(GI-1, GI-2, GI-3, VI-1, SI-1, VDI-1)

DATE: 30.06.2021 MAXIMUM MARKS: 100 TIMING: 3¼ Hours

PAPER : COSTING

Answer to questions are to be given only in English except in the case of candidates who have opted for Hindi Medium. If a candidate who has not opted for Hindi Medium. His/her answer in Hindi will not be valued.
Question No. 1 is compulsory.
Candidates are also required to answer any Four questions from the remaining Five Questions.
In case, any candidate answers extra question(s)/sub-question(s) over and above the required number, then only the requisite number of questions first answered in the answer book shall be valued and subsequent extra question(s) answered shall be ignored.
Wherever necessary, suitable assumptions may be made and disclosed by way of note.

Answer 1:

(a) (i) **Calculation of Overhead Recovery Rate :**

$$\text{Factory Overhead Recovery Rate} = \frac{\text{Factory Overhead in 2019 – 20}}{\text{Direct Labour Costs in 2019 – 20}} \times 100$$

$$= \frac{\text{Rs. } 30,80,000}{\text{Rs. } 90,50,000} \times 100 = 34\% \text{ of Direct labour} \quad \}\{1\text{ M}\}$$

$$\text{Administrative Overhead Recovery Rate} = \frac{\text{Administrative Overhead in 2019 – 20}}{\text{Factory Costs in 2019 – 20}}$$

$$= \frac{\text{Rs. } 20,50,400}{\text{Rs. } 2,96,80,000} \times 100 = 6.91\% \text{ of Factory Cost} \quad \}\{1\text{ M}\}$$

Working Note:
Calculation of Factory Cost in 2019-20

Particulars	Amount (Rs.)
Opening Stock of Material	15,00,000
Add: Purchase of Material	1,80,50,000
Less: Closing Stock of Material	(20,00,000)
Material Consumed	1,75,50,000
Direct Labour	90,50,000
Prime Cost	2,66,00,000
Factory Overhead	30,80,000
Factory Cost	**2,96,80,000**

(bold ¾ M)

(ii) **Job Cost Sheet for the order received in 2020-21**

Particulars	Amount (Rs.)
Material	**80,00,000**
Labour	**40,50,000**
Factory Overhead (34% of Rs. 40,50,000)	**13,77,000**
Factory Cost	**1,34,27,000**
Administrative Overhead (6.91% of Rs. 1,34,27,000)	**9,27,806**
Cost of delivery	**4,50,000**
Total Cost	**1,48,04,806**
Add: Profit @ 25% of Sales or 33.33% of cost	**49,34,935**
Sales value (Price to be quoted for the order)	**1,97,39,741**

Hence the price to be quoted is Rs. 1,97,39,741. **(bold ¼ each)**

Answer:

(b) Statement Showing Profit on Sale of 90,000 units

	(Rs.)	(Rs.)
Selling Price per unit		**80**
Less: Variable Cost per unit		
Material	**32**	
Conversion Cost	**24**	
Dealers' Margin	**8**	**64**
Contribution per unit		**16**
Total Contribution (90,000 units × Rs. 16)		**14,40,000**
Less: Fixed Cost		**10,00,000**
Profit		**4,40,000**

(bold ¼ each)

In both the proposed suggestions, the fixed costs remain unchanged. Therefore, the present profit of Rs. 4,40,000 can be maintained by maintaining the total contribution at the present level i.e. Rs. 14,40,000.

