹ 80,280 = ₹ 80,000

5. (B) ₹ 1.84

Calculation of Minimum Selling Price

Cost of processing remaining 40,000 kg. further

Particulars	Amount (₹)
Additional Material Cost	50,000
Additional Processing Cost	25,000
Cost from Process I (40,000 × ₹ 1.131)	45,240
Opportunity Cost if 40,000 kg. are further processed (40,000 × ₹ 0.669)	26,760
Total Cost	**1,47,000**

Additional Output (40,000 × 2) = 80,000 kg

Minimum Selling Price per kg = $\frac{₹\ 1,47,000}{80,000}$ = ₹ 1.84 per kg

Case Scenario 2

Working Notes:

(i) Computation of Annual Consumption & Annual Demand for raw material 'MFM':

Particulars	Amount
Sales forecast of the product 'Multigrain Loaf'	12,000 units
Less: Opening stock of 'Multigrain Loaf'	1,100 units
Fresh units of 'Multigrain Loaf' to be produced	10,900 units
Raw material required to produce 10,900 units (10,900 units × 2.5 kg.)	27,250 kg.
Less: Opening Stock of 'MFM'	1,200 kg.
Annual demand for raw material 'MFM'	**26,050 kg.**

(ii) Computation of Economic Order Quantity (EOQ)

EOQ = $\sqrt{\frac{2 \times A \times O}{C}}$

Where:

- A = Annual demand = 26,050 kg.
- O = Ordering cost = ₹540 per order
- C = Carrying cost per kg p.a. = ₹95 × 14.4% = ₹13.68

EOQ = $\sqrt{\frac{2 \times 26,050 \times 540}{13.68}}$

= $\sqrt{\frac{2,81,34,000}{13.68}}$

EOQ = 1,434 kg. (approx.)

(iii) Re-order Level

= Maximum consumption per day × Maximum lead time

Average Consumption per day = 26,050 kg. ÷ 364 days = 71.57 kg.

Maximum Consumption per day = 71.57 kg. + 25 kg. = 96.57 kg.

= 96.57 kg. × 7 days

Re-order Level = 676kg. (approx.)

(iv) Minimum Consumption per Day of Raw Material 'MFM'

Average Consumption per day = 71.57 kg.

Since:

Average Consumption = (Min. consumption + Max. consumption) / 2

71.57 kg. = (Min. consumption + 96.57 kg.) / 2

Minimum Consumption = 143.14 kg. – 96.57 kg. = 46.57 kg.

6. (B) 1,154 kg

Re-order Quantity

= EOQ – 280 kg.

= 1,434 kg. – 280 kg.

Re-order Quantity = 1,154 kg.

7. (A) 1,690 kg

Maximum Stock Level

= Re-order level + Re-order Quantity – (Minimum consumption per day × Minimum lead time)

= 676 kg. + 1,154 kg. – (46.57 kg. × 3 days)

= 1,830 kg. – 139.71 kg.

Maximum Stock Level = 1,690 kg. (approx.)

8. (D) 318 kg

Minimum Stock Level

= Re-order level – (Average consumption per day × Average lead time)

Average lead time = (3+7)/2 = 5 days

= 676 kg. – (71.57 kg. × 5 days)

= 676 kg. – 357.85 kg.

Minimum Stock Level = 318 kg. (approx.)

9. (B) ₹ 24,95,063

Total Cost of Purchase of Raw Material if the company orders at ROQ

- Purchase Cost = 26,050 kg. × ₹ 95 = **₹ 24,74,750**

- No. of orders = 26,050 kg. ÷ 1,154 kg. = 22.57 → **23 orders**
- Ordering Cost = 23 orders × ₹ 540 = **₹ 12,420**
- Average Inventory = 1,154 kg. ÷ 2 = 577 kg.
- Carrying Cost = 577 kg. × ₹ 13.68 = **₹ 7,893**

