Cost Accounting – I [DSC-C-ACC-231]

(Gujarat University 2024 Paper Solution)

Q.1 (B):

Ordering Level = Maximum Consumption X Maximum Delivery Time

= 225 units X 5 weeks

= **1,125 units**

Maximum Level = Ordering Level – (Minimum Consumption X Minimum Delivery Time) + Ordering Quantity

= 1,125 units – (75 units X 3 weeks) + 900 units

= 1,125 units – 225 units + 900 units

= **1,800 units**

Minimum Level = Ordering Level – (Average Consumption X Average Delivery Time)

= 1,125 units – (150 units X 4 weeks)

= 1,125 units – 600 units

= **525 units**

Where, **Average Consumption** = $\frac{Maximum\ Consumption + Minimum\ Consumption}{2}$

$$= \frac{225\ units + 75\ units}{2}$$

= 150 units

Average Delivery Time = $\frac{Maximum\ Delivery\ Time + Minimum\ Delivery\ Time}{2}$

$$= \frac{5\ weeks + 3\ weeks}{2}$$

= 4 weeks

Safety Stock Level = Maximum Consumption X (Maximum Delivery Time – Average Delivery Time)

= 225 units X (5 weeks – 4 weeks)

= 225 units X 1 week

= 225 units

OR

Q.1: **Stock Register of Material V for January 2023**

Date	Receipts				Issues				Balance		
	Inv No.	Qty.	Rate	Amt.	Inv No.	Qty.	Rate	Amt.	Qty.	Rate	Amt.
2023 Jan. 1	Opg	360	4	1,440	--	--	--	--	360	4	1,440
5	--	720	6	4,320	--	--	--	--	360 720	4 6	1,440 4,320
12	--	--	--	--	--	600	6	3,600	360 120	4 6	1,440 720
14	--	840	6	5,040	--	--	--	--	360 120 840	4 6 6	1,440 720 5,040
20	--	--	--	--	--	360 120 480	4 6 6	1,440 720 2,880	360	6	2,160
25	--	360	8	2,880	--	--	--	--	720	7	5,040
29	--	--	--	--	--	120	7	840	**600**	**7**	**4,200**
TOTAL	**--**	**2280**	**--**	**13,680**	**--**	**1680**	**--**	**9,480**	**600**	**7**	**4,200**

Q.2 (A):

Labour Turnover Rate (As per Separation Method) =

$$\frac{No.of\ Workers\ Separated}{Average\ No.of\ Workers}\ X\ 100$$

$$= \frac{72+4+8}{600} \text{ X } 100$$

$$= \frac{84}{600} \text{ X } 100$$

= 14 %

Where, **Average no. of workers** = $\frac{Workers\ at\ beginning + Workers\ at\ end}{2}$

$$= \frac{400 + 800}{2}$$

$$= \frac{1,200}{2}$$

= 600

Labour Turnover Rate (As per Replacement Method) =

$$\frac{No.of\ Workers\ Recruited}{Average\ No.of\ Workers}\ X\ 100$$

$$= \frac{24}{600} \text{ X } 100$$

= 4 %

Q.2 (B): Time allowed (TA) = 360 hours

Time Taken (T) = 300 hours

Wage Rate (R) = ₹ 20 per hour

Time Saved (TS) = Time Allowed – Time Taken

= 360 hours – 300 hours = **60 hours**

(1) Time Wage System = Time Taken × Wage Rate per hour

= 300 hours × ₹ 20

= **₹ 6,000**

(2) Piece Wage System = Time Allowed × Wage Rate per hour

= 360 hours × ₹ 20

= **₹ 7,200**

(3) Halsey Premium Plan = (T × R) + 50% (TS × R)

= (300 hours × ₹ 20) + 50% (60 hours × ₹ 20)

= ₹ 6,000 + 50% (₹ 1,200)

= ₹ 6,000 + ₹ 600

= **₹ 6,600**

(4) Rowan Premium Plan = $(T \times R) + (W)\left(\frac{TS}{TA}\right)$

= $(300 \times ₹\ 20) + (₹\ 6{,}000)\left(\frac{60}{360}\right)$

= ₹ 6,000 + ₹ 1,000

= **₹ 7,000**

OR

Q.2:

