Mock Test Paper - Series II: December, 2024

Date of Paper: 12th December, 2024

Time of Paper: 2 P.M. to 5 P.M.

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Suggested Answers/ Solution

PART I – Case Scenario based MCQs

1. C Profit if no minimum charges are there, on absolute tonne basis, but he will charge for diesel petrol when running empty

Absolute tonne-kms: (250 kms x 4 tonnes + 150 kms x 3 tonnes) x 90 days

= 1,30,500 tonne-kms

Vacant moving (Chandigarh to Ludhiana) = 100kms x 90 days = 9,000 kms

Charges for vacant running:

	(₹)
June (80.30 x 16 x 100)/8	16,060
July (80.50 x 31 x 100) /8	31,194
August (81.25 x 29 x 100) /8	29,453
September (80.90 x 14 x 100) /8	14,158
Total Charges	**90,864**

	(₹)
Total revenue (1,30,500 x 10)	13,05,000
Add: diesel recovery for vacant running	90,864
Less: service & maintenance (80,000 x 3)	(2,40,000)
Less: salary (15,000 x 3)	(45,000)
Less: diesel cost	(4,54,323)
Less: interest	(22,578)
Less: depreciation	(36,986)
Profit	**5,96,977**

Bifurcation of principal and interest

Years	Calculation of interest (₹)	Interest (₹)	Principal repayment (₹)	Loan balance (₹)
0	-	-	-	20,00,000
1	20,00,000 x 10%	2,00,000	3,27,595	16,72,405
2	16,72,405 x 10%	1,67,241	3,60,354	13,12,051
3	13,12,051 x 10%	1,31,205	3,96,390	9,15,661
4	9,15,661 x 10%	91,566	4,36,029	4,79,632
5	4,79,632 x 10%	47,963	4,79,632	-

Interest allocated to this job = 91,566 x 90 / 365 = 22,578

Depreciation = $\frac{20,00,000-5,00,000}{10} x \frac{90}{365}$ = 36,986

Diesel expenses:

	(₹)
June (80.30 x 16 x 500)/8	80,300
July (80.50 x 31 x 500)/8	1,55,969
August (81.25 x 29 x 500)/8	1,47,266
September (80.90 x 14 x 500)/8	70,788
Total diesel expenses	**4,54,322**

2. A

	With minimum limit (₹)	Without minimum limit (₹)
Commercial tonne kms	3.75 x 500 x 90 = 1,68,750	((4+0+3)/3) x 500 x 90 = 1,05,000
revenue	1,68,750 x 10 = 16,87,500	1,05,000 x 10 = 10,50,000
Less: costs	(7,98,887)	(7,98,887)
Profit/(loss)	8,88,613	2,51,113

Loss arising due to no minimum limit = 8,88,613-2,51,113 = 6,37,500

3. B **Total Revenue = Cost + Profit =** 7,98,887+ 2,70,000 = ₹ 10,68,887

Absolute Tonne-Kms = 1,74,375

Rate = 10,68,887/1,74,375 = ₹ 6.13

4. B

5. B Profit at current rate (based on minimum charges of 75%)

Absolute tonne-kms: (250 kms x 4 tonnes + 100 kms x 3.75 tonnes + 150 kms x 3.75 tonnes) x 90 days = 1,74,375 tonne-kms

	(₹)
Total revenue (1,74,375 x 10)	17,43,750
Less: service & maintenance (80,000 x 3)	(2,40,000)
Less: salary (15,000 x 3)	(45,000)
Less: diesel cost	(4,54,323)
Less: interest	(22,578)
Less: depreciation	(36,986)
Profit	**9,44,863**

6. C

Particulars	Base Material	Conversion cost
Previous year cost (₹)	5,34,000	8,01,000
Increased by	2 times	-
Increased to		3 times
Current year cost (₹)	5,34,000 + (5,34,000 x 2) = 16,02,000	8,01,000 x 3 = 24,03,000

7. D

Products	Production/ Sales(in tonne)	Joint Cost Apportioned (₹)
Sodium hydroxide	24,030	24,03,000
Halogen	16,020	16,02,000
Total	**40,050**	**40,05,000**

Joint cost = base material + conversion cost

= 16,02,000 + 24,03,000

= 40,05,000

Apportioned joint cost = $\frac{\text{Total joint cost}}{\text{Total physical value}}$ x Physical units of each product