(i)	Reducing Selling Price by 5 %.		
	New Selling Price (Rs. 80 – 5% of Rs. 80)	=	**Rs. 76**
	New Dealer's Margin (10% of Rs. 76)	=	**Rs. 7.60**
	New Variable Cost (Rs. 32 + Rs. 24 + Rs. 7.60)	=	**Rs. 63.60**
	New Contribution per unit (Rs. 76 – Rs. 63.60)	=	**Rs. 12.40**
	Level of Sales required for present level of Profits	=	$\frac{\text{Total Contribution Required}}{\text{New Contribution per unit}}$
		=	$\frac{Rs.\ 14,40,000}{Rs.\ 12.40}$
		=	**1,16,129 units**
(ii)	Increasing Dealer's Margin by 20%.		
	New Dealer's Margin after increasing it by 20%	=	**Rs. 8 + (20% of Rs. 8)**
		=	**Rs. 9.60**
	New Variable Cost (Rs. 32 + Rs. 24 + Rs. 9.60)	=	**Rs. 65.60**
	Contribution (Rs. 80 – Rs. 65.60)	=	**Rs. 14.40**
	Level of sales required for present level of Profits	=	$\frac{\text{Total Contribution Required}}{\text{New Contribution per unit}}$
		=	$\frac{Rs.\ 14,40,000}{Rs.\ 14.40}$
		=	**1,00,000 units**

(bold ¼ each)

Conclusion:

The second proposal, *i.e.,* increasing the Dealer's Margin, is recommended because:

1. The contribution *per unit* is higher which is Rs. 14.40 in comparison to Rs. 12.40 in the first proposal; and **}(1/8 M)**
2. The sales (in units) required to earn the same level of profit are lower. They are at 1,00,000 units as against 1,16,129 units in the first proposal. This means a lower sales effort and less finance would be required for implementing proposal (ii) as against proposal (i). Of course, under proposal (ii) the company can earn higher profits than at present level if it can increase its sales beyond 1,00,000 units. **}(1/8 M)**

Answer:

(c) (i) **Statement of cost allocation to each product from each activity**

	Product			
	M (Rs.)	**S (Rs.)**	**T (Rs.)**	**Total (Rs.)**
Power (Refer to working note)	**40,000 (10,000 kWh × Rs. 4)**	**80,000 (20,000 kWh ×Rs. 4)**	**60,000 (15,000 kWh ×Rs. 4)**	**1,80,000**
Quality Inspections (Refer to working note)	**1,05,000 (3,500 inspections × Rs. 30)**	**75,000 (2,500 inspections × Rs. 30)**	**90,000 (3,000 inspections × Rs. 30)**	**2,70,000**

(1/4 M each Bold)

Working note

Rate per unit of cost driver:

Power	**(Rs. 2,00,000 / 50,000 kWh)**	**Rs. 4/kWh**
Quality Inspection	**(Rs. 3,00,000 / 10,000 inspections)**	**Rs. 30 per inspection**

(1/4 M each Bold)

(i) **Computation of cost of unused capacity for each activity:**

	(Rs.)
Power (Rs. 2,00,000 – Rs. 1,80,000) or 5,000 x 4	**20,000**
Quality Inspections (Rs. 3,00,000 – Rs. 2,70,000) or 1,000 x 30	**30,000**
Total cost of unused capacity	**50,000**

(1/4 M each Bold)

(ii) **Factors management consider in choosing a capacity level to compute the budgeted fixed overhead cost rate:**

- **Effect on product costing & capacity management**
- **Effect on pricing decisions.**
- **Effect on performance evaluation**
- **Effect on financial statements**
- **Regulatory requirements.**
- **Difficulties in forecasting.**

(1/8 M each Bold)

Answer:

(d)

	(Rs.)
Wages paid to worker during the year {(Rs. 10,000 +2,000) × 12}	**1,44,000**
Add: Employer Contribution to:	
Provident Fund @ 10%	**14,400**
E.S.I. Premium @ 4.75% (6.5 – 1.75)	**6,840**
Bonus at 2 months' wages (Basic + DA)	**24,000**
Total	**1,89,240**

(3/4 M each Bold)

Effective hours per year: 285 days × 8 hours = **2,280 hours**

(1/2M Bold)

Wage-rate per hour (for costing purpose): Rs. 1,89,240/2,280 hours **= Rs. 83**

(3/4 M Bold)

Answer 2:

