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

DATE: 01.09.2022 **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 Inventory Turnover ratios and number of days:

	Material A (Rs.)	Material B (Rs.)
Opening stock	30,000	32,000
Add: Purchases	90,000	51,000
	1,20,000	83,000
Less: Closing stock	20,000	14,000
Materials consumed	1,00,000	69,000
Average inventory: (Opening Stock + Closing Stock) ÷ 2	25,000	23,000
(a) Inventory Turnover ratio: (Consumption ÷ Average inventory)	**4 times**	**3 times**
(b) Number of days for which the average inventory held (Number of Days in a year/IT ratio)	**90 days**	**120 days**

{1 M Each x 4 = 4 M}

(ii) Comments: Material A is moving faster than Material B. Or Material A has a less holding period. **{1 M}**

Answer:

(b) (i) Flexible Budget (before promotion)

	Particulars	Product 'AYE'	Product 'ZYE'	Total
	Production & Sales (units)	4,000	3,000	
		Amount (Rs.)	**Amount (Rs.)**	**Amount (Rs.)**
A.	Sales Value	8,00,000 (Rs. 200×4,000)	5,40,000 (Rs. 180×3,000)	13,40,000
B.	Direct Materials	3,20,000 (Rs. 80 × 4,000)	2,10,000 (Rs. 70 × 3,000)	5,30,000
C.	Direct labour	1,60,000 (Rs. 40 × 4,000)	1,05,000 (Rs. 35 × 3,000)	2,65,000
D.	Variable Overheads	80,000 (Rs. 20 × 4,000)	75,000 (Rs. 25 × 3,000)	1,55,000
E.	Total Variable Cost (B+C+D)	5,60,000	3,90,000	9,50,000
F.	Contribution (A-E)	**2,40,000**	**1,50,000**	**3,90,000**
G.	Fixed Overhead	40,000 (Rs. 10 × 4,000)	30,000 (Rs. 10 × 3,000)	70,000
H.	Profit (F-G)	2,00,000	1,20,000	3,20,000
	Profit per unit	**50**	**40**	

{1/2 M Each x 5 = $2^{1/2}$ M}

(ii) Flexible Budget (after promotion)

	Particulars	Product 'AYE'	Product 'ZYE'	Total
	Production & Sales (units)	4,200 (4,000×105%)	3,150 (3,000×105%)	
		Amount (Rs.)	**Amount (Rs.)**	**Amount (Rs.)**
A.	Sales Value	9,24,000 (Rs. 220 × 4,200)	6,23,700 (Rs. 198 × 3,150)	15,47,700
B.	Direct Materials	3,36,000 (Rs. 80 × 4,200)	2,20,500 (Rs. 70 × 3,150)	5,56,500
C.	Direct labour	1,68,000 (Rs. 40 × 4,200)	1,10,250 (Rs. 35 × 3,150)	2,78,250
D.	Variable Overheads	1,00,800 (Rs. 24 × 4,200)	94,500 (Rs. 30 × 3,150)	1,95,300
E.	Total Variable Cost (B+C+D)	6,04,800	4,25,250	10,30,050
F.	Contribution (A-E)	**3,19,200**	**1,98,450**	**5,17,650**
G.	Fixed Overhead	42,000 (Rs. 40,000 × 105%)	31,500 (Rs. 30,000 × 105%)	73,500
H.	Profit (F-G)	2,77,200	1,66,950	4,44,150
	Profit per unit	**66**	**53**	

{1/2 M Each x 5 = $2^{1/2}$ M}

Answer:

(c) (i) Calculation of Effective hourly rate of earnings under Rowan Incentive Plan:

Standard time allowed = 10 hours

Time taken = 8 hours; Time saved = 2 hours

	Particulars	Amount (Rs.)
A	Basic guaranteed wages (Rs. 150 × 8 hours)	1,200
B	Add: Bonus for time saved (2/10 × 8 × Rs. 150)	240
C	Total earnings (A + B)	1,440
D	Hours worked	8 hours
E	Effective hourly rate (C ÷ D)	**180**

