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SUGGESTED SOLUTION

CA INTERMEDIATE NOV'19

SUBJECT- COSTING & FM

Test Code - CIM 8324

BRANCH - () (Date :)

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Answer 1:

Cost sheet for the year ended 31st March, 2018.

Units produced – 14,000 units

Units sold – 14,153 units

Particulars	Amt. (Rs.)
Raw materials purchased	42,25,000
Add : Freight Inward	1,00,000
Add : Opening value of raw materials	2,28,000
Less : Closing value of raw materials	(3,05,000)
	42,48,000
Less : Sale of scrap of material	8,000
Materials consumed	42,40,000
Direct Wages (12,56,000 + 1,50,000)	14,06,000
Prime Cost	56,46,000
Factory overheads (20% of Rs. Prime Cost)	11,29,200
Add : Opening value of W – I – P	1,92,500
Less : Closing value of W – I – P	(1,40,700)
Factory Cost	68,27,000
Add : Administrative overheads	1,73,000
Cost of Production	70,00,000
Add : Value of opening finished stock	6,08,500
Less : Value of closing finished stock	6,08,500
[Rs. 500 (70,00,000/14,000) × 1,064)	
(1,217 + 14,000 – 14,153 = 1,064 units)	(5,32,000)
Cost of Goods sold	70,76,500
Distribution expenses (Rs. 16 × 14,153 units)	2,26,448
Cost of Sales	73,02,948
Profit (Balancing figure)	14,43,606
Sales (Rs. 618 × 14,153 units)	87,46,554

(10 marks)

Answer 2:

(i) Computation of wages of each worker under guaranteed hourly rate basis

Worker	Actual hours Worked(Hours)	Hourly wage rate (Rs.)	(Wages) (Rs.)
I	380	40	15,200
II	100	50	5,000
III	540	60	32,400

(2 marks)

(ii) Computation of Wages of each worker under piece work earning basis

Product	Piece rate per unit (Rs.)	Worker – I		Worker – II		Worker – III	
		Units	Wages (Rs.)	Units	Wages (Rs.)	Units	Wages (Rs.)
A	15	210	3,150	-	-	600	9,000
B	20	360	7,200	-	-	1,350	27,000
C	30	460	13,800	250	7,500	-	-
Total			24,150		7,500		36,000

Since each worker's earnings are more than 50% of basic pay. Therefore, worker – I, II and III will be paid the wages as computed i.e. Rs. 24,150, Rs. 7,500 and Rs. 36,000 respectively.

(2 marks)

Working Notes :

1. Piece rate per unit

Product	Standard time per unit in minute	Piece rate each minute (Rs.)	Piece rate per unit (Rs.)
A	15	1	15
B	20	1	20
C	30	1	30

(1 mark)

2. Time allowed to each worker

Worker	Product – A	Product – B	Product – C	Total Time (Hours)
I	210 units × 15 = 3,150	360 units × 20 = 7,200	460 units × 30 = 13,800	24,150 / 60 = 402.50
II	-	-	250 units × 30 = 7,500	7,500/ 60 = 125
III	600 units × 15 = 9,000	1,350 units × 20 = 27,000	-	36,000/60 = 600

(1 mark)

(iii) Computation of wages of each worker under Premium bonus basis (where each worker receives bonus based on Rowan Scheme)

Worker	Time Allowed (Hr.)	Time Taken (Hr.)	Time Saved (Hr.)	Wage Rate per hour(Rs.)	Earnings (Rs.)	Bonus	Total Earning (Rs.)
I	402.5	380	22.5	40	15,200	850	16,050
II	125	100	25	50	5,000	1,000	6,000
III	600	540	60	60	32,400	3,240	35,640

(2 marks)

$* \frac{Time\ Taken}{Time\ Allowed} \times Time\ Saved\ \times WageRate$

Worker – I = $\frac{380}{402.5} \times 22.5 \times 40$ = 850

Worker – II = $\frac{100}{125} \times 25 \times 50$ = 1,000

Worker – III = $\frac{540}{600} \times 60 \times 60$ = 3,240 **(2 marks)**

Answer 3:

Labour turnover rate :

It comprises of computation of labour turnover by using following methods :

(i) Replacement Method :

Labour turnover rate = $\frac{No.of\ workers\ replaced}{Average\ number\ of\ workers} \times 100$

$= \frac{75}{1{,}000} \times 100 = 7.5\%$

Equivalent Annual Turnover Rate = $\frac{7.5 \times 365}{31} = 88.31\%$ **(3 marks)**

(ii) Separation Method :

Labour turnover rate = $\frac{No.of\ workers\ left + No.of workers\ discharged}{Average\ number\ of\ workers} \times 100$

$= \frac{(40+60)}{(900+1100) \div 2} \times 100 = \frac{100}{1{,}000} \times 100 = 10\%$

Equivalent Annual Turnover Rate = $\frac{10 \times 365}{31} = 117.74\%$ **(3 marks)**

(iii) Flux Method :

Labour turnover rate = $\frac{No.of\ separations + No.of\ accessions}{Average\ number\ of\ workers} \times 100$

$= \frac{(100 + 300)}{(900 + 1{,}100) \div 2} \times 100 = \frac{400}{1{,}000} \times 100 = 40\%$

Equivalent Annual Turnover Rate = $\frac{40 \times 365}{31} = 470.97\%$ **(4 marks)**

OR

Flux Method :

Labour turnover rate = $\frac{No.of\ separation + No.\ of\ replaced}{Average\ number\ of\ workers} \times 100$

$\frac{100 + 75}{1000} \times 100 = 17.5\%$

Equivalent Annual Turnover Rate = $\frac{17.5 \times 365}{31} = 206.05\%$

Answer 4:

(i) Computation of Earnings per Share (EPS)

Plans	P	Q	R
	Rs.	Rs.	Rs.
Earnings before interest & tax (EBIT)	18,00,000	18,00,000	18,00,000
Less: Interest charges	-	2,00,000	-
Earnings before tax (EBT)	18,00,000	16,00,000	18,00,000
Less : Tax @ 50%	9,00,000	8,00,000	9,00,000
Earnings after tax (EAT)	9,00,000	8,00,000	9,00,000
Less : Preference share dividend	-	-	2,00,000
Earnings available for equity shareholders	9,00,000	8,00,000	7,00,000
No. of shares	2,00,000	1,00,000	1,00,000
E.P.S (Rs.)	4.5	8	7

(2 marks)

(ii) Computation of Financial Break-even Points

Proposal 'P' = 0

Proposal 'Q' = Rs. 2,00,000 (Interest charges)

Proposal 'R' = Earnings required for payment of preference share dividend i.e. Rs. 2,00,000 , 0.5 (Tax Rate) = Rs. 4,00,000 **(1 mark)**

(iii) Computation of Indifference Point between the Proposals

The indifference point

$$= \frac{\left(\text{EBIT-}1_1\right)\left(1\text{-T}\right)}{\text{E}_1} = \frac{\left(\text{EBIT-}1_2\right)\left(1\text{-T}\right)}{\text{E}_2}$$

Where,

EBIT = Earnings before interest and tax

1_1 = Fixed Charges (Interest) under Proposal 'P'

1_2 = Fixed charges (Interest) under Proposal 'Q'

T = Tax Rate

E_1 = Number of Equity shares in Proposal P

E_2 = Number of Equity shares in Proposal Q

Combination of Proposals

(a) Indifference point where EBIT of proposal "P" and proposal 'Q' is equal

$$\frac{(ebit-0)(1-.5)}{2,00,000} = \frac{(EBIT-2,00,000)(1-0.5)}{1,00,000}$$

.5 EBIT (1,00,000) = (.5 EBIT -1,00,000) 2,00,000

.5 EBIT = EBIT – 2,00,000

EBIT = Rs. 4,00,000

(b) Indifference point where EBIT of proposal 'P' and Proposal 'R' is equal:

$$\frac{(\text{EBIT-1})(1\text{-T})}{E_1} = \frac{(\text{EBIT-12})(1\text{-T})}{E_2} \text{ - Preference share dividend}$$

$$\frac{(EBIT-0)(1-.5)}{2,00,000} = \frac{(EBIT-0)(1-.5)-2,00,000}{1,00,000}$$

$$\frac{.5EBIT}{2,00,000} = \frac{.53BIT-2,00,000}{1,00,000}$$

.25 EBIT = 0.5 EBIT - 2,00,000

EBIT = 2,00,000 ÷ 0.25

= Rs. 8,00,000

(c) Indifference point where EBIT of proposal 'Q' and proposal 'R' are equal

$$\frac{(EBIT-2,00,000)(1-0.5)}{1,00,000} = \frac{(EBIT-0)(1-0.5)-2,00,000}{1,00,000}$$

.5 EBIT -1,00,000 = .5 EBIT – 2,00,000

There is no indifference point between proposal 'Q' and proposal 'R'

(7 marks)

Analysis: It can be seen that Financial proposal 'Q' dominates proposal 'R', since the financial break-even-point of the former is only Rs. 2,00,000 but in case of latter, it is Rs. 4,00,000.

Answer 5:

Working Notes:

(i) Capital Employed

	Rs.
Equity Capital (5,00,000 shares of Rs. 10 each)	50,00,000
Debentures (Rs. 80,000×100/8)	10,00,000
Term Loan (Rs. 2,20,000×100/11)	20,00,000
Reserves and Surplus	20,00,000
Total Capital Employed	1,00,00,000

(1 mark)

(ii) Rate of Return

Earnings before Interest and Tax = Rs. 23,00,000

Rate of Return on Capital Employed = $\frac{\text{Rs.}23,00,000}{\text{Rs.}1,00,00,000}$ x 100 = 23% **(1 mark)**

(iii) Expected Rate of Return after Modernisation = 23% + 2% = 25% **(1 mark)**

Alternative 1: Raise Entire Amount as Term Loan

	Rs.
Original Capital Employed	1,00,00,000
Less: Debentures	10,00,000
	90,00,000
Add: Additional Term Loan	30,00,000
Revised Capital Employed	1,20,00,000

		Rs.
EBIT on Revised Capital Employed (@ 25% on Rs. 120 lakhs)		30,00,000
Less: Interest		
Existing Term Loan (@11%)	2,20,000	
New Term Loan (@12%)	3,60,000	5,80,000
		24,20,000
Less: Income Tax (@ 50%)		12,10,000
Earnings after Tax (EAT)		12,10,000

Earnings per Share (EPS) = $\frac{\text{EAT}}{\text{No. of Equity Shares}} = \frac{\text{Rs.}12,10,000}{5,00,000\,\text{Shares}} = Rs.2.42$

P/E Ratio = $\frac{\text{Market Price Per Share}}{\text{EPS}} = 8$

8 = $\frac{\text{Market Price}}{Rs.2.42}$

Market Price = Rs. 19.36 **(2 marks)**

Alternative 2: Raising Part by Issue of Equity Shares and Rest by Term Loan

		Rs.
Earnings before interest and tax (@ 25% on Revised Capital Employed i.e. Rs.120 lakhs)		30,00,000
Less : Interest		
Existing Term Loan @ 11%	2,20,000	
New Term Loan @ 12%	1,20,000	3,40,000
		26,60,000
Less : Income Tax @ 50%		13,30,000
Earnings after Tax		13,30,000

EPS = $\frac{\text{Rs.}13,30,000}{5,00,000\ (\text{existing}) + 1,00,000(\text{new})} = Rs.2.217$

P/E Ratio = 10

Market Price = Rs. 22.17 **(4 marks)**

Advise:

(i) From the above computations it is observed that the market price of Equity Shares is maximised under Alternative 2. Hence this alternative should be selected.

(ii) If, under the two alternatives, the P/E ratio remains constant at 10, the market price under Alternative 1 would be Rs. 24.20. Then Alternative 1 would be better than Alternative 2. **(1 mark)**