(a) (a) **Calculation of Raw Material inputs during the month:**

Quantities Entering Process	Litres	Quantities Leaving Process	Litres
Opening WIP	800	Transfer to Finished Goods	4,200
Raw material input (balancing figure)	**5,360**	Process Losses	1,800
		Closing WIP	160
	6,160		6,160

(1.5 M Bold)

(b) **Calculation of Normal Loss and Abnormal Loss/Gain**

	Litres
Total process losses for month	**1,800**
Normal Loss (10% input)	**536**
Abnormal Loss (balancing figure)	**1,264**

(1/8 M each Bold)

(c) **Calculation of values of Raw Material, Labour and Overheads added to the process:**

	Material	Labour	Overheads
Cost per equivalent unit	**Rs. 23.00**	**Rs. 7.00**	**Rs. 9.00**
Equivalent units (litre) (refer the working note)	**4,824**	**4,952**	**5,016**
Cost of equivalent units	**Rs. 1,10,952**	**Rs. 34,664**	**Rs. 45,144**
Add: Scrap value of normal loss (536 units × Rs. 15)	**Rs. 8,040**	**--**	**--**
Total value added	**Rs. 1,18,992**	**Rs. 34,664**	**Rs. 45,144**

(1/8 M each Bold)

Workings:

Statement of Equivalent Units (litre):

Input Details	Units	Output details	Units	Equivalent Production					
				Material		Labour		Overheads	
				Units	(%)	Units	(%)	Units	(%)
Opening WIP	**800**	Units completed:							
Units introduced	**5,360**	- Opening WIP	**800**	**--**	**--**	**240**	**30**	**320**	**40**
		- Fresh inputs	**3,400**	**3,400**	**100**	**3,400**	**100**	**3,400**	**100**
		- Normal loss	**536**	**--**	**--**	**--**	**--**	**--**	**--**
		- Abnormal loss	**1,264**	**1,264**	**100**	**1,264**	**100**	**1,264**	**100**
		- Closing WIP	**160**	**160**	**100**	**48**	**30**	**32**	**20**
	6,160		**6,160**	**4,824**		**4,952**		**5,016**	

(1/8 M each Bold)

(d) **Process Account for Month**

	Litres	Amount (Rs.)		Litres	Amount (Rs.)
To Opening WIP	**800**	**26,640**	By Finished goods	**4,200**	**1,63,800**
To Raw Materials	**5,360**	**1,18,992**	By Normal loss	**536**	**8,040**
To Wages	**--**	**34,664**	By Abnormal loss	**1,264**	**49,296**
To Overheads	**--**	**45,144**	By Closing WIP	**160**	**4,304**
	6,160	**2,25,440**		**6,160**	**2,25,440**

(1/8 M each Bold)

Answer:
(b)

(i) Material Cost Variance (A + B) = {(SQ × SP) – (AQ × AP)}

Rs. 3,625 = (SQ × SP) – Rs. 59,825

(SQ × SP) = Rs. 63,450

$(SQ_A \times SP_A) + (SQ_B \times SP_B)$ = Rs. 63,450

$(940 \text{ kg} \times SP_A) + (705 \text{ kg} \times \text{Rs.}30)$ = Rs. 63,450

$(940 \text{ kg} \times SP_A) + \text{Rs.}21,150$ = Rs. 63,450

$(940 \text{ kg} \times SP_A)$ = Rs. 42,300

SP_A = $\frac{\text{Rs. } 42,300}{940 \text{ kg}}$

Standard Price of Material-A = Rs. 45 }(2 M Bold)

Working Note:
SQ i.e. quantity of inputs to be used to produce actual output

$$= \frac{1,480 \text{kg}}{90\%} = 1,645 \text{ kg}$$

$$SQ_A = \frac{800 \text{kg}}{(800+600)} \times 1,645 \text{kg.} = 940 \text{ kg}$$

$$SQ_B = \frac{600 \text{kg}}{(800+600)} \times 1,645 \text{kg.} = 705 \text{ kg}$$

