SUGGESTED SOLUTION

IPCC MAY 2017EXAM

COSTING

Test Code - I M J 7 1 4 0

BRANCH - (MULTIPLE) (Date : 08.12.2016)

Head Office : Shraddha, 3rd Floor, Near Chinai College, Andheri (E), Mumbai – 69.

Tel : (022) 26836666

Answer-1 (a) :

(i) Total equivalent single room suites

Nature of suite	Occupancy (Room-days)	Equivalent single room suites (Room-days)
Single room suites	36,000 (100 rooms x 360 days x 100%)	36,000 (36,000 x 1)
Double rooms suites	14,400 (50 rooms x 360 days x 80%)	36,000 (14,400 x 2.5)
Triple rooms suites	6,480 (30 rooms x 360 days x 60%)	32,400 (6,480 x 5)
		1,04,400

(2 Marks)

(ii) Statement of total cost:

	(Rs.)
Staff salaries	14,25,000
Room attendant's wages	4,50,000
Lighting, heating and power	2,15,000
Repairs and renovation	1,23,500
Laundry charges	80,500
Interior decoration	74,000
Sundries	1,53,000
	25,21,000
Building rent {(Rs.10,000x 12 months) + 5% on total taking}	1,20,000+ 5% on total takings
Total cost	26,41,000 + 5% on total takings

(2 Marks)

Profit is 20% of total takings

∴ Total takings = Rs. 26,41,000 + 25% (5% +20%) of total takings

Let x be rent for single room suite

Then 1,04,400 x = 26,41,000 + 0.25 × 1,04,400 x

Or, 1,04,400 x = 26,41,000 + 26,100 x

Or, 78,300 x = 26,41,000

Or, x = 33.73

(2 Marks)

(iii) Rent to be charged for single room suite = Rs. 33.73
Rent for double rooms suites Rs. 33.73 x 2.5 = Rs. 84.325
Rent for triple rooms suites Rs. 33.73 x 5 = Rs. 168.65

(2 Marks)

Answer-1 (b) :

(a) Preparation of Production Budget (in nos.)

	October	**November**	**December**	**January**
Demand for the month (Nos.)	4,000	3,500	4,500	6,000
Add: 20% of next month's demand	700	900	1,200	1,300
Less: Opening Stock	(950)	(700)	(900)	(1,200)
Vehicles to be produced	3,750	3,700	4,800	6,100

(2 Marks)

(b) Preparation of Purchase budget for Part-X

	October	**November**	**December**

Production for the month (Nos.)	3,750	3,700	4,800
Add: 40% of next month's production	1,480	1,920	2,440
	(40% of 3,700)	(40% of 4,800)	(40% of 6,100)
	5,230	5,620	7,240
No. of units required for production	20,920	22,480	28,960
	(5,230 × 4 units)	(5,620 × 4 units)	(7,240 × 4 units)
Less: Opening Stock	(4,800)	(5,920)	(7,680)
		(1,480 × 4 units)	(1,920 × 4 units)
No. of units to be purchased	16,120	16,560	21,280

(3 Marks)

(c) Budgeted Gross Profit for the Quarter October to December

	October	November	December	Total
Sales in nos.	4,000	3,500	4,500	12,000
Net Selling Price per unit*	Rs. 3,46,150	Rs. 3,46,150	Rs. 3,46,150	
Sales Revenue (Rs. in lakh)	13,846	12,115.25	15,576.75	41,538
Less: Cost of Sales (Rs.in lakh) (Sales unit × Cost per unit)	11,428	9,999.50	12,856.50	34,284
Gross Profit (Rs. in lakh)	**2,418**	**2,115.75**	**2,720.25**	**7,254**

(3 Marks)

* Net Selling price unit = Rs. 3,95,600 – 12.5% commission on Rs. 3,95,600 = Rs. 3,46,150

Answer-2 (a) :

(1) Economic Order Quantity = $\sqrt{\frac{2AB}{S}}$

A = Annual Consumption
B = Buying Cost per order
S = Storage and Carrying cost

A (Annual requirement of Raw materials in kgs) = $\frac{\text{1 kg x 1,00,000 units}}{\text{2.5 units}}$
= 40000 kg.