Calculation of Normal and Overtime Hours

Days	Actual Hours Worked	Normal Working Hours	Overtime Hours	
			Single Rate	Double Rate
Monday	9	8	1	--
Tuesday	11	8	1	2
Wednesday	9	8	1	--
Thursday	10	8	1	1
Friday	8	8	--	--
Saturday	4	4	--	--
Total	**51**	**44**	**4**	**3**

Normal Wages = Normal Working Hours X Normal Rate per hour

= 44 Hours X ₹ 5 per hour = ₹ 220

Overtime Wages = At Single Rate = 4 Hours X ₹ 5 per hour = ₹ 20

= At Double Rate = 3 Hours X ₹ 10 per hour = ₹ 30

Total Wages = ₹ 270

Q.3:

Statement of Distribution of Overheads to Various Departments

Overheads	Basis of Apportionment	Total Expenses	Production Departments			Service Departments	
			A	B	C	D	E
Indirect Wages	Direct Wages (45:40:29:12:4)	2,600	900	800	580	240	80
Insurance	Cost of Machines (6 : 4 : 3 : 1 : 1)	6,600	2,640	1,760	1,320	440	440
Canteen Expenses	No. of Workers (5 : 6 : 4 : 3 : 2)	3,000	750	900	600	450	300
Lighting	Lighting Points (6 : 5 : 4 : 3 : 2)	2,000	600	500	400	300	200
Rent and Rates	Space Occupied (6 : 4 : 5 : 3 : 2)	10,000	3,000	2,000	2,500	1,500	1,000
Contribution to ESI	Direct Wages (45:40:29:12:4)	1,300	450	400	290	120	40
Depreciation	Cost of Machines (6 : 4 : 3 : 1 : 1)	33,000	13,200	8,800	6,600	2,200	2,200
Power	Horse Power (4 : 6 : 2 : 0 : 0)	9,000	3,000	4,500	1,500	---	---

Factory Manager's Salary	Proportion of time by Manager (5 : 4 : 3 : 2 : 1)	9,000	3,000	2,400	1,800	1,200	600
Direct Wages	As Given (Service Dept.)	1,600	---	---	---	1,200	400
TOTAL	**----**	**78,100**	**27,540**	**22,060**	**15,590**	**7,650**	**5,260**

OR

Q.3: **Calculation of Machine Hour Rate (4,000 Hours)**

Particulars	Annual Exp. (₹)	Rate Per Hour (₹)
(A) Fixed Charges:		
(1) Salary of Supervisor (₹ 600 p.m. x 12 months x 2 supervisor / 4 machines)	3,600	
(2) Canteen Expenses	4,800	
(3) Chemical Expenses (₹ 400 p.m. x 12 months)	4,800	
(4) Overhead Allocated to Machine (₹ 800 p.m. x 12)	9,600	
(5) Insurance Premium (₹ 80,000 x 1%)	8,000	
Total Fixed Charges (A)	**30,800**	**7.70**
(B) Variable Expenses:		
(1) Depreciation (W.N. – 1)	10,400	2.60

(2) Cost of Repairs (₹ 45,000 / 30,000 hours)	6,000	1.50
(3) Consumption of Steam and Water	400	0.10
(4) Power Consumption (40 units x ₹ 0.14 per unit)	22,400	5.60
Total Variable Expenses (B)	**39,200**	**9.80**
Total Expenses (A + B)	**70,000**	**17.50**

Working Notes:

(1) Depreciation of Machine = $\frac{Cost\ of\ Machine - Scrap\ Value}{Hours\ of\ Useful\ Life}$

$= \frac{80,000 - 2,000}{30,000}$

= **₹ 2.6 per hour**

Q.4: **Cost Sheet for the Year 2023 (5,000 Fans)**

Particulars	Total (₹)	Per Unit (₹)
Direct Materials	2,50,000	50
Direct Wages	1,25,000	25
Prime Cost	**3,75,000**	**75**
Factory Overheads:		
Fixed	25,000	5
Variable	50,000	10
Factory Cost	**4,50,000**	**90**