}{$2^{1/2}$ M}

(ii) Let the time taken to complete the job is "T" and the time saved is 10-T

Effective hourly rate under the Halsey Incentive scheme

$$= \frac{(Rate \times Hours\ Worked) + (Rate \times 50\%\ of\ Time\ Saved)}{Hours\ Worked} = Rs.180$$

$$\frac{(Rs.150 \times T) + Rs.150 \times 50\%\ (10 - T)}{T} = Rs.180$$

150T + 750 -75T = 180T

180T - 75T = 750

$T = \frac{750}{105}$ **= 7.14 hours }{$2^{1/2}$ M}**

Answer:

(d) (i) Process - I Account

Particulars	Units	(Rs.)	Particulars	Units	(Rs.)
To Materials	10,000	80,000	By Normal loss (5% of 10,000)	500	2,500
To Wages	-	60,000	By Process-II A/c (Rs. 20* × 9,650 units)	9,650	**1,93,000**
To Manufacturing OH		52,500			
To Abnormal Gain A/c (Rs.20*×150units)	150	**3,000**			
	10,150	1,95,500		10,150	1,95,500

}{1 M} **}{1 M}**

$$* \frac{(80{,}000 + 60{,}000 + 52{,}500) - 2{,}500}{10500 - 500} = \textbf{Rs. 20}$$ **}{1 M}**

(ii) Abnormal Gain - Account

Particulars	Units	(Rs.)	Particulars	Units	(Rs.)
To Normal loss A/c	150	750	By Process-I A/c	150	3,000
To Costing P&L A/c	-	2,250			
	150	3,000		150	3,000

{2 M}

Answer 2:

(a) No. of bags manufactured = 1,000 units

Cost sheet for the month of September 2021

	Particulars	Total Cost (Rs.)	Cost per unit (Rs.)	
1.	Direct materials consumed:			
	- Leather sheets	3,20,000	320.00	
	- Cotton cloths	15,000	15.00	
	Add: Freight paid on purchase	8,500	8.50	
	(i) Cost of material consumed **{1/2 M}{**	**3,43,500**	**343.50**	**}{1/2 M}**
2.	Direct wages (Rs. 80 × 2,000 hours)	1,60,000	160.00	
3.	Direct expenses (Rs. 10 × 2,000 hours)	20,000	20.00	
4.	**(ii) Prime Cost** **{1/2 M}{**	**5,23,500**	**523.50**	**}{1/2 M}**
5.	Factory Overheads: Depreciation on machines {(Rs. 22,00,000 × 90%) ÷ 120 months} **{1 M}{**	**16,500**	16.50	
	Apportioned cost of factory rent	98,000	98.00	
6.	**(iii) Works/ Factory Cost** **{1/2 M}{**	**6,38,000**	**638.00**	**}{1/2 M}**
7.	Less: Realisable value of cuttings (Rs. 150×35 kg.)	(5,250)	(5.25)	
8.	**(iv) Cost of Production** **{1/2 M}{**	**6,32,750**	**632.75**	**}{1/2 M}**
9.	Add: Opening stock of bags	0		
10.	Less: Closing stock of bags (100 bags × Rs. 632.75) **{1 M}{**	**(63,275)**		
11.	**(v) Cost of Goods Sold** **{1/2 M}{**	**5,69,475**	**632.75**	**}{1/2 M}**
12.	Add: Administrative Overheads:			
	- Staff salary	45,000	50.00	
	- Apportioned rent for administrative office	12,000	13.33	
13.	Add: Selling and Distribution Overheads			
	- Staff salary	72,000	80.00	
	- Apportioned rent for sales office	10,000	11.11	
	- Freight paid on delivery of bags	18,000	20.00	
14.	**(vi) Cost of Sales** **{1/2 M}{**	**7,26,475**	**807.19**	**}{1/2 M}**

Apportionment of Factory rent:

To factory building {(Rs. 1,20,000 ÷ 2400 sq. feet) × 1,960 sq. feet} = Rs. 98,000
To administrative office {(Rs. 1,20,000 ÷ 2400 sq. feet) × 240 sq. feet} = Rs. 12,000
To sale office {(Rs. 1,20,000 ÷ 2400 sq. feet) × 200 sq. feet} = Rs. 10,000

{2 M}

Answer:

(b) Variable Cost per Unit = Rs. 16

Fixed Cost per Unit = Rs. 4, Total Fixed Cost= 2,00,000 units x Rs. 4 = **Rs. 8,00,000 }{1 M}**