For Sodium hydroxide = $\frac{₹\ 40,05,000}{40,050\ \text{tonnes}}$ x 24,030 tonnes

= ₹ 24,03,000

For Halogen = $\frac{₹\ 40,05,000}{40,050\ \text{tonnes}}$ x 16,020 tonnes

= ₹ 16,02,000

8. A

Products	Sales (in Tonne)	Selling Price per Tonne (₹)	Sales Revenue (₹)	Joint Cost Apportioned (₹)
Sodium hydroxide	24,030	100	24,03,000	20,02,500
Halogen	16,020	150	24,03,000	20,02,500
Total	**40,050**		**48,06,000**	**40,05,000**

Apportioned joint cost = $\frac{\text{Total joint cost}}{\text{Total sale revenue}}$ x Sale revenue of each product

For Sodium hydroxide = $\frac{₹\ 40,05,000}{₹\ 48,06,000}$ x 24,03,000 = ₹ 20,02,500

For Halogen = $\frac{₹\ 40,05,000}{₹\ 48,06,000}$ x 24,03,000 = ₹ 20,02,500

9. B

Products	Sales (in Tonne)	Selling Price per Tonne (₹)	Sales Value (₹)	Post split-off cost (₹)	Net Realisable Value (₹)	Joint Cost Apportioned (₹)
Sodium hydroxide	24,030	100	24,03,000	-	24,03,000	17,16,429
Halogen (Vinyl after further processing)	10,012.50	150 + 250 = 400	40,05,000	8,01,000	32,04,000	22,88,571
Total					**56,07,000**	**40,05,000**

Apportioned joint cost = $\frac{\text{Total joint cost}}{\text{Total Net Realisable Value}}$ x Net Realisable Value of each product

For Sodium hydroxide = $\frac{₹\ 40,05,000}{₹\ 56,07,000}$ x 24,03,000

= ₹ 17,16,429

For Halogen = $\frac{₹\ 40,05,000}{₹\ 56,07,000}$ x 32,04,000

= ₹ 22,88,571

10. C

Particulars	Amount (in ₹)
Revenue from sales of Vinyl if Halogen further processed (10,012.50 tonnes × ₹ 400) (A)	40,05,000
Revenue from sales of Halogen if no further processing done (16,020 tonnes × ₹ 150)(B)	24,03,000
Incremental revenue from further processing of Halogen into Vinyl (A-B)	**16,02,000**
Incremental cost of further processing Halogen into Vinyl	8,01,000
Incremental operating income from further processing	**8,01,000**

Incremental revenue would be ₹ 8,01,000, thus the decision relating to further processing Halogen needs to be approved.

11. C Let X be the cost of material and Y be the normal rate of wages per hour.

Factory Cost of Mr. Akon (Rowan System) = $X + 45Y + \frac{45}{75} \times (75 - 45)\ Y +$ (45 x ₹ 120)

₹ 1,25,640 = X + 63Y + ₹ 5,400

X + 63Y = ₹ 1,20,240 … (i)

Factory Cost of Mr. Ben (Halsey System) = X + 60Y + 50% (75 - 60) Y + (60 x ₹ 120)

₹ 1,29,600 = X + 67.5Y + ₹ 7,200

X + 67.5Y = ₹ 1,22,400 … (ii)

From subtracting (i) from (ii), we get,

4.5Y = ₹ 2,160

Y = ₹ 480 per hour

Or, **normal wage rate = ₹ 480 per hour**

Therefore, X = ₹ 1,20,240 - 63Y

X = ₹ 1,20,240 - (63 x ₹ 480)

X = ₹ 90,000

Or, **cost of material = ₹ 90,000**

12. C

13. D Sales for current year = 3 x $\left(\frac{62,00,000 + 50,00,000 + 52,00,000 + 44,00,000}{4}\right)$

= ₹ 1,56,00,000

P/V ratio = $\frac{\text{Sales - Variable Cost}}{\text{Sales}}$

= $\frac{₹\ 1,56,00,000 - 93,60,000}{₹\ 1,56,00,000}$

= 40%

Now, Break even point = $\frac{\text{Fixed Cost}}{\text{P/V ratio}}$

Therefore, **Fixed Cost** = Break even point x P/V ratio

= ₹ 1,17,00,000 x 40%

= ₹ 46,80,000

14. C Annual demand = 9,000 x 12 = 1,08,000

Economic Batch Quantity (EBQ):