Office Overheads (Fixed)	50,000	10
Cost of Production	**5,00,000**	**100**
Sales Overheads:		
Fixed	1,00,000	20
Variable	25,000	5
Total Cost / Cost of Sales	**6,25,000**	**125**
Profit (40% on Cost)	2,50,000	50
Total Sales / Selling Price	**8,75,000**	**175**

Estimated Cost Sheet for the Year 2024

(Production: 10,000 Fans, Sales: 8,000 Fans)

Particulars	Total (₹)	Per Unit (₹)
Direct Materials (₹ 50 per unit + 30% increase)	6,50,000	65.00
Direct Wages (₹ 25 per unit + 30% increase)	3,25,000	32.50
Prime Cost	**9,75,000**	**97.50**
Factory Overheads:		
Fixed	25,000	2.50
Variable	1,00,000	10.00
Factory Cost	**11,00,000**	**110.00**
Office Overheads (Fixed)	50,000	5.00
Cost of Production	**11,50,000**	**115.00**

Less: Closing Stock (2,000 units x ₹ 115 per unit)	2,30,000	---
Cost of Production of Goods Sold	**9,20,000**	**115.00**
Sales Overheads:		
Fixed	1,00,000	12.50
Variable	40,000	5.00
Total Cost / Cost of Sales	**10,60,000**	**132.50**
Profit (40% on Cost)	4,24,000	53.00
Total Sales / Selling Price	**14,84,000**	**185.50**

OR

Q.4: **Cost Sheet for the Year 2024**

(Production: 20,000 units, Sales: 18,750 units)

Particulars	Total (₹)	Per Unit (₹)
Direct Materials	6,00,000	30
Direct Wages	3,00,000	15
Prime Cost	**9,00,000**	**45**
Factory Expenses	2,00,000	10
Factory Cost	**11,00,000**	**55**
Administration Expenses	1,00,000	5
Cost of Production	**12,00,000**	**60**

Add: Opening Stock (1,500 units)	90,000	--
Less: Closing Stock (2,750 units)	1,65,000	--
Cost of Production of Goods Sold	**11,25,000**	**60**
Selling Expenses	1,12,500	6
Total Cost / Cost of Sales	**12,37,500**	**66**
Profit **(25% on Sales)**	4,12,500	22
Total Sales / Selling Price	**16,50,000**	**88**

Estimated Cost Sheet for the Year 2025

(Production: 30,000 units, Sales: 25,000 units)

Particulars	Total (₹)	Per Unit (₹)
Direct Materials (₹ 30 per unit + 20% increase)	10,80,000	36
Direct Wages [₹ 15 + ₹ 3 (90,000 / 30,000 units)]	5,40,000	18
Prime Cost	**16,20,000**	**54**
Factory Expenses (₹ 10 per unit + 20% increase) (In proportion of material and wages i.e., 20%)	3,60,000	12
Factory Cost	**19,80,000**	**66**
Administration Expenses (₹ 5 per unit – 20% reduce)	1,20,000	4
Cost of Production	**21,00,000**	**70**
Less: Closing Stock (5,000 units x ₹ 70 per unit)	3,50,000	--

Cost of Production of Goods Sold	**17,50,000**	**70**
Selling Expenses (₹ 6 per unit + ₹ 2 increase)	2,00,000	8
Total Cost / Cost of Sales	**19,50,000**	**78**
Profit **(25% on Sales)**	6,50,000	26
Total Sales / Selling Price	**26,00,000**	**104**

Q.5: Multiple Choice Questions (MCQs):

1. (A) Per litre/gallon/kg.
2. (A) Absorption Costing
3. (C) Economic Ordering Quantity
4. (B) FIFO Method
5. (A) Piece Wages System
6. (B) 20%
7. (C) Office Expenses
8. (D) Dividend Paid
9. (B) ₹ 300
10. (A) ₹ 300
11. (B) 2,500 units
12. (C) Selling and Distribution indirect