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SUGGESTED SOLUTION

INTERMEDIATE M'19 EXAM

SUBJECT- COSTING

Test Code - CIM 8189

BRANCH - () (Date :)

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ANSWER-1

(i) Amount of under – absorption of production overheads during the year 20X1 - 12

		Rs.
Total production overheads actually incurred during the year 20X1 – X2		6,00,000
Less : 'Written off' obsolete stores	Rs. 45,000	
Wages paid for strike period	Rs. 30,000	75,000
Net Production overheads actually incurred : (A)		5,25,000
Production overheads absorbed by 48,000 machine Hours @ Rs. 10 per hour : (B)		4,80,000
Amount of under – absorption of production overheads : [(A) – (B)]		45,000

(3 MARKS)

(ii) Accounting treatment of under absorption of production overheads

It is given in the statement of the question that 20,000 units were completely finished and 8,000 units were 50% complete, one third of the under – absorbed overheads were due to lack of production planning and the rest were attributable to normal increase in costs.

	Rs.
1. (33 – 1/3% of Rs. 45,000) i.e., Rs. 15,000 of under – absorbed overheads were due to lack of production planning. This being abnormal, should be debited to the Costing Profit and Loss A/c.	15,000
2. Balance (66 – 2/3% of Rs. 45,000) i.e., Rs. 30,000 of under – absorbed overheads should be distributed over work – in – progress, finished goods and cost of sales by using supplementary rate.	30,000
Total under – absorbed overheads	45,000

(3 MARKS)

Apportionment of unabsorbed overheads of Rs. 30,000 over, work – in – progress, finished goods and cost of sales

	Equivalent Completed Units	Rs.
Work – in – Progress (4,000 units × Rs. 1.25) (Refer to working note)	4,000	5,000
Finished goods (2,000 units × Rs. 1.25)	2,000	2,500
Cost of sales (18,000 units × Rs. 1.25)	18,000	22,500
	24,000	30,000

Working Note :

Supplementary rate per unit = $\frac{Rs.30,000}{24,000} = Rs. 1.25$

(4 MARKS)

ANSWER-2**(i) Statement Showing "Cost per unit - Traditional Method"**

Particulars of Costs	P (Rs.)	Q (Rs.)	R (Rs.)
Direct Materials	90	80	120
Direct Labour [(4, 12, 8 hours) X Rs.20]	80	240	160
Production Overheads [(10, 18, 14 hours) X Rs.6]	60	108	84
<i>Cost per unit</i>	230	428	364

(2 MARKS)**(ii) Statement Showing "Cost per unit - Activity Based Costing"**

Products	P	Q	R
Production (units)	3,000	5,000	20,000
	(Rs.)	(Rs.)	(Rs.)
Direct Materials (90, 80, 120)	2,70,000	4,00,000	24,00,000
Direct Labour (80, 240, 160)	2,40,000	12,00,000	32,00,000
Machine Related Costs @ Rs.1.80 per hour (30,000, 90,000, 2,80,000)	54,000	1,62,000	5,04,000
Setup Costs @ Rs.9,600 per setup (20, 10, 20)	1,92,000	96,000	1,92,000
Inspection Costs @ Rs.4,800 per inspection (100, 40, 60)	4,80,000	1,92,000	2,88,000
Purchase Related Costs @ Rs.750 per purchase (60, 100, 160)	45,000	75,000	1,20,000
Total Costs	12,81,000	21,25,000	67,04,000
<i>Cost per unit</i> (Total Cost X Units)	427.00	425.00	335.20

(3 MARKS)

Workings**(5 MARKS)****Number of Batches, Purchase Orders, and Inspections-**

	Particulars	P	Q	R	Total
A.	Production (units)	3,000	5,000	20,000	
B.	Batch Size (units)	150	500	1,000	
C.	Number of Batches [A / B]	20	10	20	50
D.	Number of Purchase Order <i>per batch</i>	3	10	8	
E.	Total Purchase Orders [C X D]	60	100	160	320
F.	Number of Inspections <i>per batch</i>	5	4	3	
G.	Total Inspections [C X F]	100	40	60	200

Total Machine Hours-

	Particulars	P	Q	R
A.	Machine Hours <i>per unit</i>	10	18	14
B.	Production (units)	3,000	5,000	20,000
C.	Total Machine Hours [A X B]	30,000	90,000	2,80,000