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

$$= \sqrt{\frac{2 \times 1,08,000 \times 16,002.25}{60}}$$

= 7,590 bushings

Number of runs = $\frac{1,08,000}{7,590}$ = 14.23 = **15 runs**

15. C Fixed Overhead Cost Variance = Absorbed Fixed Overheads - Actual Fixed Overheads

0 = $\left(\frac{₹\ 75,00,000}{15,000} \times 15,600\right)$ - Actual Fixed Overheads

Actual Fixed Overheads = ₹ 78,00,000

PART-II Descriptive Questions

1. (a) (i) Variable overhead absorption rate: $= \frac{\text{Difference in Total Overheads}}{\text{Difference in levels in terms of machine hours}}$

$= \frac{₹3,47,625 - ₹3,38,875}{15,500\ \text{hours} - 14,500\ \text{hours}}$ = ₹ 8.75 per machine hour.

(ii) Calculation of Total fixed overheads:

	(₹)
Total overheads at 14,500 hours	3,38,875
Variable overheads = ₹ 8.75 × 14,500	1,26,875
Total fixed overheads	2,12,000

(iii) Calculation of Budgeted level of activity in machine hours:

Let budgeted level of activity = X

Then, $\frac{(₹\,8.75\,X + ₹\,2,12,000)}{X} = ₹\ 22$

8.75X + ₹ 2,12,000 = 22X

13.25X = 2,12,000

X =16,000

Thus, budgeted level of activity = 16,000 machine hours.

(iv) Calculation of Under / Over absorption of overheads:

	(₹)
Actual overheads	3,22,000
Absorbed overheads = 14,970 hours × ₹ 22 per hour	3,29,340
Over-absorption (3,29,340 – 3,22,000)	7,340

(v) Departmental absorption rates provide costs which are more precise than those provided by the use of blanket absorption rates. Departmental absorption rates facilitate variance analysis and cost control. The application of these rates makes the task of stock and work-in-process (WIP) valuation easier and more precise. However, the setting up and monitoring of these rates can be time-consuming and expensive.

(b) For Material Cost Variances:

	SQ × SP	**AQ × AP**	**AQ × SP**
X	12,000 x 4 x ₹ 8 = ₹ 3,84,000	50,000 x ₹ 8.80 = ₹ 4,40,000	50,000 x ₹ 8 = ₹ 4,00,000
Y	12,000 x 6 x ₹ 6 = ₹ 4,32,000	72,000 x ₹ 5.60 = ₹ 4,03,200	72,000 x ₹ 6 = ₹ 4,32,000
Z	12,000 x 30 x ₹ 2 = ₹ 7,20,000	3,54,000 x ₹ 2.40 = ₹ 8,49,600	3,54,000 x ₹ 2 = ₹ 7,08,000
Total	₹ 15,36,000	₹ 16,92,800	₹ 15,40,000

Material Price Variance = Actual quantity (Std. price – Actual price)

= (AQ x SP) – (AQ x AP)

= ₹ 15,40,000 – ₹ 16,92,800

= ₹ 1,52,800 (A)

Material Usage Variance = Standard Price (Std. Quantity – Actual Quantity)

= (SP x SQ) – (SP x AQ)

= ₹ 15,36,000 – ₹ 15,40,000

= ₹ 4,000 (A)

For Labour Cost Variance:

	SH × SR	AH × AR	AH × SR
Labour	(12,000 x 6) x ₹ 16 = ₹ 11,52,000	10,000 x ₹ 24 = ₹ 2,40,000 60,000 x ₹ 16 = ₹ 9,60,000	70,000 x ₹ 16 = ₹ 11,20,000
Total	₹ 11,52,000	₹ 12,00,000	₹ 11,20,000

Labour Rate Variance = Actual Hours (Std. Rate – Actual Rate)

= (AH x SR) – (AH x AR)

= ₹ 11,20,000 – ₹ 12,00,000

= ₹ 80,000 (A)

Labour Efficiency Variance = Standard Rate (Std. Hours – Actual Hours)

= (SR x SH) – (SR x AH)

= ₹ 11,52,000 – ₹ 11,20,000

= ₹ 32,000 (F)

