



J.K. SHAH[®]
TEST SERIES
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SUGGESTED SOLUTION

INTERMEDIATE M'19 EXAM

SUBJECT- COSTING AND F.M.

Test Code – CIM 8129

BRANCH - () (Date :)

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ANSWER-1**(10 MARKS)****Effective direct labour hours :**

Permanent workmen=	9,60,000 hours
Apprentice workmen 50% of 80,000 hours	<u>40,000 hours</u>
	<u>10,00,000 hours</u>

Sales per direct labour hour : Rs. 200 lakhs / 10,00,000 = Rs. 20

Loss of production hours :

For replacement	= 20,000 hours
For apprentices	= <u>40,000 hours</u>
Total	= <u>60,000 hours</u>

Loss of potential sales for loss of production hrs :

= 60,000 x Rs. 20 == Rs. 12,00,000

If there had been no labour turnover, sales would have been

= Rs. 2,00,00,000 + Rs. 12,00,000

= Rs. 2,12,00,000

Direct labour for 20,000 hrs. lost due to replacement

= (Rs. 40 lakhs/10,40,000) X 20,000 hrs. = Rs. 76,923

Materials and variable overhead for Rs. 12 lakhs sales = (110 lakhs/200 lakhs) x 12 lakhs = Rs. 6,60,000

Potential Profit with no labour turnover

Sales	<u>Rs. 2,12,00,000</u>
Less : Direct labour (40,00,000 + 76,923)	40,76,923
Direct material & Overheads (Rs, 1,10,00,000 + 6,60,000)	<u>1,16,60,000</u>
Total variable cost	<u>1,57,36,923</u>
Contribution	54,63,077

Less: Fixed cost	<u>10,00,000</u>
	44,63,077
Actual profit	<u>40,00,000</u>
Loss of profit due to labour turnover	<u>4,63,077</u>

Alternatively, this result can be found out by considering the differentials only

Loss of Sale		Rs. 12,00,000
Less : Variable cost		
Direct labour	76,923	
Material & Overhead	<u>6,60,000</u>	<u>7,36,923</u>
Loss of profit due to labour turnover		<u>4,63,077</u>

Note. If the hours had not been lost due to labour turnover, there would have been sales increase due to utilisation of these hours. This sales increase might have resulted in increase of material and overhead cost. At the same time there might have been increase in labour cost also for use of labour during these hours lost.

ANSWER-2

(10 MARKS)

Evaluation of Credit policies

Particulars	Present policy (Rs.)	Proposed policy (Rs.)
Credit Sales	15,00,000	15,80,000 (112% of 15,00,000)
Variable Cost (72%)	(10,80,000)	(12,09,600)
Contribution	4,20,000	4,70,400
Bad debt	(22,500) (15,00,000 x 15%)	(33,600) (16,80,000 x 2%)
Profit Before Tax (PBT)	3,97,500	4,36,800
Tax @ 30%	(1,19,250)	(1,31,040)
Profit After Tax (PAT)	2,78,250	3,05,760
Opportunity Cost (Refer working note)	(20,250)	(30,240)
Net Profit	2,58,000	2,75,520

In proposed scheme the net profit is more by Rs. 17,520 i.e. (Rs. 2,75,520 - Rs. 2,58,000), hence, company should change the credit policy.

Working Note:

Opportunity Cost on Credit safes:

$$\text{Present policy} = \text{Rs.}10,80,000 \times \frac{15}{100} \times \frac{45 \text{ days}}{360 \text{ days}} = \text{Rs.}20,250$$

$$\text{Proposed policy} = \text{Rs.}12,09,600 \times \frac{15}{100} \times \frac{60 \text{ days}}{360 \text{ days}} = \text{Rs.}30,240$$

Assumption:

- (i) Cash discount is not availed by the debtors.
- (ii) Debtors are utilising full credit period for payment.
- (iii) No. of days in a year is 360 days.

ANSWER-3

(10 MARKS)

Working Note: Is Let x be the cost of material and y be the normal rate of wage per hour.

Factory Cost of workman Vishnu:

Material cost Rs. x

Wages 60 y

$$\text{Bonus under Rowan System} = \frac{\text{Time saved}}{\text{Time allowed}} \times \text{Hrs. worked} \times \text{Rate per hr.}$$

$$= (40 / 100) \times 60 y = 24 y$$

Overhead, i.e., 60 x 10 = 600

$$\text{Factory cost} = x + 60 y + 24 y + \text{Rs. } 600 = \text{Rs. } 7280 \text{ or } x + 84 y = \text{Rs. } 6680 \quad \dots(1)$$

Factory cost of workman Shiva:

Material Rs. x

Wages 80 y

$$\text{Bonus under Halsey Premium Plan} = \text{Hrs. Saved} * 50 \% * \text{Rate per hr.}$$

$$= 20 \times 50\% \times y = 10y$$

$$\text{Overhead (80 x 10)} = 800$$

$$\text{Factory cost} = x + 80y + 10y + \text{Rs. } 800 = 7,600 \text{ or } x + 90y = \text{Rs. } 6,800 \dots(2)$$

From (i) and (ii) value of $y = 20$

\therefore Rate per hour Rs, 20

$$\text{Bonus paid to Vishnu} = 24 \times \text{Rs. } 20 = \text{Rs. } 480$$

$$\text{Bonus paid to Shiva} = 10 \times \text{Rs. } 20 = \text{Rs. } 200$$

(a) Normal Wages = Rs. 20 per hour as per Working Note above.

