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SUGGESTED SOLUTION

CA INTERMEDIATE

SUBJECT- COSTING

Test Code – CIM 8458

BRANCH - () (Date :)

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ANSWER -1

Input – Output Relation
1 bag = 1 metre of cotton cloth
Therefore 1000 meter cotton cloth = 1000 units of bags because here opening stock and closing stock of input are zero. Therefore total input purchased = total input consumed

No. of bags manufactured = 1,000 units

Cost sheet for the month of September 2019

	Particulars	**Total Cost (Rs.)**	**Cost per unit (Rs.)**
1.	Direct materials consumed:		
	- Leather sheets	3,20,000	320.00
	- Cotton cloths	15,000	15.00
	Add: Freight paid on purchase	8,500	8.50
2.	Direct wages (Rs.80 × 2,000 hours)	1,60,000	160.00
3.	Direct expenses (Rs.10 × 2,000 hours)	20,000	20.00
4.	**Prime Cost**	**5,23,500**	523.50
5.	Factory Overheads: Depreciation on machines	16,500	16.50
	{(Rs.22,00,000×90%)÷120 months}		
	Apportion cost of factory rent	98,000	98.00
6.	Works/ Factory Cost	6,38,000	638.00
7.	Less: Realisable value of cuttings (Rs.150×35 kg.)	(5,250)	(5.25)
8.	Cost of Production	6,32,750	632.75
9.	Add: Opening stock of bags	0	
10.	Less: Closing stock of bags (100 bags × Rs.632.75)	(63,275)	
11.	Cost of Goods Sold	5,69,475	632.75
12.	Add: Administrative Overheads:		
	- Staff salary	45,000	45.00
	- Apportioned rent for administrative office	12,000	12.00
13.	Add: Selling and Distribution Overheads		
	- Staff salary	72,000	80.00
	- Apportioned rent for sales office	10,000	11.11
	- Freight paid on delivery of bags	18,000	20.00
14.	Cost of Sales (18+19+20)	7,26,475	800.86

Apportionment of Factory rent:

To factory building {(Rs.1,20,000 ÷ 2400 sq.feet) × 1,960 sq. feet} = Rs.98,000

To administrative office {(Rs.1,20,000 ÷ 2400 sq.feet) × 240 sq. feet} = Rs.12,000

To sale office {(Rs.1,20,000 ÷ 2400 sq.feet) × 200 sq. feet} = Rs.10,000

(10 MARKS)

ANSWER -2

(i) Variable overhead absorption rate = $\frac{Difference\ in\ Total\ Overheads}{Difference\ in\ levels\ in\ terms\ of\ machine\ hours}$

$= \frac{Rs.3,47,625 - Rs.3,38,875}{15,500\ hours - 14,500\ hours}$ = Rs. 8.75per machine hour.

(1 MARK)

(ii) **Calculate of Total fixed overheads :**

	(Rs.)
Total overheads at 14,500 hours	3,38,875
Less : Variable overheads (Rs. 8.75 × 14,500)	(1,26,875)
Total fixed overheads	2,12,000

(1 MARK)

(iii) Calculation of Budgeted level of activity in machine hours :

Let budgeted level of activity = X

Then, $\frac{(Rs.8.75\ X + Rs.2,12,000}{X}$ = Rs. 22

8.75X + Rs. 2,12,000 = 22X

13.25 X = 2,12,000

X = 16,000

Thus, budgeted level of activity = 16,000 machine hours.

(2 MARKS)

(iv) Calculation of Under / Over absorption of overheads :

	(Rs.)
Actual overheads	3,22,000
Absorbed overheads (14,970 hours × Rs. 22 per hour)	3,29,340
Over – absorption (3,29,340 – 3,22,000)	7,340

(1 MARK)

(v) Departmental absorption rates provide costs which are more precise than those provided by the use of blanket absorption rates. Departmental absorption rates facilitate variance analysis and cost control. The application of these rates make the task of stock and work – in – process (WIP) valuation easier and more precise. However, the setting up and monitoring of these rates can be time consuming and expensive.