(c) Production during the month 1,250 units

Time allowed for 1,250 units @ 2 hours per unit (1,250 x 2 hours) 2,500 hours

Actual time taken 25 days x 8 hours x 10 workers 2,000 hours

Time saved 500 hours

Labour cost per piece under time rate scheme: 2 hours x ₹ 2 = ₹ 4

Calculation of effective hourly rate under:

Halsey Scheme:

(₹)

Basic wages of 10 workers: 2,000 hours @ ₹ 2 per hour	4,000
Bonus 50% x (500 hours x ₹ 2)	500
Total wages for 2,000 hours	4,500

Effective hourly rate of earning = $\frac{₹\,4,500}{2,000\,\text{hours}}$ = ₹ 2.25

Labour cost per piece = $\frac{₹\,4,500}{1,250\,\text{units}}$ = ₹ 3.60

Saving in terms of direct labour cost per piece (₹ 4.00 – ₹ 3.60) = ₹ 0.40

Rowan Scheme:

	(₹)
Basic wages (as calculated under Halsey scheme)	4,000
Bonus: $500\,\text{hours} \times \frac{2,000\,\text{hours}}{2,500\,\text{hours}} \times ₹\,2$	800
Total wages for 2,000 hours	4,800

Effective hourly rate of earnings $\frac{₹\,4,800}{2,000\,\text{hours}}$ = ₹ 2.40

Labour cost per piece $\frac{₹\,4,800}{1,250\,\text{units}}$ = ₹ 3.84

Saving in terms of direct labour cost per piece (₹ 4.00 – ₹ 3.84) = ₹ 0.16

Advise: Shivi should introduce Halsey incentive scheme, as it gives more saving than the Rowan incentive scheme.

2. (a) (a) Cost and Quoted Price Using Labour Hours to Absorb Overheads

		RBC (₹ in lakhs)	IPC (₹ in lakhs)
Materials		5.00	12.00
Labour	1200 x ₹ 100; 2500 x ₹ 100	1.20	2.50
Overheads	1200 x ₹ 1200; 2500 x ₹ 1200	14.40	30.00
Total cost		20.60	44.50
Add: Profit	50% of Total Cost	10.30	22.25
Quoted Price		**30.90**	**66.75**

(b) Cost and Quoted Price Using ABC

Step 1: Calculate Overhead Rates for Each Activity

Overhead Category	Total Overhead (₹ Lakhs)	Activity Driver	Activity Rate
Site Engineers	₹120	Site Visits	₹ 120 / 600 = ₹ 20,000 per site visit
Project Planners	₹80	Planning Documents	₹ 80 / 300 = ₹ 26,667 per planning document
Equipment Depreciation	₹400	Labour Hours	₹ 400 / 50,000 = ₹ 800 per labour hour

Step 2: Allocate Overheads Using ABC

		RBC (in lakhs)	IPC (in lakhs)
Materials		5.00	12.00
Labour	1200 x ₹100; 2500 x ₹100	1.20	2.50
Overheads			
Site Engineers	2 x ₹ 20,000; 10 x ₹ 20,000	0.40	2.00
Project Planners	2 x ₹ 26,667; 8 x ₹ 26,667	0.53	2.13
Equipment Depreciation	1200 x ₹ 800; 2500 x ₹ 800	9.60	20.00
Total cost		16.73	38.63
Add: Profit	50% of Total Cost	8.37	19.32
Quoted Price		**25.10**	**57.95**

(c) Possible pricing strategies for the two services offered by XYZ Constructions

- The pricing policy is a matter for XYZ Constructions to decide. They could elect to maintain the current 50% mark-up on cost and if they did the price of the RBC would fall by around 7% in line with the costs. This should make them more competitive in the market.
- They could also reduce the prices by a little less than 7% (say 5%) in order to increase internal margins a little.

Reasons other than high prices for the current poor sales of RBC:

- If the quality of work or the reputation and reliability of the builder are questionable, lowering prices is unlikely to boost sales.

While it is possible that XYZ Constructions has a strong reputation for IPC but not for RBC, it is more likely that a poor reputation would impact all their products. Poor service or inflexibility in meeting customer needs may also hurt sales and can't be fixed by lowering prices.

- Poor marketing strategies also discourage customers from selecting XYZ Constructions.
- XYZ Constructions faces competition and may need to adopt a more competitive pricing strategy, such as 'going rate pricing,' instead of simply adding a markup to costs.
- XYZ Constructions could enter the market by pricing some projects competitively to establish a foothold. Completed projects could then be leveraged to attract new customers.