(ii) Material Price Variance (A + B) = {(AQ × SP) – (AQ × AP)}

Rs. 175 = (AQ × SP) – Rs. 59,825

(AQ × SP) = Rs. 60,000

$(AQ_A \times SP_A) + (AQ_B \times SP_B)$ = Rs. 60,000

(900 kg × Rs. 45 (from (i) above))

$+ (AQ_B \times \text{Rs. } 30)$ = Rs. 60,000

$\text{Rs. } 40,500 + (AQ_B \times \text{Rs. } 30)$ = Rs. 60,000

$(AQ_B \times \text{Rs. } 30)$ = Rs. 19,500

$SP_A = \frac{\text{Rs. } 19,500}{650 \text{ kg}}$

Actual Quantity of Material B = 650 kg. } (2 M Bold)

(iii) (AQ × AP) = Rs. 59,825

$(AQ_A \times AP_A) + (AQ_B \times AP_B)$ = Rs. 59,825

$(900 \text{ kg} \times AP_A)$ + (650 kg (from (ii)

above) × Rs. 32.5) = Rs. 59,825

$(900 \text{ kg} \times AP_A) + \text{Rs. } 21,125$ = Rs. 59,825

$(900 \text{ kg} \times AP_A)$ = Rs. 38,700

$AP_A = \frac{38,7000}{900} = 43$

Actual Price of Material-A = Rs. 43 } (2 M Bold)

(iv) Total Actual Quantity of Material-A and Material-B
$= AQ_A + AQ_B$ = 900 kg + 650 kg (from (ii) above)
= 1,550 kg

Now,

Revised $SQ_A = \frac{800kg}{(800+600)} \times 1,550kg. =$ **886 kg**

Revised $SQ_B = \frac{600kg}{(800+600)} \times 1,550kg. =$ **664 kg**

(1 M Each Bold)

(v) Material Mix Variance (A + B) = {(RSQ × SP) – (AQ × SP)}
= {(RSQ_A × SP_A) + (RSQ_B × SP_B) – 60,000}
= (886 kg (from (iv) above) × Rs. 45 (from (i) above))
+ (664 kg (from (iv) above) × Rs. 30) - Rs. 60,000
= (39,870 + 19,920) – 60,000 = **Rs. 210 (A) } (2 M Bold)**

Answer 3:

(a) Working Notes:

(a) Annual purchase quantity for material X and Y:
Annual demand for product M- 20,000 units × 4 = 80,000 units

Particulars	Mat-X	Mat-Y
Quantity required for per unit of product M	3 kg.	4 kg.
Net quantity for materials required	2,40,000 kg.	3,20,000 kg.
Add: Loss in transit	-	6,881 kg.
Add: Loss in process	10,000 kg.	17,204 kg.
Purchase quantity	**2,50,000 kg.**	**3,44,085 kg.**

(1/2 M each Bold)

Note- Input credit on GST paid is available; hence, it will not be included in cost of material. }(1/4 M Bold)

(i) **Calculation of cost per kg. of material X and Y:**

Particulars	Mat-X	Mat-Y
Purchase quantity	**2,50,000 kg.**	**3,44,085 kg.**
Rate per kg.	**Rs. 140**	**Rs. 640**
Purchase price	**Rs. 3,50,00,000**	**Rs. 22,02,14,400**
Add: Freight	0	**Rs. 9,80,000***
Total cost	**Rs. 3,50,00,000**	**Rs. 22,11,94,400**
Net Quantity	**2,40,000 kg.**	**3,20,000 kg**
Cost per kg.	**Rs. 145.83**	**Rs. 691.23**

(1/4 M Each Bold)

$$*\text{No. of trucks} = \frac{3,44,085kg.}{10ton \times 1,000} = 34.40 \text{ trucks or } 35 \text{ trucks}$$

(1/4 M Bold)

Therefore, total freight = 35 trucks × Rs. 28,000 = **Rs. 9,80,000**
(1/4 M Bold)