Total Cost per Unit = Rs. 20

Selling Price per Unit = Total Cost+ Profit =Rs. 20 + Rs. 4 = Rs. 24

Contribution per Unit = Rs. 24 - Rs. 16 = **Rs. 8 }{1 M}**

(i) Present Break-even Sales (Quantity) $= \frac{Fixed\ Cost}{Contribution\ margin\ per\ unit} = \frac{Rs.\ 8,00,000}{Rs.\ 8}$

= 1,00,000 units }{1 M}

Present Break-even Sales (Rs.) = 1,00,000 units x Rs. 24 = **Rs. 24,00,000 }{1 M}**

(ii) Present P/V Ratio = $\frac{8}{24}$ x 100 = **33.33% }{1 M}**

(iii) Revised Selling Price per Unit = Rs. 24 – 10% of Rs. 24 = Rs. 21.60
Revised Contribution per Unit=Rs. 21.60-Rs. 16 = **Rs. 5.60 }{1 M}**

Revised P/V Ratio = $\frac{5.60}{21.60}$ x 100 = 25.926%

Revised Break-even point (Rs.) = $\frac{Fixed\ cost}{P/V\ ratio} = \frac{8,00,000}{25.926\%}$ = **Rs. 30,85,705 }{1 M}**

Or

Revised Break-even point (units) = $\frac{Fixed\ cost}{Contribution\ margin\ per\ unit} = \frac{8,00,000}{5.60}$ = **1,42,857 units }{1 M}**

Revised Break-even point (Rs.) = 1,42,857 units x Rs. 21.60 = Rs. 30,85,711

(iv) Present profit =Rs. 8,00,000
Desired Profit = 120% of Rs. 8,00,000 =Rs. 9,60,000
Sales to earn a profit of Rs. 9,60,000
Total contribution required = 8.00.000 + 9,60,000 = Rs. 17,60,000

$\frac{Fixed\ cost + Desired\ profit}{Contribution\ per\ unit} = \frac{8,00,000 + 9,60,000}{5.60}$ **= 3,14,286 units }{1 M}**

Revised sales (in Rs.) = 3,14,286 units x Rs. 21.60 = **Rs. 67,88,578 }{1 M}**

Answer 3:

(a) (1) Fixed Overhead Expenditure Variance
= Budgeted Fixed Overheads – Actual Fixed Overheads
= Rs. 12,000 – Rs. 12,800 (as calculated below) **= Rs. 800 (A) }{1 M}**

(2) Fixed Overhead Cost Variance= Absorbed Fixed Overheads – Actual Fixed Overheads
2,800 (A) = Rs. 10,000 – Actual Overheads Actual Overheads **= Rs. 12,800 }{2 M}**

(3) Actual Hours for Actual Production = Rs. 12,800/ Rs.8 **= 1,600 hrs**. **}{1 M}**

(4) Fixed Overhead capacity Variance
= Budgeted Fixed Overheads for Actual Hours– Budgeted Fixed Overheads
= Rs. 5 x 1600 hrs. – Rs. 12,000 **= Rs. 4,000 (A) }{1 M}**

(5) Standard Hours for Actual Production
= Absorbed Overheads/ Std. Rate
= Rs. 10,000/ Rs. 5 = **2,000 hrs. }{1 M}**

(6) Fixed Overhead Efficiency Variance
= Absorbed Fixed Overheads – Budgeted Fixed Overheads for Actual Hours
= Rs. 10,000 – Rs. 5 x 1,600 hrs. = **Rs. 2,000 (F) }{1 M}**

Working Note:

(i) Fixed Overhead Volume Variance = Absorbed Fixed Overheads – Budgeted Fixed Overheads
2,000 (A) = Absorbed Fixed Overheads – Rs. 12,000
Absorbed Fixed Overheads = **Rs. 10,000 }{2 M}**

(ii) Standard Rate/ Hour = **Rs. 5 (Rs. 12,000/2,400 hrs.) }{1 M}**

Answer:

(b) Working Notes:

Annual requirement (A) = 27,000 units
Cost per order (O) = Rs. 240
Inventory carrying cost (i) = 12.5%
Cost per unit of spare (c) = Rs. 50
Carrying cost per unit (i × c) = Rs. 50 × 12.5% = **Rs. 6.25** }{1 M}