S Carrying Cost and Storage Expenses = (0.5 x 12) + Rs.9
= Rs. 15 per unit

B Buying Cost per order = Rs. 360 = Rs. 390 = Rs.750

EOQ = $\sqrt{\frac{2x40,000x750}{15}}$
= 2000 kgs

(2 Marks)

(2) Annual Consumption = 40000 kgs
Quantity per order = 2000 kgs

No. of orders = $\frac{40,000}{2,000}$ = 20 orders in 12 months

Frequency = $\frac{12 \text{ months}}{20 \text{ orders}}$ = 0.6 months

(or) = $\frac{365 \text{ months}}{20 \text{ orders}}$ = 18 days (approx.)

(2 Marks)

(3) Quarterly Orders = $\frac{40,000 \text{ kgs}}{4 \text{ orders}}$ = 10,000 kgs per order

No. of orders $= \frac{40,000}{10,000} = 4$ orders

Total Cost:	Rs.
Order Placing Cost (4 x 750)	3,000
Carrying Cost = $\frac{10,000}{0.5 \times 4} \times 15$	75,000
	78,000

(2 Marks)

Total Cost of EOQ :

No. of Orders	=	20	Rs.
Order Placing Cost (20 x 7S0)	=		15,000
Carrying Cost = $\frac{2,000}{0.5 \times 4} \times 15$	=		15,000
			30,000

Increase in cost to be compensated by discount:

Total Cost	=	Rs. 78,000
Total Cost EOQ	=	Rs. 30,000
Increase in Cost		Rs.48,000

Price of discount per unit = $\frac{48,000}{40,00 \text{ kg}}$ = Rs.1.20 per unit

Percentage of discount in the prices of raw materials = $\frac{Rs.1.20}{60} \times 100$

= 2% discount

(2 Marks)

Answer-2 (b) :

Statement of Reconciliation

Sl. No.	Particulars	Amount (Rs.)	Amount (Rs.)
	Net loss as per Cost Accounts		(35,400)
	Additions		
1.	Factory O/H over recovered	1,35,000	
2.	Dividend Received	20,000	
3.	Bank Interest received	13,600	
4.	Difference in Value of Opening Stock (1,65,000 – 1,45,000)	20,000	
5.	Difference in Value of Closing Stock (1,32,000 – 1,25,500)	6,500	
6.	Notional Rent of own Premises	60,000	2,55,100
	Deductions		
1.	Administration O/H under recovered	25,500	
2.	Depreciation under charged	26,000	
3.	Loss due to obsolescence	16,800	
4.	Income tax Provided	43,600	
5.	Goodwill written-off	25,000	
6.	Provision for doubtful debts	15,000	(1,51,900)
Net Profit as per Financial A/c.			67,800

(6 Marks)

Answer-3 :

1. Effect of increase in efficiency on Overtime work

(a)	Present Standard Hours required to produce 19,200 units (19,200 units ÷ 6 units per hour)	3,200 hours
(b) .	Normal Available Hours per week (60 employees x 40 hours)	2,400 hours
(c)	Present Overtime work (paid at normal + 50% rate) [a - b]	800 hours
(d)	Standard Hours required after introduction of Bonus Scheme (19,200 units ÷ 8 units per hour)	2,400 hours

(e)	Overtime work required after introduction of Bonus Scheme [d - b]		Nil
(f)	Hence, Time saved after introduction of Bonus Scheme		800 hours

(2 Marks)

2. Computation of Labour Cost under Halsey & Rowan Schemes

System	Basic	Bonus	Total
Halsey	Hours worked x Rate p.h. = 2,400 x 10 = Rs.24,000	50% x Time Saved x Rate p.h. = 50% x 800 x 10 = Rs.4,000	Rs.28,000
Rowan	Hours worked x Rate p.h. = 2,400 x 10 = Rs.24,000	$\frac{\text{Actual Hours}}{\text{Std Hours}}$ x Time Saved x Rate p.h. = $\frac{2,400}{3,200}$ x 800 x 10 = Rs.6,000	Rs.30,000