(i) **Calculation of Economic Order Quantity (EOQ) for Mat.-X and Y:**

$$EOQ = \sqrt{\frac{2 \times \text{Annual Requirement} \times \text{Order cost}}{\text{Carrying cost per unit p.a.}}}$$

Particulars	Mat-X	Mat-Y
Annual Requirement	2,50,000 kg.	3,44,085 kg.
Ordering cost	0	Rs. 28,000
Cost per unit	Rs. 145.83	Rs. 691.23
Carrying cost	15%	15%
Carrying cost per unit p.a.	0*	Rs. 103.68
EOQ	**0**	**13,632.62 kg.**

(2.5 M Each Bold)

Answer:

(b) Effective Machine hour for four-week period

= Total working hours – unproductive set-up time

= {(48 hours × 4 weeks) – {(4 hours × 4 weeks)}

= (192 – 16) hours) = **176 hours. }(1.5 M Bold)**

(i) Computation of cost of running one machine for a four week period

		(Rs.)	(Rs.)
(A)	Standing charges (per annum)		
	Rent	**5,400.00**	
	Heat and light Forman's	**9,720.00**	
	Salary	**12,960.00**	
	Other miscellaneous expenditure	**18,000.00**	
	Standing charges (per annum)	**46,080.00**	
	Total expenses for one machine for four week period $\left(\frac{₹46,080}{3\,machines \times 13\,four-week\,period}\right)$		**1,181.54**
	Wages (48 hours × 4 weeks × Rs. 20 × 3 operators)		**11,520.00**
	Bonus {(176 hours × Rs. 20 × 3 operators) x 10%}		**1,056.00**
	Total standing charges		**13,757.54**
(B)	Machine Expenses		
	$\text{Depreciation} = \left(₹52,000 \times 10\% \times \frac{1}{13\,four-week\,period}\right)$		**400.00**
	Repairs and maintenance (Rs. 60 x 4 weeks)		**240.00**
	Consumable stores (Rs. 75 x 4 weeks)		**300.00**
	Power (176 hours x 20 units x Rs. 0.80)		**2,816.00**
	Total machine expenses		**3,756.00**
(C)	Total expenses (A) + (B)		**17,513.54**

(1/2 M Each Bold)

(ii) $\text{Machine hour rate} = \frac{₹\ 17,513.54}{176\,hours} = ₹99.51$ **}(1 M Bold)**

Answer 4:

(a) Journal Entries under integrated system of accounting

	Particulars		(Rs.)	(Rs.)	
(i)	Work-in-Progress Ledger Control A/c	Dr.	3,25,000		(2 M)
	Factory Overhead Control A/c	Dr.	1,15,000		
	To Stores Ledger Control A/c			4,40,000	
	(Being issue of Direct and Indirect materials)				
(ii)	Work-in-Progress Ledger Control A/c	Dr.	4,87,500		(2 M)
	Factory Overhead Control A/c	Dr.	1,62,500		
	To Wages Control A/c			6,50,000	
	(Being allocation of Direct and Indirect wages)				
(iii)	Factory Overhead Control A/c	Dr.	2,50,000		(1 M)
	To Costing Profit & Loss A/c			2,50,000	
	(Being transfer of over absorption of Factory overhead)				
	Costing Profit & Loss A/c	Dr.	1,75,000		(1 M)
	To Administration Overhead Control A/c			1,75,000	
	(Being transfer of under absorption of Administration overhead)				
(iv)	Sundry Creditors A/c	Dr.	1,50,000		(2 M)
	To Cash/Bank A/c			1,50,000	
	(Being payment made to creditors)				
(v)	Cash/Bank A/c	Dr.	2,00,000		(2 M)
	To Sundry Debtors A/c			2,00,000	
	(Being payment received from debtors)				

Answer:

