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SUGGESTED SOLUTION

FINAL MAY 2019 EXAM

SUBJECT- COSTING

Test Code - FNJ 7041

BRANCH - () (Date :)

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

Tel : (022) 26836666

Answer 1:

Alternative – 1 with No Strike : (Refer W.N. 2, 3)

Cost of Settlement is 15% Increase i.e. Rs. 216 per unit

$$\begin{aligned} \text{Annual Cost of Settlement} &= 54,000 \text{ units} \times \text{Rs. } 216 \\ &= \text{Rs. } 1,16,64,000 \end{aligned}$$

Alternative 2 i.e. if Strike Goes Ahead : (Refer W.N. – 1, 2, 3)

Extra Cost	(Rs.)
Annual Incremental Labour Cost (Ex. Strike Days Production) [$\{54,000 \text{ units} - (25 \text{ Days} \times 180 \text{ units per Day})\} \times \text{Rs. } 144.00$]	71,28,000
Loss of Contribution due to loss of sales [$1,300 \text{ units} \times \text{Rs. } 2,200$]	28,60,000
Incremental Labour Cost for Balance 3,200 units [$(25 \text{ Days} \times 180 \text{ units per Day}) - 1,300 \text{ units} \times \text{Rs. } 144.00$]	4,60,800
Overtime Premium [$3,200 \text{ units} \times 1,584 \times 0.5$]	25,34,400
Payment for Efficiency [$3,200 \text{ units} \times 1/9 \times 1,584 \times 1.5$]	8,44,800
Additional Fixed Cost	1,00,000
	1,39,28,000

If there is no strike, it will yield a financial benefit of Rs. 22,64,000 (Rs. 1,39,28,000 – Rs. 1,16,64,000). Management should accept union's demand.

Working Note**(1) Statement Showing Contribution per unit of 'DBC'**

	Rs.
Selling Price	6,000
Less : Variable Costs :	
Labour Cost	1,440
Production Ex. Wages (Rs. 3,600 – Rs. 1,440)	2,160
Distribution	200
Contribution	2,200

(2) Calculation of Labour Cost

$$\text{Direct Labour (40\% of production costs of Rs. } 3,600) = \text{Rs. } 1,440 \text{ per unit}$$

$$\text{With 15\% Increase, Revised Labour Cost (Rs. } 1,440 + \text{Rs. } 216) = \text{Rs. } 1,656$$

$$\text{With 10\% Increase, Revised Labour Cost (Rs. } 1,440 + \text{Rs. } 144) = \text{Rs. } 1,584$$

(3) Statement Showing Budgeted Production

Total Time in a Day : (8 hrs. \times 60 minutes)	= 480 minutes
Less : Idle Time	= 48 minutes
Coffee Break	= 20 minutes
Instructions	= 22 minutes
Training	= 30 minutes
Productive Time per day	= 360 minutes
Therefore, 'DBC' to be produced per man per day : $(360 / 180 \times 1)$	= 2 units

Since 'DBC' are produced at the rate of 2 "DBC' per man day, so total yearly production will be 54,000 units (2 units \times 90 men \times 300 days) of 'DBC'

→ This problem has been solved by comparing 'Existing Situation' with both 'Alternatives (Strike or Non – Strike)' independently. However, this problem can also be solved by comparing 'Alternatives (Strike or None – Strike)' only and final answer would be the same. Students may also solve this problem by taking 'Total Approach' instead of 'Incremental Approach'.