Total Cost of Purchase = ₹ 24,74,750 + ₹ 12,420 + ₹ 7,893 = ₹ 24,95,063

10. (A) ₹ 244

Extra Annual Cost of ordering at ROQ instead of the true EOQ

	Particulars	When purchasing the ROQ	When purchasing the EOQ
I	Order quantity	1,154 kg.	1,434 kg.
II	No. of orders a year	26,050/1,154 = 22.57 → 23 orders	26,050/1,434 = 18.17 → 19 orders
III	Ordering Cost	23 orders × ₹ 540 = ₹ 12,420	19 orders × ₹ 540 = ₹ 10,260
IV	Average Inventory	1,154/2 = 577 kg.	1,434/2 = 717 kg.
V	Carrying Cost	577 kg. × ₹ 13.68 = ₹ 7,893	717 kg. × ₹ 13.68 = ₹ 9,809
VI	Total Cost	₹ 20,313	₹ 20,069

Extra Cost incurred due to not ordering EOQ = ₹ 20,313 – ₹ 20,069 = ₹ 244

11. (C) ₹ 240

Opportunity value of 1 kg of Material P:

Opportunity cost = Purchase Price of Material Q – Processing Cost of Material P

= ₹ 9 - ₹ 3 = ₹ 6 per kg

Relevant cost for 40 kg = 40 kg x ₹ 6 = ₹ 240

12. (C) 1,60,000 units

Raw material required for production:

= 50,000 × 3

= **1,50,000 units**

Raw material to be purchased

= Required for production + Closing stock – Opening stock

= 1,50,000 + 90,000 – 80,000

= **1,60,000 units**

13. (B) ₹ 1,27,500

Direct materials consumed	:	₹ 67,500
Direct labour	:	₹ 45,000
Direct expenses	:	₹ 15,000
Prime Cost		₹ 1,27,500

14.. (B) ₹ 8,800 under-absorbed

Actual Overhead – (Actual machine hours × machine hour rate)

5,20,000 – (17040 × 30) = ₹ 8,800 under absorbed

15. (B) ₹ 34,00,000

Variable overhead for each % of level of activity

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

Fixed cost = 30,00,000 – (40,000 × 50) = 10,00,000

Total overheads for 60% level of activity

= 10,00,000 + (40,000 × 60) = ₹ 34,00,000

Part II - Descriptive Questions

1. (a) (i) Annual Cost of Each Employee

	Particulars	₹
1.	Salary (₹ 28,000 × 12)	3,36,000
2.	Bonus (20% of Salary)	67,200
3.	Employer's Contribution to PF, ESI, etc. (12% of Salary)	40,320
4.	Employees' Welfare cost (₹ 5,28,000 / 220)	2,400
	Total Annual Cost	**4,45,920**

(ii) Employee Cost per Hour

Particulars	Hours
Effective Working hours (312 days × 8 hours)	2,496
Less: Leave days (24 days × 8 hours)	192
Available Working hours	**2,304**

Less: Normal Idle time	60
Net Working Hours	**2,244**

Employee cost = ₹ 4,45,920

Employee cost per hour = ₹ 4,45,920 / 2,244 hours = ₹ 198.72

Employee Cost per hour = ₹ 198.72

(iii) Cost of Abnormal Idle Time, per Employee

= 40 hours × ₹ 198.72 = ₹ 7,948.80

(iv) Overtime Premium per Employee

Normal hourly rate = ₹ 198.72 (employee cost per hour, as computed above)

Overtime is paid at double the normal hourly rate.

Particulars	₹
Overtime wages (100 hours × ₹ 198.72 × 2)	39,744.00
Less: Normal wages for those hours (100 hours × ₹ 198.72)	19,872.00
Overtime Premium	**19,872.00**

Treatment: The overtime premium of ₹ 19,872 should generally be charged to Costing Profit & Loss Account as an abnormal/separate cost (i.e., not included as part of normal employee cost) if the overtime arose due to a customer's specific rush order or abnormal circumstances. However, if overtime is a regular feature of production policy (e.g., to meet normal capacity shortfall), the premium is treated as part of normal employee cost and absorbed through the overhead/production cost of the related cost centre.

Since the question does not specify a customer-driven rush order, the overtime premium here is best treated as part of normal employee cost, to be recovered as a factory overhead rather than charged off entirely to Costing P&L.