(b) The crux of standard costing lies in variance analysis. Standard costing is the technique whereby standard costs are predetermined and subsequently compared with the recorded actual costs. It is a technique of cost ascertainment and cost control. It establishes predetermined estimates of the cost of products and services based on management's standards of efficient operation. It thus lays emphasis on "what the cost should be". These should be costs are when compared with the actual costs. The difference between standard cost and actual cost of actual output is defined as the variance.

The variance in other words in the difference between the actual performance and the standard performance. The calculations of variances are simple. A variance may be favourable or unfavourable. If the actual cost is less than the standard cost, the variance is favourable but if the actual cost is more than the standard cost, the variance will be unfavourable. They are easily expressible and do not provide detailed analysis to enable management of exercise control over them. It is not enough to know the figures of these variances from month to month. We in fact are required to trace their origin and causes of occurrence for taking necessary remedial steps to reduce / eliminate them.

A detailed probe into the variance particularly the controllable variances helps the management to ascertain:

(i) the amount of variance

(ii) the factors or causes of their occurrence

(iii) the responsibility to be laid on executives and departments and

(iv) corrective actions which should be taken to obviate or reduce the variances.

Mere calculation and analysis of variances is of no use. The success of variance analysis depends upon how quickly and effectively the corrective actions can be taken on the analysed variances. In fact variance gives information. The manager needs to act on the information provided for taking corrective action. Information is the means and action taken on it is the end. In other words, the calculation of variances in standard costing is not an end in itself, but a means to an end.

3. (a) Dr. **Process A Account** 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

Dr. **Process B Account** 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 Administration cost:

Particulars	Amount (₹)
Salary paid to office staffs	8,20,000
Fees paid to auditors	92,000
Vehicle hire charges paid for directors attending general meeting	10,200
Fees paid to independent directors	1,02,000
	10,24,200

(ii) Calculation of Selling cost:

Particulars	Amount (₹)
Salary paid to sales manager	8,00,000
Wages paid to workers engaged in storing goods at sales depot	7,200
Travelling allowance paid to sales staffs	9,600
Electricity bill paid for sales office	1,800
Bonus paid to sales staffs for achieving targets	96,000
	9,14,600

(iii) Calculation of Distribution cost:

Particulars	Amount (₹)
Cost paid for secondary packing	8,200
Depreciation on goods delivery vehicles	13,000
	21,200

(c) Statement showing computation of the cost of processing an education loan application

Particulars	(₹)
Salary paid to the education loan processors	21,60,000
Legal advice cost relating to education loan	11,000
Overhead cost (30% of (₹ 16,40,000 - ₹ 11,000)]	4,88,700
Total processing cost per month	26,59,700
No. of applications processed per month	500
Total processing cost per education loan application	**5,319.40**

4. (a) (i) Re-ordering level = Maximum usage per period × Maximum lead time

(ROL) = 2,000 units per day × 20 days

= 40,000 units

(ii) Maximum level= ROL+ROQ–[Min. rate of consumption× Min. lead time] (Refer to working notes 1 and 2)

= 40,000 units + 20,000 units – [1,000 units per day x 10 days]

= 50,000 units

(iii) Minimum level = ROL – Average rate of consumption × Average re-order-period

= 40,000 units – (1,500 units per day × 15 days)

= 17,500 units

(iv) Danger level = Average consumption × Lead time for emergency purchases

= 1,500 units per day × 3 days

= 4,500 units

Working Notes:

1. Minimum rate of consumption per day

Average rate of consumption = $\left(\frac{\text{Minimum rate of consumption + Maximum rate of consumption}}{2}\right)$

1,500 units per day = $\left(\frac{\text{X units per day + 2,000 units per day}}{2}\right)$

Or, X = 1,000 units per day

2. Re-order Quantity (ROQ) = $\sqrt{\frac{2 \times 12,50,000 \text{units} \times ₹10,000}{62.50}}$

= 20,000 units

(b) Causes/examples of normal idle time:

1. The time lost between factory gate and the place of work.
2. The interval between one job and another.
3. The setting up time for the machine.
4. Normal rest time, **break for lunch etc.**

Causes/examples of abnormal idle time:

1. Lack of coordination.
2. Power failure, Breakdown of machines.
3. Non-availability of raw materials, strikes, lockouts, poor supervision, fire, flood etc.