(1 MARK)

ANSWER -3

(i) Statement Showing Overhead Cost per unit "Traditional Method"

	Gel Pen (Rs.)	Ball Pen (Rs.)
Units	5,500	24,000
Overheads (Rs.) (Refer to W.N.)	4,80,000 (20 × 24,000 hrs.)	10,80,000 (20 × 54,000 hrs.)
Overhead Rate per unit (Rs.)	87.27 (Rs. 4,80,000 /5,500 units)	45 (Rs. 10,80,000 /24,000 units)

Working Notes :

Overhead Rate per Machine Hours

$$= \frac{Total\ Overhead\ incurred\ by\ the\ Company}{Total\ Machine\ Hours}$$

$$= \frac{Rs.4{,}75{,}020 + 5{,}79{,}988 + 5{,}04{,}992}{24{,}000\ hours + 54{,}000\ hours} = \frac{Rs.15{,}60{,}000}{78{,}000\ hours}$$

= Rs. 20 per machine hour

(5 MARKS)

(ii) Statement Showing 'Activity Based Overhead Cost"

Activity Cost Pool	Cost Driver	Ratio	Total Amt. (Rs.)	Gel Pen (Rs.)	Ball Pen (Rs.)
Volume Related Activity Costs	Machine hours	24 : 54	4,75,020	1,46,160	3,28,860
Setup Related Costs	No. of Setups	30 : 56	5,79,988	2,02,321	3,77,667
Purchase Related Costs	No. of Purchase Orders	240 : 448	5,04,992	1,76,160	3,28,832
Total Cost				5,24,641	10,35,359
Output (units)				5,500	24,000
Unit Cost (Overheads)				95.39	43.13

(3 MARKS)

(iii)

	Gel Pen	Ball Pen
Overheads Cost per unit (Rs.) (Traditional Method)	87.27	45
Overheads Cost per unit (Rs.) (ABC)	95.39	43.13
Difference per unit	- 8.12	+ 1.87

(Volume related activity cost, set up related costs and purchase related cost can also be calculated under Activity Base Costing using Cost driver rate. However, there will be no changes in the final answer.)

(2 MARKS)

ANSWER -4

Effective machine hours = 200 hours × 75% = 150 hours

Computation of Comprehensive Machine Hour Rate

	Per month (Rs.)	Per hour (Rs.)
Fixed cost		
Supervision charges	18,000.00	
Electricity and lighting	9,500.00	
Insurance of Plant and building (Rs. 18,250 ÷ 12)	1,520.83	
Other General Expenses (Rs. 17,500 ÷ 12)	1,458.33	
Depreciation (Rs. 64,800 ÷ 12)	5,400.00	
	35,879.16	239.19
Direct Cost		
Repairs and maintenance	17,500.00	116.67
Power	65,000.00	433.33
Wages of machine man		139.27
Wages of Helper		109.41
Machine Hour Rate (Comprehensive)		1,037.87

(5 MARKS)

Wages per machine hour

	Machine man	Helper
Wages for 200 hours		
Machine – man (Rs. 400 per day × 25 days*)	Rs. 10,000.00	--
Helper (Rs. 275 per day × 25 days*)	---	Rs. 6,875.00
Dearness Allowance (DA)	Rs. 4,575.00	Rs. 4,575.00
	Rs. 14,575.00	Rs. 11,450.00
Production bonus (1/3 of Basic and DA)	4,858.33	3,816.67
Leave wages (10% of Basic and DA)	1,457.50	1,145.00
	20,890.83	16,411.67
Effective wage rate per machine hour	Rs. 139.27	Rs. 109.41

*** 1day = 8 hours. Therefore for 200 hours, 25 days.**

(3 MARKS)

ANSWER -5

Calculation of "Activity Rate"

Cost Pool	Cost (Rs.)	Cost Driver	Cost Driver Rate (Rs.)
	[A]	[B]	[C] = [A] ÷ [B]
Machine Department Expenses	18,48,000	Machine Hours (1,32,000 hrs.)	14.00
Assembly Department Expenses	6,72,000	Assembly Hours (42,000 hrs.)	16.00
Setup Cost	90,000	No. of production Runs (450*)	200.00
Stores Receiving Cost	1,20,000	No. of Requisitions Raised on the Stores (120)	1,000.00

Order Processing and Dispatch	1,80,000	No. of Customers Orders Executed (3,750)	48.00
Inspection and Quality Control Cost	36,000	No. of Production Runs (450*)	80.00
Total (Rs.)	29,46,000		

*Number of Production Run is 450 (150 + 120 + 180)

(4 MARKS)

Statement Showing "Overheads Allocation"