(b) Cost Sheet

(for the quarter ending 31st March 2026)

		Amount (₹)
(i)	**Raw materials consumed**	
	Opening stock of raw materials	2,20,000

	Add: Purchase of materials*	11,05,500
	Less: Closing stock of raw materials	(1,95,000)
	Raw materials consumed	**11,30,500**
	Add: Direct wages (1,50,000 × 180%)	2,70,000
	Direct Expenses	1,65,000
(ii)	**Prime cost**	**15,65,500**
	Add: Factory overheads (2,70,000/180%)	1,50,000
	Gross Factory cost	17,15,500
	Add: Opening work-in-process	1,55,000
	Less: Closing work-in-process	(1,72,500)
(iii)	**Factory cost**	**16,98,000**
	Add: Administration overheads (8% of factory overheads)	12,000
	Add: Opening stock of finished goods	2,90,000
	Less: Closing stock of finished goods	(2,60,000)
(iv)	**Cost of goods sold**	**17,40,000**
	Add: Selling & distribution overheads	52,000
(v)	**Cost of sales**	**17,92,000**
Net Profit		**2,68,000**
Sales		20,60,000

***Purchase of raw materials** = (17,40,000 + 2,60,000 – 2,90,000 – (1,50,000 × 8%) + 1,72,500 – 1,55,000 – (2,70,000 × 100/180) – 1,65,000 – 2,70,000 + 1,95,000 – 2,20,000) = **₹ 11,05,500**

Working Notes

1. Purchase of raw materials = Raw material consumed + Closing stock – Opening stock of raw material
2. Raw material consumed = Prime cost – Direct wages – Direct expenses
3. Factory Overheads = 2,70,000 × 100/180 = ₹ 1,50,000
4. Prime cost = Factory cost + Closing WIP – Opening WIP – Factory overheads
5. Factory Cost = Cost of goods sold + Closing stock of Finished goods – Opening stock of finished goods – Administrative overheads
6. Net Profit = Sales – Cost of sales

(c) **(i)** Break-even sales = $\frac{\text{Fixed Cost}}{\text{P/V Ratio}}$

P/V Ratio = $\frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100$ or,

$$\frac{₹\ 37,50,000}{₹\ 7,80,60,000 - ₹\ 4,80,60,000} \times 100$$

Or, $\frac{₹37,50,000}{₹3,00,00,000} \times 100$ or, 12.5%

Break-even sales = $\frac{₹\ 28,50,000}{12.5\%}$ = ₹ 2,28,00,000

(ii) Profit/ loss = Contribution – Fixed Cost

= ₹ 12,00,00,000 × 12.5% - ₹ 28,50,000

= ₹ 1,50,00,000 – ₹ 28,50,000 = ₹ 1,21,50,000

(iii) To earn same amount of profit in 2025-26 as was in 2024-25, it has to earn the same amount of contribution as of 2024-25.

Sales – Variable cost = Contribution equal to 2024-25 contribution

Contribution in 2024-25 = Sales in 2024-25 × P/V Ratio in 2024-25

= ₹ 7,80,60,000 × 12.5% = ₹ 97,57,500

Let the Selling price be ₹100 in 2024-25, then the Variable cost would be ₹ 87.5 and Contribution would be ₹12.5.

(As Contribution is 12.5%, the Variable cost would be 87.5%.)

If there is 10% reduction in Selling price,

New Selling Price = ₹ 90

Variable cost = ₹ 87.5

So, Contribution = ₹ 2.5

New Contribution % = 2.77778% (2.5/90) ×100

Therefore, Sales volume required to earn a profit equals to 2024-25 profit

= ₹ 97,57,500/ 2.77778% = ~₹ 35,12,69,719.