Economic Order Quantity (EOQ) $= \sqrt{\frac{2 \times A \times O}{i \times c}}$

$= \sqrt{\frac{2 \times 27{,}000 \times 240}{6.25}}$ **= 1440 units** }{1 M}

(i) Calculation of saving by opting EOQ:

	Existing Order policy	**EOQ Model**
No. of orders	9 $\left(\frac{27{,}000}{3{,}000}\right)$	**18.75 or 19** $\left(\frac{27{,}000}{1{,}440}\right)$
A. Ordering Cost (Rs.)	**2,160** (Rs. 240 × 9)	**4,500** $\left\{Rs.\ 240 \times \left(\frac{27{,}000}{1{,}440}\right)\right\}$
B. Carrying cost (Rs.)	**9,375** $\left(\frac{3{,}000 \times Rs.\ 6.25}{2}\right)$	**4,500** $\left(\frac{1{,}440 \times Rs.\ 6.25}{2}\right)$
Total cost (A+B) (Rs.)	**11,535** }{1 M}	**9,000** }{1 M}

Savings of Cost by opting EOQ Model = Rs. 11,535 – Rs. 9,000 = **Rs. 2,535** }{1 M}

(ii) Re-order point under EOQ:

Re-order point / Re-order level = Maximum consumption × Maximum lead time }{1 M}

Consumption per day $= \frac{27{,}000\ units}{360\ days}$ **= 75 units**

Re-order point/ Re-order level = 75 units × 12 days = **900 units** }{2 M}

(iii) Frequency of Orders (in days):

$\frac{360\ days}{No.\ of\ orders\ a\ year} = \frac{360\ days}{19}$ = 18.95 days or 19 days }{2 M}

Answer 4:

(a) (i) Statement of Equivalent Production (Weighted Average method)

Particulars	**Input Units**	**Particulars**	**Output Units**	**Equivalent Production**			
				Material		**Labour & O.H.**	
				%	**Units**	**%**	**Units**
Opening WIP	3,000	Completed and transferred to Process-II	36,000	100	36,000	100	36,000
Units introduced	42,000	Normal Loss (4% of 45,000 units)	1,800	--	--	--	--
		Abnormal loss (Balancing figure)	3,000	100	3,000	70	2,100
		Closing WIP	4,200	100	4,200	50	2,100
	45,000		45,000		**43,200** }{1 M}		**40,200** }{1 M}

(ii) Statement showing cost for each element

Particulars	Materials (Rs.)	Labour (Rs.)	Overhead (Rs.)	Total (Rs.)	
Cost of opening work- in-process	1,80,500	32,400	90,000	3,02,900	
Cost incurred during the month	36,04,000	4,50,000	15,18,000	55,72,000	
Less: Realisable Value of normal scrap (Rs. 62.50 × 1,800 units)	(1,12,500)	--	--	(1,12,500)	
Total cost: (A)	**36,72,000**	**4,82,400**	**16,08,000**	57,62,400	
Equivalent units: (B)	43,200	40,200	40,200		
Cost per equivalent unit: (C) = (A ÷ B)	**{1/2 M}{ 85.00**	**{1/2 M}{ 12.00**	**{1/2 M}{ 40.00**	137.00	**}{1/2 M}**

Statement of Distribution of cost

Particulars		Amount (Rs.)	Amount (Rs.)	
1.	Value of units completed and transferred: (36,000 units × Rs. 137)		**49,32,000**	**}{1 M}**
2.	Value of Abnormal Loss:			
-	Materials (3,000 units × Rs. 85)	2,55,000		
-	Labour (2,100 units × Rs. 12)	25,200		
-	Overheads (2,100 units × Rs. 40)	84,000	**3,64,200**	**}{1/2 M}**
3.	Value of Closing W-I-P:			
-	Materials (4,200 units × Rs. 85)	3,57,000		
-	Labour (2,100 units × Rs. 12)	25,200		
-	Overheads (2,100 units × Rs. 40)	84,000	**4,66,200**	**}{1/2 M}**

(iii) Process-I A/c

Particulars	Units	(Rs.)	Particulars	Units	(Rs.)	
To Opening W.I.P:						
– Materials	3,000	1,80,500	By Normal Loss (Rs. 62.5 × 1,800 units)	1,800	1,12,500	**{2 M}**
– Labour	--	32,400				
– Overheads	--	90,000				
To Materials introduced	42,000	36,04,000	By Abnormal loss	3,000	**3,64,200**	
To Labour		4,50,000	By Process-I A/c	36,000	49,32,000	
To Overheads		15,18,000	By Closing WIP	4,200	**4,66,200**	
	45,000	**58,74,900**		45,000	**58,74,900**	