Answer 2:

Customer Wise profitability Statement and Overall Profitability Statement

SN.	Particulars	PER	MGH	WLY	Total Rs.
A	Sales (net proceeds) – Table 1	241,288	237,500	272,812	751,600
B	Variable Cost of Goods sold	1,50,000	1,42,500	1,87,500	4,80,000
C	Assignable – Marketing and Administration Cost – Table 2				
	• Order Taking and Processing	1,200	600	4,500	6,300
	• Sale Return Processing	150	-	1,200	1,350
	• Billing Cost	200	100	750	1,050
	• Customer Visit	800	-	4,000	4,800
	Total Assignable Marketing and Administration Cost	2,350	700	10,450	13,500
D	Assignable – Distribution Cost – Table 2				
	Expedited / Rush Orders	250	-	1,250	1,500
	Delivery Costs	8,000	4,000	-	12,000
	Inventory Carrying Cost	10,000	9,500	12,500	32,000
	Total Assignable Distribution Cost	18,250	13,500	13,750	45,500
E	Non – Assignable Fixed Cost	-	-	-	1,00,000
F	Total Costs (B + C + D + E)	170,600	156,700	211,700	639,000
G	Net Profit (Step A – F)	70,688	80,800	61,112	112,600
H	Profit % of Sales (G/A)	29%	34%	22%	15%

Workings :

Table : 1 Customer sales Analysis – Revenue Analysis

All figures in Rs.

Particulars	PER	MGH	WLY	Total Rs.
Sales (Sales Units × Sale Price (gross))	2,50,000	2,37,500	3,12,500	8,00,000
Less : Sales Return (Step 1 × Return %)	1,250	-	31,250	32,500
Net Sales	2,48,750	2,37,500	2,81,250	7,67,500
Less : Cash Discount	7,462	-	8,438	15,900
Net Proceeds	2,41,288	2,37,500	2,72,812	7,51,600
Final Collections vs Original Sale	97%	100%	87%	94%

Table : 2 Assignable Marketing, Administrative and Distribution Costs

All figure in Rs.

Particulars	PER	MGH	WLY	Total
Order Taking and Processing (# of orders × cost per order)	1,200	600	4,500	6,300
Expedited / Rush Orders (# of orders × cost per order)	250	-	1,250	1,500
Delivery Costs (Distance in km. × cost per km)	8,000	4,000	-	12,000
Sales Return Processing (# of returns × cost per return)	150	-	1,200	1,350
Billing Cost (# of invoices × cost per invoice)	200	100	750	1,050
Customer Visit (# of customer visits × cost per visit)	800	-	4,000	4,800
Inventory Carrying Cost (# of units × inventory carrying cost p.u.)	10,000	9,500	12,500	32,000

Answer 3:

Contribution per unit

Particulars	(Rs.)
Selling Price	200
Variable Cost (Rs. 65 + Rs. 33 + Rs. 16)	114
Contribution per unit (Excluding direct labour, considered irrelevant and fixed)	86

Savings and Earnings if the Plant is Shut Down

Particulars	(Rs.)
Savings in Fixed Cost (Rs. 14,00,000* - Rs. 1,25,000)	12,75,000
Contribution from Alternate Activity (Rs. 40 × 50% of 2,00,000 hrs)	40,00,000
Shutting Down and Reopening Cost (Rs. 50,000 + Rs. 1,00,000)	(1,50,000)
Total	51,25,000

*[2,00,000 units × Rs. 7]

Indifference Point :Rs. 51,25,000 / Rs. 86 = 59,593 units

Minimum level of production to justify continuation = 59,594 units

Answer 4:

Cost Incurred – Cost Classification

S. No.	Cost Incurred	Classification 1	Classification 2	Classification 3
(i)	Remuneration of the loan division manager.	Uncontrollable by the loan division manager.	Direct cost of the loan division.	Out of Pocket Cost
(ii)	Cost of Printer Paper, File Folders, View Binders, Ink, Toner & Ribbons used in the loan division.	Controllable by the loan division manager.	Direct cost of the loan division.	Out of Pocket Cost
(iii)	Cost of the division's MacBook Pro purchased by the loan division manager last year.	Controllable by the loan division manager.	Direct cost of the loan division.	Sunk Cost
(iv)	Cost of advertising in business newspaper by the bank, which is allocated to the loan division.	Uncontrollable by the loan division manager.	Indirect Cost of the loan division.	Out of Pocket Cost