2. (a) Job Cost Sheet for Job No. 707

Particulars	Amount (₹)	Amount (₹)
Direct Materials issued	45,000	
Less: Direct Materials returned to stores	(3,000)	
Direct Materials consumed		42,000
Direct Labour (250 hours × ₹ 80)		20,000
Direct Expenses		6,000
Prime Cost		68,000
Add: Factory Overhead (60% of Direct Labour cost)		12,000
Add: Rectification cost of defective work (normal):		
— Direct material	1,200	
— Direct labour (15 hours × ₹ 80)	1,200	2,400
(ii) Works Cost (Factory Cost)		82,400
Add: Administration Overhead (10% of Works Cost)		8,240
(iii) Cost of Production		90,640
Add: Selling & Distribution Overhead (8% of Cost of Production)		7,251.20
(iv) Total Cost		97,891.20
Add: Profit (20% of SP or 25% of Cost		24,472.80
Selling Price		1,22,364

Treatment of rectification cost: Since the defect is stated to be normal for this type of job (a recurring tolerance issue inherent to the work), the rectification cost (₹ 2,400) is charged directly to the job itself, by adding it to the Works Cost / Factory Cost of Job No. 707. It is treated as a normal manufacturing cost specific to this job, since the customer's job benefits from — and should bear the cost of — bringing the units up to the required specification.

(ii) Price to be quoted to the customer for Job No. 707 = ₹ 1,22,364

(iii) Treatment if the Defect Were Abnormal

If the defect had arisen due to an abnormal cause (e.g., a one-off machine malfunction, not expected to recur in the normal course of operations), the treatment would differ as follows:

- The rectification cost of ₹ 2,400 (direct material ₹ 1,200 + direct labour ₹ 1,200) would not be charged to Job No. 707 or included in its Works Cost.
- Instead, it would be treated as an abnormal loss and charged directly to the Costing Profit & Loss Account, since it represents an avoidable, non-recurring inefficiency rather than a cost the customer should bear.

(b) (i) Calculation of Net Operating Income per Flight

No. of passengers = 180 seats × 65% = 117

	(₹)	(₹)
Fare collection (117 passengers × ₹ 7,800)		9,12,600
Variable costs:		
Fuel	1,05,000	
Food (117 passengers × ₹ 140)	16,380	
Commission (6% of ₹ 9,12,600)	54,756	
Passenger tax (117 passengers × ₹ 150)	17,550	1,93,686
Contribution per flight		**7,18,914**
Fixed costs:		
Aircraft Lease	3,80,000	
Landing charges	78,000	
Ground handling and parking charges	45,000	5,03,000
Net income per flight		**2,15,914**

(ii) Evaluation of Proposal (Fare Reduction to ₹7,150 with 130 Passengers)

	(₹)	(₹)
Fare collection (130 passengers × ₹ 7,150)		9,29,500
Variable costs:		
Fuel	1,05,000	
Food (130 passengers × ₹ 140)	18,200	
Commission (6% of ₹ 9,29,500)	55,770	
Passenger tax (130 passengers × ₹ 150)	19,500	1,98,470
Contribution		**7,31,030**

There is an increase in contribution by ₹ 12,116 (i.e., ₹ 7,31,030 – ₹ 7,18,914). **Hence the proposal is acceptable.**

(iii) Calculation of Total Takings per Flight

Particulars	Amount (₹)
Total operating Cost (Variable cost excl. Passenger tax + Fixed cost)	
— Variable cost (excl. passenger tax) = 1,93,686 – 17,550	1,76,136
— Add: Fixed cost	5,03,000
Total Operating Cost	**6,79,136**
Add: Profit (Net income per flight)	2,15,914
Net Takings	**8,95,050**
Add: Passenger Tax	17,550
Total Takings	**9,12,600**

3. (a) (i) Overhead Absorption on Machine Hour Basis

Statement Showing "Total Cost of Products"

Particulars	X (₹)	Y (₹)	Z (₹)	W (₹)
Direct Material	50.00	55.00	45.00	60.00
Direct Labour	12.00	10.00	8.00	9.00
Overheads	79.94	55.96	39.97	23.98
Cost of Production per unit	141.94	120.96	92.97	92.98
Output in units	800	650	500	550
Total Cost	1,13,552.10	78,622.75	46,485.03	51,140.12

[8,350 Machine Hours = (800 × 5) + (650 × 3.5) + (500 × 2.5) + (550 × 1.5)]

Total Overheads = 75,000 + 25,000 + 18,000 + 12,000 + 3,500 = 133,500

Rate per hour = 133,500 ÷ 8,350 = ₹15.99 per hour

(Overheads per unit = Rate per hour × Machine hours per unit)