(iv) Normal Loss A/c

Particulars	Units	(Rs.)	Particulars	Units	(Rs.)	
To Process-I A/c	1,800	1,12,500	By Cost Ledger Control A/c	1,800	1,12,500	**{1 M}**
	1,800	**1,12,500**		1,800	**1,12,500**	

(v) Abnormal Loss A/c

Particulars	Units	(Rs.)	Particulars	Units	(Rs.)	
To Process-I A/c	3,000	3,64,200	By Cost Ledger Control A/c (Rs. 62.5 × 3,000 units)	3,000	**1,87,500**	**{1 M}**
			By Costing Profit & Loss A/c (Bal. Figure)		**1,76,700**	
	3,000	**3,64,200**		3,000	**3,64,200**	

Answer:

(b) (i) Calculation of Net Wages paid to Worker 'R' and 'S'

Particulars	R (Rs.)	S (Rs.)
Basic Wages	15,000.00	30,000.00
Dearness Allowance (DA) (50% of Basic Wages)	7,500.00	15,000.00
Overtime Wages (Refer to Working Note 1)	4,500.00	----
Gross Wages earned	27,000.00	45,000.00
Less: Provident Fund (7% × Rs. 15,000); (7.5% × Rs.	(1,050.00)	(2,250.00)

30,000)			
Less: ESI (2% × Rs. 15,000); (2% × Rs. 30,000)		(300.00)	(600.00)
Net Wages paid	**{1/2 M}{**	**25,650.00**	**42,150.00** **}{1/2 M}**

Calculation of ordinary wage rate per hour of Worker 'R' and 'S'

		R (Rs.)	**S (Rs.)**	
Gross Wages (Basic Wages + DA) (excluding overtime)		22,500.00	45,000.00	
Employer's contribution to P.F. and E.S.I.		1,350.00	2,850.00	
		23,850.00	47,850.00	
Ordinary wages Labour Rate per hour (Rs. 23,850 ÷ 200 hours); (Rs. 47,850 ÷ 200 hours)	**{1/2 M}{**	**119.25**	**239.25**	**}{1/2 M}**

(ii) Statement Showing Allocation of workers cost to each Job

	Total Wages	**Jobs**		
		A	**B**	**C**
Worker R				
Ordinary Wages (15:2:3)	23,850.00	17,887.50	2,385.00	3577.50
Overtime	4500.00	**4500.00**	-	--
Worker S				
Ordinary Wages (2:1:2)	47,850.00	19,140.00	9,570.00	19,140.00
	76,200.00	**41,527.50 }{1 M}**	**11,955.00 }{1 M}**	**22,717.50 }{1 M}**

Working Note:

Normal Wages are considered as basic wages.

Over time $= \frac{2 \times (Basic\ wage + D.A.) \times 20\ hours}{200\ hours}$

$= 2 \times \frac{Rs.\ 22{,}500}{200} \times 20\ hours$

= **Rs. 4,500 }{1 M}**

Answer:

(c) The objectives of time-keeping in relation to attendance and payroll procedures are as follows:

(i) For the preparation of payrolls. **}{1 M}**
(ii) For calculating overtime. **}{1 M}**
(iii) For ascertaining and controlling employee cost. **}{1 M}**
(iv) For ascertaining idle time. **}{1 M}**
(v) For disciplinary purposes.
(vi) For overhead distribution

Answer 5:

(a) Statement of Cost

Particulars		**(Rs.)**	
A. Apportionment of capital cost	$\left(\frac{Rs.\ 900\ crore}{10\ years} \times \frac{1}{12\ months}\right)$	**7,50,00,000**	**}{1 M}**
B. Other Costs			
Salary to Collection Personnel	(3 Shifts × 5 persons per shift × 30 days × Rs. 200 per day)	**90,000**	**}{1 M}**
Salary to Supervisor	(3 Shifts × 2 persons per shift × 30 days × Rs. 350 per day)	**63,000**	**}{1 M}**
Salary to Security Personnel	(2 Shifts × 2 persons per shift × 30 days × Rs. 200 per day)	**24,000**	**}{1 M}**
Salary to Toll Booth Manager	(3 Shifts × 1 person per shift × 30 days × Rs. 500 per day)	**45,000**	**}{1 M}**