(b) (i) **Statement showing allocation of Joint Cost**

Particulars	B1	B2
No. of units Produced	**1,800**	**3,000**
Selling Price Per unit (Rs.)	**40**	**30**
Sales Value (Rs.)	**72,000**	**90,000**
Less: Estimated Profit (B1 -20% & B2 -30%)	**(14,400)**	**(27,000)**
Cost of Sales	**57,600**	**63,000**
Less: Estimated Selling Expenses (B1 -15% & B2 -15%)	**(10,800)**	**(13,500)**
Cost of Production	**46,800**	**49,500**
Less:Cost after separation	**(35,000)**	**(24,000)**
Joint Cost allocated	**11,800**	**25,500**

(1/4 M Each Bold)

(ii) **Statement of Profitability**

Particulars	M1 (Rs.)	B1 (Rs.)	B2 (Rs.)
Sales Value (A)	**4,00,000 (4,000 × Rs.100)**	**72,000**	**90,000**
Less:- Joint Cost	**1,75,100 (2,12,400 -11,800 - 25,500)**	**11,800**	**25,500**
- Cost after separation	**-**	**35,000**	**24,000**
- Selling Expenses (M1- 20%, B1-15% & B2-15%)	**80,000**	**10,800**	**13,500**

	(B)	**2,55,100**	**57,600**	**63,000**
Profit	(A –B)	**1,44,900**	**14,400**	**27,000**

(1/4 M Each Bold)

Overall Profit = Rs. 1,44,900 + Rs. 14,400 + Rs. 27,000 = **Rs. 1,86,300**

(1.25 M Underline Bold)

Answer 5:

(a) Calculation of Cost per annum

Particulars	Arts (Rs.)	Commerce (Rs.)	Science (Rs.)	Total (Rs.)
Teachers' salary (W.N-1)	**16,80,000**	**21,00,000**	**25,20,000**	**63,00,000**
Re-apportionment of Economics & Mathematics	**(84,000)**	**1,45,091**	**(61,091)**	**-**
teachers' salary (W.N- 2)				
Principal's salary (W.N-3)	**1,24,800**	**1,87,200**	**2,88,000**	**6,00,000**
Lab assistants' salary (W.N-4)	**-**	**-**	**1,72,800**	**1,72,800**
Salary to library staff (W.N-5)	**43,200**	**28,800**	**57,600**	**1,29,600**
Salary to peons (W.N-6)	**31,636**	**94,909**	**47,455**	**1,74,000**
Salary to other staffs (W.N-7)	**38,400**	**1,15,200**	**57,600**	**2,11,200**
Examination expenses (W.N- 8)	**86,400**	**2,59,200**	**1,29,600**	**4,75,200**
Office & Administration expenses (W.N-7)	**1,21,600**	**3,64,800**	**1,82,400**	**6,68,800**
Annual Day expenses (W.N-7)	**36,000**	**1,08,000**	**54,000**	**1,98,000**
Sports expenses (W.N- 7)	**9,600**	**28,800**	**14,400**	**52,800**
Total Cost per annum	**20,87,636**	**34,32,000**	**34,62,764**	**89,82,400**

(1/10 M Each Bold)

(i) **Calculation of cost per student per annum**

Particulars	Arts (Rs.)	Commerce (Rs.)	Science (Rs.)	Total (Rs.)
Total Cost per annum	**20,87,636**	**34,32,000**	**34,62,764**	**89,82,400**
No. of students	**120**	**360**	**180**	**660**
Cost per student per annum	**17,397**	**9,533**	**19,238**	**13,610**

(1/10 M Each Bold)

(ii) **Calculation of profitability**

Particulars	Arts (Rs.)	Commerce (Rs.)	Science (Rs.)	Total (Rs.)
Total Fees per annum	**12,000**	**12,000**	**12,000**	
Cost per student per annum	**17,397**	**9,533**	**19,238**	
Profit/(Loss) per student per annum	**(5,397)**	**2,467**	**(7,238)**	
No. of students	**120**	**360**	**180**	
Total Profit/ (Loss)	**(6,47,640)**	**8,88,120**	**(13,02,840)**	**(10,62,360)**