(ii) Activity Based Costing System

Statement Showing "Allocation of Machine Operation and Maintenance Cost"

Particulars	Setup (₹)	Receiving (₹)	Inspection (₹)
Machine Operation & Maintenance ₹ 75,000 to be distributed in ratio 5: 3: 2	37,500	22,500	15,000

Now add these apportioned amounts to the activity pools:

Activity Pool	Original Cost (₹)	Machine-op apportioned (₹)	Total Activity Cost (₹)
Setup	25,000	37,500	62,500
Store Receiving	18,000	22,500	40,500
Inspection	12,000	15,000	27,000
Material Handling & Dispatch	—	—	3,500

Statement Showing "Activities / Drivers / Cost"

Activity	Cost (₹)	Drivers	Nos	Cost per unit of Driver (₹)
Setup	62,500	Production Runs	100	625.00
Store Receiving	40,500	Requisitions Raised	240	168.75
Inspection	27,000	Production Runs	100	270.00
Material Handling and Disp.	3,500	Orders	250	14.00

Note:

Production run size = 25 units.

Production Runs:

X (800/25) = 32

Y (650/25) = 26

Z (500/25) = 20

W (550/25) = 22

(Total = 100)

Requisitions raised = 60 for each product (Total = 240)

Orders executed (batch = 10 units): X = 80; Y = 65; Z = 50; W = 55 (Total = 250)

Statement Showing "Total Cost of Products"

Particulars of Costs	X (₹)	Y (₹)	Z (₹)	W (₹)
Direct Material (Total)	40,000	35,750	22,500	33,000
Direct Labour (Total)	9,600	6,500	4,000	4,950
Setup (Runs × 625)	20,000	16,250	12,500	13,750
Store Receiving (60 × 168.75)	10,125	10,125	10,125	10,125
Inspection (Runs × 270)	8,640	7,020	5,400	5,940
Material Handling & Dispatch (Orders × 14)	1,120	910	700	770
Total Cost	89,485.00	76,555.00	55,225.00	68,535.00
Cost per unit	111.86	117.78	110.45	124.61

(iii)

Particulars	X (₹)	Y (₹)	Z (₹)	W (₹)
Cost per unit (Traditional) ...(a)	141.94	120.96	92.97	92.98
Cost per unit (ABC) .....(b)	111.86	117.78	110.45	124.61
Difference .....(b) – (a)	(30.08)	(3.18)	17.48	31.63

Comment: The activity-based costing system reallocates overheads to products according to the true cost drivers (setups, requisitions, inspections, orders) rather than solely by machine hours. Under ABC, products X and Y show lower unit costs compared with the machine-hour method (so they were over costed by the traditional method), while products Z and W show higher unit costs (they were under costed by the traditional method). This change can materially affect pricing and product-level profitability — especially for Z and W where ABC raises unit cost significantly.

(b) Memorandum Reconciliation Accounts

Dr. Cr.

Particulars	Amount (₹)	Particulars	Amount (₹)
To Net Loss as per Cost Accounts	48,700	By Administration overheads over recovered in Cost Accounts	65,000
To Factory overheads under absorbed in Cost Accounts	30,500	By Depreciation overcharged in Cost Accounts (₹ 2,70,000 – ₹ 2,25,000)	45,000
To Provision for Income tax	52,400	By Transfer fees in Financial Accounts	10,200
To Obsolescence loss	20,700	By Notional Rent of own premises	54,000
To Overvaluation of closing stock in Cost Accounts**	9,500	By Overvaluation of Opening stock in Cost Accounts*	23,000
To Net Profit (as per Financial Accounts)	35,400		
	1,97,200		1,97,200

* Overvaluation of Opening Stock as per Cost Accounts

= Value in Cost Accounts – Value in Financial Accounts

= ₹ 1,38,000 – ₹ 1,15,000 = ₹ 23,000.

** Overvaluation of Closing Stock as per Cost Accounts

= Value in Cost Accounts – Value in Financial Accounts

= ₹ 1,22,000 – ₹ 1,12,500 = ₹ 9,500.