Electricity	1,50,000
Telephone	1,00,000
	4,72,000
C. Maintenance cost	50,00,000
Total (A + B + C)	**8,04,72,000** }{2 M}

(1) Calculation of cost per kilometre:

$$= \frac{Total\ Cost}{Total\ km.} = \frac{Rs.\ 8,04,72,000}{120\,km.} = Rs.\ 6,70,600$$ **}{1 M}**

(2) Calculation of toll rate per vehicle:

$$= \frac{Total\ Cost\ +\ 25\%\ profit}{Vehicles\ per\ month} = \frac{Rs.\ 8,04,72,000\ +\ Rs.\ 2,41,41,600}{1,00,00,000\ vehicles} = Rs.\ 10.46$$ **}{1 M}**

Working :

$$Vehicles\ per\ month = \frac{Total\ estimated\ vehicles}{10\ years} \times \frac{1\ month}{12\ month}$$

$$= \frac{120\ crore}{10\ years} \times \frac{1\ month}{12\ month} = 1\ Crore\ vehicles$$ **}{1 M}**

Answer:

(b) (i) Calculation Cost-Driver's rate

Activity	Overhead cost (Rs.)	Cost-driver level	Cost driver rate (Rs.)	
	(A)	(B)	(C) = (A)/(B)	
Ordering	64,000	34 + 32 + 14 = 80 no. of purchase orders	800	}{1 M}
Delivery	1,58,200	110 + 64 + 52 = 226 no. of deliveries	700	}{1 M}
Shelf stocking	87,560	110 + 160 + 170 = 440 shelf stocking hours	199	}{1 M}

(ii) Calculation of total cost of products using Activity Based Costing

Particulars	Fruit Juices					
	Apple (Rs.)		Orange (Rs.)		Mixed Fruit (Rs.)	
Material cost	80,000 (10,000 x Rs. 8)		90,000 (15,000 x Rs. 6)		1,00,000 (20,000 x Rs. 5)	
Direct labour cost	50,000 (10,000 x Rs. 5)		60,000 (15,000 x Rs. 4)		60,000 (20,000 x Rs. 3)	
Prime Cost (A)	1,30,000		1,50,000		1,60,000	
Ordering cost	**27,200** (800 x 34)		**25,600** (800 x 32)		**11,200** (800 x 14)	
Delivery cost	**77,000** (700 x 110)		**44,800** (700 x 64)		**36,400** (700 x 52)	
Shelf stocking cost	**21,890** (199 x 110)		**31,840** (199 x 160)		**33,830** (199 x 170)	
Overhead Cost (B)	**1,26,090**		**1,02,240**		**81,430**	
Total Cost (A + B)	2,56,090	}{1 M}	2,52,240	}{1 M}	2,41,430	}{1 M}

Answer:

(c) Various Level of Activities under ABC Methodology

Level of Activities	Meaning	
1. Unit level activities	These are those activities for which the consumption of resources can be identified with the number of units produced.	}{1 M}

2. Batch level activities	The activities such as setting up of a machine or processing a purchase order are performed each time a batch of goods is produced. The cost of batch related	**{1 M}**
	activities varies with number of batches made, but is common (or fixed) for all units within the batch.	
3. Product level activities	These are the activities which are performed to support different products in product line.	**{1 M}**
4. Facilities level activities	These are the activities which cannot be directly attributed to individual products. These activities are necessary to sustain the manufacturing process and are common and joint to all products manufactured.	**{1 M}**

Answer 6:
(a)