(c) Statement of Reconciliation

(to ascertain Profit as per Financial Accounts)

Particulars	**(₹)**	**(₹)**
Profit as per Cost Account		7,77,150
Add: Income from interest and dividends		2,35,500
		10,12,650
Less: Factory expenses under-charged in Cost Accounts	2,35,500	
Administrative expenses under-charged in Cost Accounts	1,17,750	
Selling & distribution expenses under-charged in Cost Accounts	31,400	(3,84,650)
Profit as per Financial Accounts		**6,28,000**

5. (a) (i) Computation of Sale Price *Per Bottle*

Output: 40,000 Bottles

	(₹)
Variable Cost:	
Material	3,15,000
Labour (₹ 1,40,000 × 75%)	1,05,000
Factory Overheads (₹ 1,35,000 × 50%)	67,500
Administrative Overheads (₹ 50,000 × 35%)	17,500
Commission (10% on ₹ 8,00,000) (W.N.-1)	80,000
Fixed Cost:	
Labour (₹ 1,40,000 × 25%)	35,000
Factory Overheads (₹ 1,35,000 × 50%)	67,500
Administrative Overheads (₹ 50,000 × 65%)	32,500
Total Cost	7,20,000
Profit (W.N.-1)	80,000
Sales Proceeds (W.N.-1)	8,00,000
Sales Price per bottle $\left(\frac{₹\ 8,00,000}{40,000 Bottles}\right)$	20

(ii) Calculation of Break-even Point

Sales Price per Bottle = ₹19

Variable Cost per Bottle = $\frac{`\ 5,85,000\ (W.N.-2)}{40,000\ Bottles}$

= ₹ 14.625

Contribution per Bottle = ₹ 19 − ₹14.625

= ₹ 4.375

Break -even Point

(in number of Bottles) = $\frac{\text{Fixed Costs}}{\text{Contribution per Bottle}}$

= $\frac{₹1,35,000}{₹\ 4.375}$ = 30,857 Bottles

Break- even Point

(in Sales Value) = 30,857 Bottles × ₹ 19

= ₹ 5,86,285/-

Working Note

W.N.-1

Let the Sales Price be 'x'

Commission = $\frac{10x}{100}$

Profit = $\frac{10x}{100}$

x = $6,40,000 + \frac{10x}{100} + \frac{10x}{100}$

100x - 10x - 10x = 6,40,00,000

80x = 6,40,00,000

x = 6,40,00,000 / 80

= ₹ 8,00,000

W.N.-2

Total Variable Cost

	(₹)
Material	3,15,000
Labour	1,05,000
Factory Overheads	67,500
Administrative Overheads	17,500
Commission [(40,000 Bottles x ₹20) x 10%]	80,000
Total	5,85,000

(b) Number of days in budget period = 4 weeks × 5 days = 20 days

Number of units to be produced

	Product-A (units)	Product-B (units)
Budgeted Sales	2,400	3,600
Add: Closing stock	480 $\left(\frac{2,400\ \text{units}}{20\ \text{days}} \times 4\ \text{days}\right)$	900 $\left(\frac{3,600\ \text{units}}{20\ \text{days}} \times 5\ \text{days}\right)$
Less: Opening stock	(400)	(200)
	2,480	4,300

(i) Material Purchase Budget

	Material-X (Kg.)	Material-Y (Kg.)
Material required:		
- Product-A	12,400 (2,480 units × 5 kg.)	9,920 (2,480 units × 4 kg.)
- Product-B	12,900 (4,300 units × 3 kg.)	25,800 (4,300 units × 6 kg.)
	25,300	35,720
Add: Closing stock	12,650 $\left(\frac{25,300\text{kgs.}}{20\text{days}} \times 10\text{days}\right)$	10,716 $\left(\frac{35,720\text{kgs.}}{20\text{days}} \times 6\text{days}\right)$
Less: Opening stock	(1,000)	(500)
Quantity to be purchased	36,950	45,936
Rate per kg. of Material	₹ 4	₹ 6
Total Cost	₹ 1,47,800	₹ 2,75,616