4. (i) Material variances:

(a) Direct Material Cost Variance = Standard Cost – Actual Cost

= (Actual output × Std qty per unit × Std price) – (Actual qty used × Actual price)

= (51,200 units × 6 kg × ₹ 5.00) – (2,96,000 kg × ₹ 5.20)

= ₹ 15,36,000 – ₹ 15,39,200 = ₹ 3,200 (A)

(b) Material Price Variance = Actual Qty used × (Std Price – Actual Price)

= 2,96,000 kg × (₹ 5.00 – ₹ 5.20)

= 2,96,000 × (–₹ 0.20) = ₹ 59,200 (A)

(Material variances are calculated on the basis of consumption)

(c) Material Usage (Quantity) Variance = Std Price × (Std Qty for actual output – Actual Qty used)

= ₹ 5.00 × (51,200 × 6 – 2,96,000)

= ₹ 5.00 × (3,07,200 – 2,96,000)

= ₹ 5.00 × 11,200 = ₹ 56,000 (F)

(ii) Labour variances and Factory Overhead variance:

(a) Labour Cost Variance = Standard Cost – Actual Cost

= (Std hrs allowed for actual output × Std rate) – Actual labour cost

Std hrs allowed = 51,200 units × 2.5 hrs = 1,28,000 hrs

= (1,28,000 × ₹ 4.50) – ₹ 6,40,000

= ₹ 5,76,000 – ₹ 6,40,000 = ₹ 64,000 (A)

(b) Labour Rate Variance = Actual Hours × (Std Rate – Actual Rate)

Actual rate = Actual labour cost / Actual hours

= ₹ 6,40,000 / 1,25,000 = ₹ 5.12 / hr

= 1,25,000 × (₹ 4.50 – ₹ 5.12)

= 1,25,000 × (–₹ 0.62) = ₹ 77,500 (A)

(c) Labour Efficiency Variance = Std Rate × (Std Hours – Actual Hours)

= ₹ 4.50 × (128,000 – 125,000)

= ₹ 4.50 × 3,000 = ₹ 13,500 (F)

(d) Total Factory Overhead Variance = Factory Overhead Absorbed – Actual Factory Overhead

Factory overhead absorbed = Actual hours × Std FOH rate

= 1,25,000 × ₹ 2.00 = ₹ 2,50,000

Actual FOH incurred = ₹ 2,80,000

FOH variance = ₹ 2,50,000 – ₹ 2,80,000 = ₹ 30,000 (A)

(iii) Preparation of Income Statement

Calculation of unit selling price (markup 25% on selling price ⇒ Selling price = Cost ÷ 0.75)

Standard manufacturing cost per unit = ₹ 46.25 (given)

Selling price per unit = ₹ 46.25 ÷ 0.75 = ₹ 61.67

Income Statement

Particulars	Amount (₹)
Sales (50,000 units × ₹61.6667)	30,83,333
Less: Standard cost of goods sold (50,000 × ₹ 46.25)	23,12,500
Standard gross margin	7,70,833
Less: Adverse variances:	
Material Price variance	59,200
Labour Rate variance	77,500
Factory Overhead variance	30,000
Total Adverse variances	1,66,700
Add: Favourable variances:	
Material Usage variance	56,000
Labour Efficiency variance	13,500
Total Favourable variances	69,500
Actual gross margin = 7,70,833 – 1,66,700 + 69,500	6,73,633

(iv) Bonus under incentive scheme

Standard labour hours for actual output = 51,200 × 2.5 = 128,00 hrs

Actual labour hours worked = 125,000 hrs

Labour hours saved = 128,000 − 125,000 = 3,000 hrs

Bonus rate = 60% of standard direct labour rate per hour

= 60% × ₹ 4.50 = ₹2.70 / hr

Bonus payable = Hours saved × ₹2.70

= 3,000 × 2.70 = ₹8,100

5. (a) (i) Material Purchase Budget

(in quantities and value)

Particulars	Total
Material Consumption (Kg.)	
A (2,082 units × 6 kg = 12,492)	12,492
B (2,614 units × 2.5 kg = 6,535)	6,535
Total	19,027
Add: Closing Balance of Material (Kg.) (W.N. 3)	3,513
Less: Anticipated Opening Balance of Material (Kg.)	2,800
Total Quantity of Material (Kg.) to be purchased	19,740
Total Value of Material to be purchased (19,740 kg × ₹ 14)	₹ 2,76,360