Techniques	Description	
Uniform Costing	When a number of firms in an industry agree among themselves to follow the same system of costing in detail, adopting common terminology for various items and processes they are said to follow a system of uniform costing. Advantages of such a system are: i. A comparison of the performance of each of the firms can be made with that of another, or with the average performance in the industry. ii. Under such a system, it is also possible to determine the cost of production of goods which is true for the industry as a whole. It is found useful when tax-relief or protection is sought from the Government.	**{1 M}**
Marginal Costing	It is defined as the ascertainment of marginal cost by differentiating between fixed and variable costs. It is used to ascertain effect of changes in volume or type of output on profit.	**{1 M}**
Standard Costing and Variance Analysis	It is the name given to the technique whereby standard costs are pre-determined and subsequently compared with the recorded actual costs. It is thus a technique of cost ascertainment and cost control. This technique may be used in conjunction with any method of costing. However, it is especially suitable where the manufacturing method involves production of standardised goods of repetitive nature.	**{1 M}**
Historical Costing	It is the ascertainment of costs after they have been incurred. This type of costing has limited utility. • Post Costing: It means ascertainment of cost after production is completed. • Continuous costing: Cost is ascertained as soon as the job is completed or even when the job is in progress.	**{1 M}**
Absorption Costing	It is the practice of charging all costs, both variable and fixed to operations, processes or products. This differs from marginal costing where fixed costs are excluded.	**{1/2 M}**
Direct costing	Direct costing is a specialized form of cost analysis that only uses variable costs to make decisions. It does not consider fixed costs, which are assumed to be associated with the time periods in which they are incurred.	**{1/2 M}**

Answer:

(b) (i) **Joint Products** - Joint products represent "two or more products separated in the course of the same processing operation usually requiring further processing, each product being in such proportion that no single product can be designated as a major product".
In other words, two or more products of equal importance, produced, simultaneously from the same process, with each having a significant relative sale value are known as joint products.
For example, in the oil industry, gasoline, fuel oil, lubricants, paraffin, coal tar, asphalt and kerosene are all produced from crude petroleum. These are known as joint products. **{$2^{1/2}$ M}**

(ii) **By-Products** - These are defined as "products recovered from material discarded in a main process, or from the production of some major products, where the material value is to be considered at the time of severance from the main product." Thus, by- products emerge as a result of processing operation of another product or they are produced from the scrap or waste of materials of a process. In short, a by-product is a secondary or subsidiary product which emanates as a result of manufacture of the main product.
The point at which they are separated from the main product or products is known as split-off point. The expenses of processing are joint till the split – off point.
Examples of by-products are molasses in the manufacture of sugar, tar, ammonia and benzole obtained on carbonisation of coal and glycerine obtained in the manufacture of soap. **{$2^{1/2}$ M}**

Answer:

(c) Procedure of Setting Labour Time Standards

The following are the steps involved in setting labour standards:

(a) **Standardisation:** Products to be produced are decided based on production plan and customer's order. **{1 M}**

(b) **Labour specification:** Types of labour and labour time is specified. Labour time specification is based on past records and it takes into account normal wastage of time. **{1 M}**

(c) **Standardisation of methods:** Selection of proper machines to use proper sequence and method of operations. **{1 M}**

(d) **Manufacturing layout:** A plan of operation for each product listing the operations to be performed is prepared. **{1 M}**

(e) **Time and motion study:** It is conducted for selecting the best way of completing the job or motions to be performed by workers and the standard time which an average worker will take for each job. This also takes into account the learning efficiency and learning effect. **{1/2 M}**

(f) **Training an d trial:** Workers are trained to do the work and time spent at the time of trial run is noted down. **{1/2 M}**

Answer:

(d) **Budgetary Control System:** It is the system of management control and accounting in which all the operations are forecasted and planned in advance to the extent possible and the actual results compared with the forecasted and planned results.
Components of Budgetary Control System: The policy of a business for a defined period is represented by the master budget, the detailed components of which are given in a number of individual budgets called functional budgets. These functional budgets are broadly grouped under the following heads: **{1 M}**

1. **Physical budgets:** Those budgets which contain information in quantitative terms such as the physical units of sales, production etc. This may include quantity of sales, quantity of production, inventories, and manpower budgets are physical budgets. **{1 M}**

2. **Cost budgets:** Budgets which provides cost information in respect of manufacturing, administration, selling and distribution, etc. for example, manufacturing costs, selling costs, administration cost, and research and development cost budgets are cost budgets. **{1 M}**
3. **Profit budgets:** A budget which enables the ascertainment of profit. For example, sales budget, profit and loss budget, etc. **{1 M}**
4. **Financial budgets:** A budget which facilitates in ascertaining the financial position of a concern, for example, cash budgets, capital expenditure budget, budgeted balance sheet etc. **{1 M}**

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