Answer 5:

$$\begin{aligned} \text{(i) Efficiency Ratio} &= \frac{\text{Standard Hours (for actual production)}}{\text{Actual Hours(worked)}} \times 100 \\ &= \frac{450 \text{ units} \times 10 \text{ hrs.}}{6,000 \text{ hrs.}} \times 100 \\ &= 75\% \end{aligned}$$

$$\begin{aligned} \text{(ii) Activity Ratio} &= \frac{\text{Standard Hours (for actual Production)}}{\text{Budgeted Hours}} \times 100 \\ &= \frac{450 \text{ units} \times 10 \text{ hrs.}}{528 \text{ units} \times 10 \text{ hrs.}} \times 100 \\ &= 85.23\% \end{aligned}$$

$$\text{(iii) Capacity Ratio} = \frac{\text{Actual Hours (worked)}}{\text{Budgeted Hours}} \times 100$$

$$= \frac{6,000 \text{ hours}}{528 \text{ units} \times 10 \text{ hrs.}} \times 100$$

$$= 113.64\%$$

Answer 6:

Total Annual Production (In Units)

Particulars	Units
Sales in 4 Quarters	3,07,500
Add : Desired Closing Balance	32,500
	3,40,000
Less : Opening Balance	20,000
Total number of units to be produced in the next year	3,20,000

Production Budget (In Units)

Particulars	Q – I	Q – II	Q – III	Q – IV	Total
Sales	60,000	75,000	82,500	90,000	3,07,500
Production in Current Quarter	48,000	60,000	66,000	72,000	
(80% of the sale of current quarter)					
Production for Next Quarter	15,000	16,500	18,000	24,500*	
(20% of the sale of next quarter)					
Total Production	63,000	76,500	84,000	96,500*	3,20,000

*Difference in Balancing Figure

Raw Material Consumption Budget (In Quantity)

Particulars	Q – I	Q – II	Q – III	Q – IV	Total
Units to be produced in each quarter (1)	63,000	76,500	84,000	96,500	3,20,000
Raw Material consumption per unit (Kg.) (2)	2	2	2	2	
Total raw material consumption (Kg.) (1 × 2)	1,26,000	1,53,000	1,68,000	1,93,000	6,40,000

Raw Material Purchase Budget (In Quantity)

Particulars	Kg.
Raw Material required for Production	6,40,000
Add : Desired Closing Balance of Raw Material	10,000
	6,50,000
Less : Opening Balance	20,000
Material to be purchased	6,30,000

Raw Material Purchase Budget (In Value)

Quarters	% of Annual Requirement (Qty.) for Purchasing Raw	Quantity of Raw Materials to be Purchased (Kg.)	Rate Per Kg. (Rs.)	Amount (Rs.)
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	Material			
(1)	(2)	(3)	(4)	(5) = (3) × (4)
I	30	1,89,000 (6,30,000 × 30%)	2	3,78,000
II	50	3,15,000 (6,30,000 × 50%)	3	9,45,000
III	20	1,26,000 (6,30,000 × 20%)	4	5,04,000
		6,30,000		18,27,000

Answer 7:

Workings :

Statement Showing 'Sale Price and Contribution' per unit

Particulars	Product – X (Rs.)	Product – Y(Rs.)
Selling price (assumed)	X	Y
Direct Material	161	176
Direct Labour	75	90
Variable Overheads	30	50
Commission on Sales	X × 4%	Y × 5%
Contribution (i)	0.96 X – 266	0.95 Y – 316
PVR (ii)	20%	16%
Selling Price From (i) & (ii)	350	400
Contribution	70	64

Computation of Sales Quantity

Let 'K' be the Quantity of Product X.

Therefore, Quantity of Product Y = $K \times \frac{3}{5} = 0.6 K$

Given, Annual Fixed Overheads = Rs. 25,36,000 or Rs. 6,34,000 per quarter;

Desired Profit = Rs. 4,50,000 per quarter.

Accordingly,

Desired Contribution = Rs. 6,34,000 + Rs. 4,50,000

= Rs. 10,84,000

OR

Rs. $70 \times K + Rs. 64 \times 0.6 K$ = Rs. 10,84,000

Therefore K = 10,000 units

Sales Quantity of X = 10,000; Y = 6,000