(ii) Direct Workers Wages Budget

(Showing hours required and wages paid)

Particulars	Total
Standard Hours for Budgeted Production	
A (2,082 units × 6 hrs = 12,492)	12,492
B (2,614 units × 5 hrs = 13,070)	13,070
Total Standard Hours for Budgeted Production	25,562
Standard Hours for Budgeted Production at Targeted Efficiency Ratio (W.N. 4)	30,072.94
Add: Non-Productive Downtime (15% × 30,072.94 hours)	4,510.94
Total Labour Hours Required	34,583.88
Less: Normal Labour Hours (48 workers × 13 weeks × 5 days × 8 hours)	24,960
Difference (Overtime hours)	9,624
Wages for normal hours (24,960 hours × ₹ 9)	₹ 2,24,640.00
Overtime Wages (9,624 hrs × ₹ 14.40)	₹ 1,38,585.60
Total Wages	₹ 3,63,225.60

Working Notes:

1. Computation of Closing Stock Balance of Products A and B

   Budgeted Period of Sales (In days) = 13 weeks × 5 days = 65 days

Closing stock of Product A (Units) (18 days' sales)

$= \frac{2,100}{65} \times 18 = 582$ units

Closing stock of Product B (Units) (22 days' sales)

$= \frac{2,700}{65} \times 22 = 914$ units

2. Production Budget (Units)

Particulars	Product A	Product B
Sales in units (65 days)	2,100	2,700
Add: Closing Stock (W.N. 1)	582	914
Total	2,682	3,614
Less: Anticipated Opening Balance	600	1,000
Total Number of Units to be produced	2,082	2,614

3. Closing Balance of Material (Kg.)

Total material consumption for production = 12,492 kg (A) + 6,535 kg (B) = 19,027 kg

Daily consumption = $\frac{19,027}{65}$ = 292.72 kg/day

Closing stock of material (12 days consumption) = 292.72 × 12 = 3,513 kg (rounded up)

4. Standard Hours for Budgeted Production at targeted 85% efficiency ratio

Total standard hours for production = (2,082 × 6) + (2,614 × 5) = 25,562 hrs

Productive hours required = Standard hours ÷ Efficiency

$= \frac{25,562}{0.85}$ = 30,072.94 hrs

Non-productive downtime = 15% of productive hours = 0.15 × 30,072.94 = 4,510.94 hrs

Total labour hours required = 30,072.94 + 4,510.94 = 34,583.88 hrs

(b) Treatment is as follows:

(i) Credit for Recoveries: The realised or realisable value of scrap or waste is deducted as it reduces the cost of production.

(ii) Packing Cost (primary): Packing material which is essential to hold and preserve the product for its use by the customer is added in the factory cost.

(iii) Joint Products and By-Products: Joint costs are allocated between/among the products on a rational and consistent basis. In case of by-products, the net realisable value of by-products is deducted from the cost of production.

(iv) Quality Control Cost: It is added in the factory cost as this is the cost of resources consumed towards quality control procedures.

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) 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

OR

(c) Single and Multiple Overhead Rates: Single overhead rate: It is one single overhead absorption rate for the whole factory.

It may be computed as follows:

$$\text{Single overhead rate} = \frac{\text{Overhead costs for the entire factory}}{\text{Total quantity of the base selected}}$$

The base can be total output, total labour hours, total machine hours, etc.

The single overhead rate may be applied in factories which produces only one major product on a continuous basis. It may also be used in factories where the work performed in each department is fairly uniform and standardized.

Multiple overhead rate: It involves computation of separate rates for each production department, service department, cost center and each product for both fixed and variable overheads. It may be computed as follows:

Multiple overhead rate

$$= \frac{\text{Overhead allocated / appportioned to each department / cost centre or product}}{\text{Corresponding base}}$$

Under multiple overheads rate, jobs or products are charged with varying amount of factory overheads depending on the type and number of departments through which they pass. However, the number of overheads rate which a firm may compute would depend upon two opposing factors viz. the degree of accuracy desired and the clerical cost involved.