Note: Wage Rate per hour = Rs. 400 for 40 hours per week = Rs. 10 per hour.
Present Total Wages = (2,400 hours x Rs. 10 ph) + (Overtime 800 hours x Rs. 15 ph) = Rs. 36,000

(3 Marks)

3. Computation of Profit under present and proposed Halsey & Rowan Schemes

Particulars		**Present**	**Halsey**	**Rowan**
(a)	Sales Revenue (19,200 units x Rs. 11)	2,11,200	2,11,200	2,11,200
(b)	Direct Material Cost (19,200 units x Rs. 8)	1,53,600	1,53,600	1,53,600
(c)	Direct Wages Cost (WN 2)	36,000	28,000	30,000
(d)	Variable OH (Actual Hrs x Rs. 0.50 ph)	3,200 x 0.5 = 1,600	2,400 x 0.5 = 1,200	2,400 x 0.5 = 1,200
(e)	Fixed Overheads	9,000	9,000	9,000
(f)	**Total Cost: (b + c + d + e)**	**2,00,200**	**1,91,800**	**1,93,800**
(g)	**Profit (a – f)**	**11,000**	**19,400**	**17,400**

(3 Marks)

Answer-4 :

Primary Distribution Summary

Item of Cost	**Basis of apportionment**	**Total (Rs.)**	**P_1 (Rs.)**	**P_2 (Rs.)**	**P_3 (Rs.)**	**S_1 (Rs.)**	**S2 (Rs.)**
Rent and Rates	Floor area (4:5:6:4:1)	62,500	12,500	15,625	18,750	12,500	3,125
General lighting	Light Points (2:3:4:2:1)	7,500	1,250	1,875	2,500	1,250	625
Indirect wages	Direct Wages (6:4:6:3:1)	18,750	5,625	3,750	5,625	2,813	938
Power	Horse Power of machines used (6:3:5:1)	25,000	10,000	5,000	8,333	1,667	—
Depreciation of machinery	Value of machinery (12:16:20:1:1)	50,000	12,000	16,000	20,000	1,000	1,000
Insurance of machinery	Value of machinery (12:16:20:1:1)	20,000	4,800	6,400	8,000	400	400
		1,83,750	46,175	48,650	63,208	19,630	6,088

(4 Marks)

Overheads of service cost centres Let S_1 be the overhead of service cost centre S_1 and S_2 be the overhead of service cost centre S_2.

$S_1 = 19,630 + 0.10\ S_2$

$S_2 = 6,088 + 0.10\ S_1$

Substituting the value of S_2 in S_1 we get

$S_1 = 19,630 + 0.10\ (6,088 + 0.10\ S_1)$

$S_1 = 19,630 + 608.8 + 0.01\ S_1$

$0.99\ S_1 = 20,238.8$

$\therefore\ S_1$ = Rs.20,443.

$\therefore S_2$ = 6,088 + 0.10 x 20,443.
= Rs.8,132.

(2 Marks)

Secondary Distribution Summary

Particulars	**Total (Rs.)**	**P_1 (Rs.)**	**P_2 (Rs.)**	**P_3 (Rs.)**
Allocated and Apportioned over-	1,58,033	46,175	48,650	63,208
heads as per primary distribution				
S_1	20,443	4,089	6,133	8,177
S_2	8,132	3,253	1,626	2,440
		53,517	56,409	73,825

(2 Marks)

(i) Overhead rate per hour

	P_1	P_2	P_3
Total overheads cost	Rs.53,517	Rs.56,409	Rs.73,825
Production hours worked	6,225	4,050	4,100
Rate per hour (Rs.)	Rs.8.60	Rs.13.93	Rs.18.01

(2 Marks)

(ii) Cost of Product X

	(Rs.)
Direct material	625.00
Direct labour	375.00
Prime cost	1,000.00
Production on overheads	
P_1 5 hours x Rs.8.60 = 43.00	
P_2 3 hours x Rs.13.93 = 41.79	
P_3 4 hours x Rs.18.01 = 72.04	
	156.83
Factory cost	1,156.83

(2 Marks)