(1/10 M Each Bold)

(iii) **Computation of fees to be charged to earn a 10% profit on cost**

Particulars	Arts (Rs.)	Commerce (Rs.)	Science (Rs.)
Cost per student per annum	**17,397**	**9,533**	**19,238**
Add: Profit @10%	**1,740**	**953**	**1,924**
Fees per annum	**19,137**	**10,486**	**21,162**
Fees per month	**1,595**	**874**	**1,764**

(1/10 M Each Bold)

Working Notes:

(1) Teachers' salary

Particulars	Arts	Commerce	Science
No. of teachers	4	5	6
Salary per annum (Rs.) (Rs. 35,000 x 12)	4,20,000	4,20,000	4,20,000
Total salary	16,80,000	21,00,000	25,20,000

(2) Re-apportionment of Economics and Mathematics teachers' salary

	Economics		Mathematics	
Particulars	**Arts**	**Commerce**	**Science**	**Commerce**
No. of classes	832	208	940	160
Salary re- apportionment (Rs.)	(84,000)	84,000	(61,091)	61,091
	$\left(\frac{\text{Rs. } 4,20,000}{1,040} \times 208\right)$		$\left(\frac{\text{Rs. } 4,20,000}{1,100} \times 160\right)$	

(3) Principal's salary has been apportioned on the basis of time spent by him for administration of classes.

(4) Lab attendants' salary has been apportioned on the basis of lab classes attended by the students.

(5) Salary of library staffs are apportioned on the basis of time spent by the students in library.

(6) Salary of Peons are apportioned on the basis of number of students. The peons' salary allocable to higher secondary classes is calculated as below:

	Amount (Rs.)
Peon dedicated for higher secondary	1,20,000
(1 peon × Rs. 10,000 × 12 months)	
Add: 15% of other peons' salary	54,000
{15% of (3 peons × Rs.10,000 × 12 months)}	
	1,74,000

(7) Salary to other staffs, office & administration cost, Annual day expenses and sports expenses are apportioned on the basis of number of students.

(8) Examination expenditure has been apportioned taking number of students into account (It may also be apportioned on the basis of number of examinations).

(W. Note : 1, 2, 6 = 1/3 M EACH) (W. Note : 3, 4, 5, 7, 8 = 1/10 M EACH)

Answer:

(b) Break- even point (in units) is 50% of sales i.e. 12,000 units.
Hence, Break- even point (in sales value) is 12,000 units x Rs. 200 = Rs. 24,00,000.

(i) We know that Break even sales = $\frac{Fixed\ \ Cost}{P/V\ \ ratio}$

Or, Rs. 24,00,000 = $\frac{Fixed\ \ Cost}{25\ \%}$

Or, Fixed Cost = Rs. 24,00,000 x 25%
= Rs. 6,00,000

So Fixed Cost for the year is **Rs. 6,00,000 } (2 M Bold)**

(ii) Contribution for the year = (24,000 units × Rs. 200) × 25%
= Rs. 12,00,000

Profit for the year = Contribution – Fixed Cost
= Rs. 12,00,000 - Rs. 6,00,000
= **Rs. 6,00,000 } (2 M Bold)**

(iii) Target net profit is Rs. 11,00,000
Hence, Target contribution = Target Profit + Fixed Cost
= Rs. 11,00,000 + Rs. 6,00,000
= Rs. 17,00,000
Contribution per unit = 25% of Rs. 200 = Rs. 50 per unit

No. of units = $\frac{Rs.\ 17,00,000}{Rs.\ 50\ \ per\ \ unit} = 34,000\ \ unit$ **}(2 M for 34,000 Units)**

So, 34,000 units to be sold to earn a target net profit of Rs. 11,00,000 for a year.