(b) The cost of material:

$$\text{We know that } x + 90y = \text{Rs. } 6,800$$

$$\text{or } x + (90 \times 20) = \text{Rs. } 6,800 \text{ or } x = \text{Rs. } 5,000$$

(c) Comparative statement of the factory cost of the product made by the two workmen

	Vishnu	Shiva
Material Cost	Rs. 5,000	Rs. 5,000
Direct Wages 60 x 20	1,200	-
80 x 20	-	1,600
Bonus (See Working Note above)	480	200
Factory Overhead	600	800
Factory Cost	7,280	7,600

ANSWER-4

Production Budget (in units) for the year ended 31st March 2016

	Product M	Product N
Budgeted sales (units)	28,000	13,000
Add: Increase in closing stock	320	160
No. good units to be produced	28,320	13,160
Post production rejection rate	4%	6%
No. of units to be produced	29,500	14,000
	$\left\{ \frac{28,320}{0.96} \right\}$	$\left\{ \frac{13,160}{0.94} \right\}$

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(3 MARKS)

Purchase budget (in kgs and value) for Material Z

	Product M	Product N
No. of units to be produced	29,500	14,000
Usage of Material Z per unit of production	5 kg.	6 kg.
Material needed for production	1,47,500 kg.	84,000 kg.
Materials to be purchased	1,63,889 kg.	88,421 kg.
	$\left\{ \frac{1,47,500}{0.9} \right\}$	$\left\{ \frac{84,000}{0.95} \right\}$
Total quantity to be purchased	2,52,310 kg.	
Rate per kg. of Material Z	Rs.36	
Total purchase price	Rs.90,83,160	

(3 MARKS)

- (ii) Since, the maximum number of order per year can not be more than 40 orders and the maximum quantity per order that can be purchased is 4,000 kg. Hence, the total quantity of Material Z that can be available for production:

(4 MARKS)

$$= 4,000 \text{ kg.} \times 40 \text{ orders} = 1,60,000 \text{ kg}$$

	Product M	Product N
Material needed for production to maintain the same production mix	1,03,929 kg.	56,071 kg.
	$\left(1,60,000 \times \frac{1,63,889}{2,52,310} \right)$	$\left(1,60,000 \times \frac{88,421}{252,310} \right)$
Less: Process wastage	10,393 kg.	2,804 kg.
Net Material available for production	93,536 kg.	53,267 kg.

Units to be produced	18,707units $\left\{ \frac{93,536kg.}{5 kg.} \right\}$	8,878units $\left\{ \frac{53,267 kg.}{6 kg.} \right\}$
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ANSWER-5

Particulars	Rs.
Total Sales	Rs. 200 lakhs
Credit Sales (80%)	Rs. 160 lakhs
Receivables for 40 days	Rs. 80 lakhs
Receivables for 120 days	Rs. 80 lakhs
Average collection period [(40 x 0.5) + (120 x 0.5)]	80 days
Average level of Receivables (Rs. 1,60,00,000 x 80/360)	Rs.35,55,556
Factoring Commission (Rs. 35,55,556 x 2/100)	Rs.71,111
Factoring Reserve (Rs. 35,55,556 x 10/100)	Rs. 3,55,556
Amount available for advance {Rs. 35,55,556 - (3,55,556 + 71,111)}	Rs.31,28,889
Factor will deduct his interest 18% : Interest = $\frac{Rs.31,28,889 \times 18 \times 80}{100 \times 360}$	Rs. 1,25,156
Advance to be paid (Rs. 31,28,889 - Rs. 1,25,156)	Rs.30,03,733

(5 MARKS)

(i) **Statement Showing Evaluation of Factoring Proposal**

	Rs.
A. Annual Cost of Factoring to the Firm:	
Factoring commission (Rs. 71,111 x 360/80)	3,20,000
Interest charges (Rs. 1,25,156 x 360/80)	5,63,200
Total	8,83,200
B. Firm's Savings on taking Factoring Service:	Rs.
Cost of credit administration saved	2,40,000
Bad Debts (Rs. 160,00,000 x 1/100) avoided	1,60,000
Total	4,00,000
C. Net Cost to the firm (A - B) (Rs. 8,83,200 - Rs. 4,00,000)	4,83,200

$$\text{Effective cost of factoring} = \frac{Rs.4,83,200}{Rs.30,03,733} \times 100 = 16.09\% *$$

* If cost of factoring is calculated on the basis of total amount available for advance, then, it will be

$$= \frac{\text{Rs.}4,83,200}{\text{Rs.}31,28,889} \times 100 = 15.44\%$$

- (ii) If Bank finance for working capital is available at 14%, firm will not avail factoring service as 14 % is less than 16.08% (or 15.44%) **(5 MARKS)**