(ii) Wages Budget

	Product-A (Hours)	Product-B (Hours)
Units to be produced	2,480 units	4,300 units
Standard hours allowed per unit	3	5
Total Standard Hours allowed	7,440	21,500
Productive hours required for production	$\frac{7,440\text{hours}}{80\%} = 9,300$	$\frac{21,500\text{hours}}{80\%} = 26,875$
Add: Non-Productive down time	1,860 hours. (20% of 9,300 hours)	5,375 hours. (20% of 26,875 hours)
Hours to be paid	11,160	32,250

Total Hours to be paid	= 43,410 hours (11,160 + 32,250)
Hours to be paid at normal rate	= 4 weeks × 40 hours × 180 workers = 28,800 hours
Hours to be paid at premium rate	= 43,410 hours – 28,800 hours = 14,610 hours
Total wages to be paid	= 28,800 hours × ₹ 25 + 14,610 hours × ₹ 37.5 = ₹ 7,20,000 + ₹ 5,47,875 = ₹ 12,67,875

6. (a) Before installation of a system of cost accounting in a manufacturing organisation the under mentioned factors should be studied:

(a) Objective: The objective of costing system, for example whether it is being introduced for fixing prices or for insisting a system of cost control.

(b) Nature of Business or Industry: The Industry in which business is operating. Every business industry has its own peculiar feature and costing objectives. According to its cost information requirement cost accounting methods are followed. For example Indian Oil Corporation Ltd. has to maintain process wise cost accounts to find out cost incurred on a particular process say in crude refinement process etc.

(c) Organisational Hierarchy: Costing system should fulfill the requirement of different level of management. Top management is concerned with the corporate strategy, strategic level management is concerned with marketing strategy, product diversification, product pricing etc. Operational level management needs the information on standard quantity to be consumed, report on idle time etc.

(d) Knowing the product: Nature of product determines the type of costing system to be implemented. The product which has by-products requires costing system which account for by-products as well. In case of perishable or short self- life, marginal costing method is required to know the contribution and minimum price at which it can be sold.

(e) Knowing the production process: A good costing system can never be established without the complete knowledge of the production process. Cost apportionment can be done on the most appropriate and scientific basis if a cost accountant can identify degree of effort or resources consumed in a particular process. This also includes some basic technical know-how and process peculiarity.

(f) Information synchronisation: Establishment of a department or a system requires substantial amount of organisational resources. While drafting a costing system, information needs of various other departments should be taken into account. For example in a typical business organisation accounts department needs to submit monthly stock statement to its lender bank, quantity wise stock details at the time filing returns to tax authorities etc.

(g) Method of maintenance of cost records: The manner in which Cost and Financial accounts could be inter-locked into a single integral accounting system and in which results of separate sets of accounts, cost and financial, could be reconciled by means of control accounts.

(h) **Statutory compliances and audit**: Records are to be maintained to comply with statutory requirements, standards to be followed (Cost Accounting Standards and Accounting Standards).

(i) **Information Attributes**: Information generated from the Costing system should be possess all the attributes of an information i.e. complete, accurate, timeliness, confidentiality etc. This also meets the requirements of management information system.

(b) The following steps are necessary for establishing a good budgetary control system:

1. Determining the objectives to be achieved, over the budget period, and the policy or policies that might be adopted for the achievement of these objectives.
2. Determining the activities that should be undertaken for the achievement of the objectives.
3. Drawing up a plan or a scheme of operation in respect of each class of activity, in quantitative as well as monetary terms for the budget period.
4. Laying out a system of comparison of actual performance by each person, or department with the relevant budget and determination of causes for the variation, if any.
5. Ensuring that corrective action will be taken where the plan has not been achieved and, if that is not possible, for the revision of the plan.

(c) 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 deteriorate in value.

(ii) Diversify production to use up such materials.

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

OR

(c) The three main methods of allocating support departments costs to operating departments are:

(i) ***Direct re-distribution method:*** Under this method, support department costs are directly apportioned to various production departments only. This method does not consider the service provided by one support department to another support department.

(ii) ***Step method:*** Under this method the cost of the support departments that serves the maximum numbers of departments is first apportioned to other support departments and production departments. After this the cost of support department serving the next largest number of departments is apportioned. In this manner we finally arrive on the cost of production departments only.

(iii) ***Reciprocal service method:*** This method recognises the fact that where there are two or more support departments they may render services to each other and, therefore, these inter-departmental services are to be given due weight while re-distributing the expenses of the support departments. The methods available for dealing with reciprocal services are:

(a) Simultaneous equation method

(b) Repeated distribution method

(c) Trial and error method.