Particulars of Cost	Cost Driver	P	Q	R	Total
Machine Department Expenses	Machine Hours	4,20,000 (30,000 × Rs. 14)	6,72,000 (48,000 × Rs. 14)	7,56,000 (54,000 × Rs. 14)	18,48,000
Assembly Department	Assembly Hours	2,40,000 (15,000 × Rs. 16)	----	4,32,000 (27,000 × Rs. 16)	6,72,000
Setup cost	No. of Production Runs	30,000 (150 × Rs. 200)	24,000 (120 × Rs. 200)	36,000 (180 × Rs. 200)	90,000
Stores Receiving cost	No. of Requisition Raised on the Stores	40,000 (40 × Rs. 1,000)	30,000 (30 × Rs. 1,000)	50,000 (50 × Rs. 1,000)	1,20,000
Order Processing and Dispatch	No. of Customers Orders Executed	60,000 (1,250 × Rs. 48)	48,000 (1,000 × Rs. 48)	72,000 (1,500 × Rs. 48)	1,80,000
Inspection and Quality Control cost	No. of Production Runs	12,000 (150 × Rs. 80)	9,600 (120 × Rs. 80)	14,400 (180 × Rs. 80)	36,000
Overhead (Rs.)		8,02,000	7,83,600	13,60,400	29,46,000

(4 MARKS)

ANSWER -6

Overhead Distribution Statement

	Production Departments		Service Departments	
	Machine Shops	**Packing**	**General Plant**	**Stores**
Allocated Overheads :	**Rs.**	**Rs.**	**Rs.**	**Rs.**
Indirect labour	8,000	6,000	4,000	11,000
Maintenance Material	3,400	1,600	2,100	2,800
Misc. supplies	1,500	2,900	900	600
Supervisor's salary	--	--	16,000	---
Cost & payroll salary	--	--	80,000	--
Total allocated overheads	12,900	10,500	1,03,000	14,400
Add : Apportioned Overheads (As per Schedule below)	1,84,350	70,125	22,775	73,150
	1,97,250	80,625	1,25,775	87,550

(3 MARKS)

Schedule of Apportionment of Overheads

Item of cost	Basis	Production Departments		Service Departments	
		Machine shops (Rs.)	Packing (Rs.)	General Plant (Rs.)	Stores (Rs.)
Power	HP hours (7 : 1 : - : 2)	54,600	7,800	--	15,600
Rent	Floor space (5 : 2 : 1 : 4)	30,000	12,000	6,000	24,000
Fuel & Heat	Radiator sec. (3 : 6 : 2 : 4)	12,000	24,000	8,000	16,000
Insurance	Investment (10 : 3 : 1 : 2)	7,500	2,250	750	1,500
Taxes	Investment (10 : 3 : 1 : 2)	5,250	1,575	525	1,050
Depreciation	Investment (10 : 3 : 1 : 2)	75,000	22,500	7,500	15,000
		1,84,350	70,125	22,775	73,150

(3 MARKS)

(b) Re – distribution of Overheads of Service Departments to Production Departments:

Let, the total overheads of General Plant = 'a' and the total overheads of Stores = 'b'

a = 1,25,775 + 0.3b……..(i)

b = 87,550 + 0.2a ……(ii)

Putting the value of 'b' in equation no. (i)

a = 1,25,775 + 0.3 (87,550 + 0.2a)

Or a = 1,25,775 + 26,265 + 0.06a

Or 0.94a = 1,52,040 Or a = 1,61,745 (appx.)

Putting the value of a = 1,61,745 in equation no. (ii) to get the value of 'b'

b = 87,550 + 0.2 × 1,61,745 = 1,19,899

Secondary Distribution Summary

Particulars	Total (Rs.)	Machine Shops (Rs.)	Packing (Rs.)
Allocated and Apportioned overheads as per Primary distribution	2,77,875	1,97,250.00	80,625.00
- General Plant	1,61,745	80,872.50 $\left(1{,}61{,}745 \times \frac{5}{10}\right)$	48,523.50 $\left(1{,}61{,}745 \times \frac{3}{10}\right)$
- Stores	1,19,899	59,949.50 $(1{,}19{,}899 \times 50\%)$	23,979.80 $(1{,}19{,}899 \times 20\%)$
		3,38,072.00	**1,53,128.30**

(2 MARKS)