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SUGGESTED SOLUTION

CA INTERMEDIATE NOV'19

SUBJECT- COSTING

Test Code - CIM 8362

BRANCH - () (Date :)

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ANSWER-1

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

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

= (40 / 100) x 60 y = 24 y

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

Factory cost = x + 60 y + 24 y + Rs. 600 = Rs. 7280 or x + 84 y = Rs. 6680 ...(1)

Factory cost of workman Shiva:

Material Rs. x

Wages 80 y

Bonus under Halsey Premium Plan = Hrs. Saved * 50 % * Rate per hr.

= 20* 50% * y = 10 y

Overhead (80 x 10) = 800

Factory cost = x + 80y + 10y + Rs. 800 = 7,600 or x + 90y = Rs. 6,800 ...(2)

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

∴ Rate per hour Rs, 20

Bonus paid to Vishnu = 24 x Rs. 20 = Rs. 480

Bonus paid to Shiva = 10 x Rs. 20 = Rs. 200

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

(b) The cost of material:

We know that x + 90y = Rs. 6,800

or x + (90 x 20) = Rs. 6,800 or x = Rs. 5,000

(8 MARKS)

(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

(2 MARKS)

ANSWER-2

Effective direct labour hours :

Permanent workmen= 9,60,000 hours

Apprentice workmen 50% of 80,000 hours 40,000 hours

10,00,000 hours

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

Loss of production hours :

For replacement = 20,000 hours

For apprentices = 40,000 hours

Total = 60,000 hours

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		Rs. 2,12,00,000
Less : Direct labour (40,00,000 + 76,923)		40,76,923
Direct material & Overheads (Rs, 1,10,00,000 + 6,60,000)		1,16,60,000
Total variable cost		1,57,36,923
Contribution		54,63,077
Less: Fixed cost		10,00,000
		44,63,077
Actual profit		40,00,000
Loss of profit due to labour turnover		4,63,077

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	6,60,000	7,36,923
Loss of profit due to labour turnover		4,63,077

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.

(10 MARKS)

ANSWER-3

Working Notes:

(i) Calculation of no. of employees at the beginning and end of the year

	At the Beginning of the year	At the end of the year
Data Processors	540	1,560
Payroll Processors [Left- 60 + Closing- 40 – Joined- 20]	80	40
Supervisors*	30	90
Voice Agents*	30	30
Assistant Managers*	20	30
Senior Voice Agents	4	12
Senior Data Processors	8	34
Team Leaders	60	0
Total	**772**	**1,796**

(*) **At the beginning of the year:**

Strength of Supervisors, Voice Agents and Asst. Managers =

[772 – {540 + 80 + 4 + 8 + 60} employees] or [772 – 692 = 80 employees]

[{Supervisors- $80\times\frac{3}{8}$ = 30, Voice Agents- $80\times\frac{3}{8}$ = 30 & Asst. Managers- $80\times\frac{2}{8}$ = 20} employees]

At the end of the year:

[Supervisor-(Opening- 30 + 60 Joining) = 90; Voice Agents- (Opening- 30 + 20 Joined – 20 Left) = 30]

(ii) No. of Employees Separated, Replaced and newly recruited during the year

Particulars	Separations	New Recruitment	Replacement	Total Joining
Data Processors	60	1,020	60	1,080
Payroll Processors	60	--	20	20
Supervisors	--	60	--	60
Voice Agents	20	--	20	20
Assistant Managers	10	10	10	20
Sr. Voice Agents	--	8	--	8
Sr. Data Processors	--	26	--	26
Team Leaders	60	--	--	--
Total	**210**	**1,124**	**110**	**1,234**

(6 MARKS)

(Since, Corrs Consultancy Ltd. and its subsidiary are maintaining separate Personnel Department, so transfer-in and transfer-out are treated as recruitment and separation respectively.)

(a) Calculation of Labour Turnover:

$$\text{Replacement Method} = \frac{\text{No. of employees replaced during the year}}{\text{Average no. of employees on roll}} \times 100$$

$$= \frac{110}{(772+1,796)/2} \times 100 = \frac{110}{1,284} \times 100 = 8.57\%$$

$$\text{Separation Method} = \frac{\text{No. of employees separated during the year}}{\text{Average no. of employees on roll}} \times 100$$

$$= \frac{210}{1,284} \times 100 = 16.36\%$$

(b) Labour Turnover under Flux Method:

$$= \frac{\text{No. of employees (Joined + Separated) during the year}}{\text{Average no. of employees on roll}} \times 10$$

$$= \frac{\text{No. of employees (Re placed + New recruited + Separated) during the year}}{\text{Average no. of employees on roll}} \times 100$$

$$= \frac{1,234+210}{1,284} \times 10 = 112.46\%$$

Labour Turnover calculated by the executive trainee of the Personnel department is incorrect as it has not taken the No. of new recruitment while calculating the labour turnover under Flux method.

(2*2 = 4 MARKS)

ANSWER-4

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

Workers	Actual hours worked in a week	Hourly rate of wages (₹)	Wages (₹)
(a)	(b)	(c)	(d) = (b) × (c)
A	38	6.00	228.00
B	40	5.00	200.00
C	34	7.20	244.80

(ii) Computation of wages of each worker under piece work earnings basis

		Worker A		Worker B		Worker C	
Product	Rate per unit	Units	Wages (₹)	Units	Wages (₹)	Units	Wages (₹)
(a)	(b)	(c)	(d= b*c)	(e)	(f = b*e)	(g)	(h=b*g)
P	1.20	21	25.20	-	-	60	72
Q	1.80	36	64.80	-	-	135	243
R	3.00	46	138.00	25	75	-	-
			228.00		75.00		315.00

Since each worker has been guaranteed at 75% of basic pay, if his earnings are less than 50% of basic pay (guaranteed hourly rate), therefore, earning of the workers will be as follows Workers A and C will be paid the wages as computed viz., ₹ 228 and ₹ 315 respectively. The computed earnings under piece rate basis for worker B is ₹ 75 which is less than 50% of basic pay i.e., ₹ 100 (₹ 200 × 50) therefore he would be paid ₹ 150 i.e. 75% × ₹ 200 .

Working Notes:

1. Piece rate / per unit

Product	Standard time per unit in minutes	Piece rate each minute (₹)	Piece rate per unit (₹)
(a)	(b)	(c)	(d) = (b) × (c)
P	12	0.10	1.20
Q	18	0.10	1.80
R	30	0.10	3.00

2. Time allowed to each worker

Worker A = (21 units × 12 minutes) + (36 units × 18 minutes) + (46 units × 30 minutes)

= 2,280 minutes or 38 hours

Worker B = 25 units × 30 minutes

= 750 minutes or 12.5 hours

Worker C = (60 units × 12 minutes) + (135 units × 18 minutes)

= 3,150 minutes or 52.5 hours

(7 MARKS)

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

Workers	Time allowed hours	Time taken hours	Time saved hours	Wage rate/hour (₹)	Earnings (₹)	Bonus (₹)	Total of earning & bonus (₹)
A	38.00	38.00	-	6.00	228.00	-	228.00
B	12.50	40.00	-	5.00	200.00	-	200.00
C	52.50	34.00	18.50	7.20	244.80	86.26*	331.06

* Bonus under Rowan scheme $= \frac{\text{Time saved}}{\text{Time allowed}} \times \text{Time taken} \times \text{Rate per hour}$

$$= \frac{18.5 \text{ hours}}{52.5 \text{ hours}} \times 34 \text{ hours} \times ₹\ 7.20$$

$$= ₹\ 86.26$$

(3 MARKS)