(iv) Net desired total Sales (Number of unit × Selling price) be *x* then desired profit is 25% on Cost or 20% on Sales i.e. 0.2 *x*

Desired Sales = $\frac{Fixed\ \ Cost\ +\ Desired\ \ Profit}{P/V\ \ ratio}$

$x = \frac{6,00,000\ +\ 0.2x}{25\%}$

or, 0.25 *x* = 6,00,000 + 0.2 *x*
or, 0.05 *x* = 6,00,000
or, *x* = Rs. 1,20,00,000

No. of units to be sold = $\frac{Rs.\ 1,20,00,000}{Rs.\ 200} = 60,000\ \ unit$ **}(2 M for 60,000 Units)**

(v) If Break- even point is to be brought down by 4,000 units then Break-even point will be 12,000 units – 4,000 units = 8,000 units
Let Selling price be Rs. *x* and fixed cost and variable cost per unit remain unchanged i.e. Rs. 6,00,000 and Rs. 150 respectively.
Break even point: Sales revenue = Total cost
8,000 *x* = 8,000 × Rs. 150 + Rs. 6,00,000
Or, 8,000 *x* = Rs. 12,00,000 + Rs. 6,00,000

Or, $x = \frac{Rs.\ 18,00,000}{8,000} = Rs.\ 225$

∴ Selling Price should be **Rs. 225 } (2 M Bold)**
Hence, selling price per unit shall be Rs. 225 if Break-even point is to be brought down by 4,000 units.

Answer 6:

(a) Difference between Cost Control and Cost Reduction

	Cost Control		**Cost Reduction**
1.	Cost control aims at maintaining the costs in accordance with the established standards.	1.	Cost reduction is concerned with reducing costs. It challenges all standards and endeavours to better them continuously
2.	Cost control seeks to attain lowest possible cost under existing conditions.	2.	Cost reduction recognises no condition as permanent, since a change will result in lower cost.
3.	In case of Cost Control, emphasis is on past and present	3.	In case of cost reduction it is on present and future.
4.	Cost Control is a preventive function	4.	Cost reduction is a corrective function. It operates even when an efficient cost control system exists.
5.	Cost control ends when targets are achieved	5.	Cost reduction has no visible end.

(1 M Each Point)

Answer:
(b)

Industry	Cost Unit
(i) Steel	Tonne **}(1 M)**
(ii) Automobile	Numbers **}(1 M)**
(iii) Transport	Passenger Kilo-meter/ Tonne Kilo-meter **}(1.5 M)**
(iv) Power	Kilo-watt hour (Kwh) **}(1.5 M)**

Answer:
(c) Difference between Bin Card & Stores Ledger

Bin Card	Stores Ledger
It is maintained by the storekeeper inthe 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 quantityand 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.

(1 M Each Point)

Answer:
(d) By-product cost can be dealt in cost accounting in the following ways:

(i) **When they are of small total value:** When the by-products are of small total value, the amount realised from their sale may be dealt in any one the following two ways:

1. The sales value of the by-products may be credited to the Costing Profit and Loss Account and no credit be given in the Cost Accounts. The credit to the Costing Profit and Loss Account here is treated either as miscellaneous income or as additional sales revenue. **}(1 M)**
2. The sale proceeds of the by-product may be treated as deductions from the total costs. The sale proceeds in fact should be deducted either from the production cost or from the cost of sales. **}(1 M)**

(ii) **When the by-products are of considerable total value:** Where by-products are of considerable total value, they may be regarded as joint products rather than as by-products. To determine exact cost of by-products the costs incurred upto the point of separation, should be apportioned over by-products and joint products by using a logical basis. In this case, the joint costs may be divided over joint products and by-products by using relative market values; physical output method (at the point of split off) or ultimate selling prices (if sold). **}(1.5 M)**

(iii) **Where they require further processing:** In this case, the net realisable value of the by-product at the split-off point may be arrived at by subtracting the further processing cost from the realisable value of by-products.

If total sales value of by-products at split-off point is small, it may be treated as per the provisions discussed above under (i).

In the contrary case, the amount realised from the sale of by-products will be considerable and thus it may be treated as discussed under (ii). **}(1.5 M)**

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