Total Machine Hours = 4,00,000

Total Production Overheads-

= 4,00,000 hrs. X Rs. 6 = Rs. 24,00,000

Cost Driver Rates-

Cost Pool	%	Overheads (Rs.)	Cost Driver (Units)	Cost Driver Rate (Rs.)
Setup	20%	4,80,000	50	9,600 per Setup
Inspection	40%	9,60,000	200	4,800 per Inspection
Purchases	10%	2,40,000	320	750 per Purchase
Machine Hours	30%	7,20,000	4,00,000	1.80 per Machine

				Hour
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ANSWER-3

(a) As per Financial Books Profit and Loss Account (for the year ended 31st March, 1995)

To Direct Material	Rs.5,00,000	By Sales (50,000 units)	Rs. 10,00,000
“ Direct Wages	2,50,000	” Interest and dividend	15,000
“ Factory Expenses (actual)	1,50,000		
” Admn. Expenses	45,000		
“ Selling & Distribution Expenses	30,000		
“ Profit	40,000		
	10,15,000		10,15,000

As per above account, profit is Rs. 40,000 for the year ended 31st March, 1995.

(3 MARKS)

(b) Cost Sheet (for the year ended 31st March, 1995)

Normal production capacity (units)		60,000
Sales/Production (units)		<u>50,000</u>
Direct materials		Rs.5,00,000
Direct wages		<u>2,50,000</u>
Prime cost		7,50,000
Factory overhead – Variable	Rs.60,000	
- Fixed Rs. 90,000 x 5/6	<u>75,000</u>	<u>1,35,000</u>
Works cost		8,85,000
Administrative expenses Rs. 45,000 x 5/6		<u>37,500</u>
Total cost of production		9,22,500
Selling and distribution expenses		
-Variable	Rs. 18,000	
- Fixed Rs. 12,000 X 5/6	<u>10,000</u>	<u>28,000</u>
Cost of Sales		9,50,500
Profit (balance)		<u>49,500</u>
Sales		<u>10,00,000</u>

(4 MARKS)

(c) Reconciliation Statement

Profit as per Cost Accounts	Rs. 49,500	
Add: Income from dividend (not considered in Cost Accounts)	<u>15,000</u>	64,500
Less: Expenses undercharged in Cost Accounts:		
(i) Factory expenses (1,50,000 - 1,35,000)	15,000	
(ii) Adm. expenses (45,000 - 37,500)	7,500	
(iii) Selling & Distribution (30,000 - 28,000)	<u>2,000</u>	<u>24,500</u>
Profit as per financial accounts		<u>40,000</u>

(3 MARKS)

ANSWER-4

(i) Computation of overhead absorption rate

(as per the current policy of the company)

Department	Budgeted Factory Overhead	Budgeted Direct Wages
Machinery	Rs. 3,60,000	Rs. 80,000
Assembly	1,40,000	3,50,000
Packing	1,25,000	70,000
	6,25,000	5,00,000

$$\begin{aligned} \text{Overhead absorption rate} &= \frac{\text{Budgeted Factory Overheads}}{\text{Budgeted Direct Wages}} \times 100 \\ &= \frac{\text{Rs.6,25,000}}{5,00,000} \times 100 = 125\% \text{ of Direct Wages} \end{aligned}$$

Selling Price of the Job No. CW—7083

Direct Material (Rs. 1200 + Rs. 600 + Rs. 300)	Rs.2,100.00
Direct Wages (Rs. 240 + Rs. 360 + Rs. 60)	660.00
Factory Overheads (125% or Rs. 660)	<u>825.00</u>

Total Factory Cost	3,585.00
Add: Mark-up (30% of Rs. 3585)	<u>1,075.50</u>
Selling Price	<u>4,660.50</u>

(3 MARKS)

(ii) **Methods available for absorbing factory overheads and their overhead recovery rates in different departments**

1. In machining department, machine usage is predominant. The overhead recovery rate based on machine hours should be calculated for this department as follows :

$$\text{Machine Hour Rate} = \frac{\text{Budgeted Factory Overheads}}{\text{Budgeted Machine Hours}}$$

$$= \text{Rs. } 3,60,000 \div 80,000 = \text{Rs. } 4.50 \text{ per hour}$$

2. In Assembly department, labour hour is predominant. The overhead recovery rate based on labour hours should be calculated for this department as follows :

$$\text{Machine Labour Hour Rate} = \frac{\text{Budgeted Factory Overheads}}{\text{Budgeted Direct Labour Hours}}$$

$$= \text{Rs. } 1,40,000 \div 1,00,000 = \text{Rs. } 1.40 \text{ per hour}$$

3. Packing Department— Labour is predominant factor in this department. Hence Direct Labour Hour method should be used in this department as follows :

$$\text{Machine Labour Hour Rate} = \frac{\text{Budgeted Factory Overheads}}{\text{Budgeted Labour Hours}}$$

$$= \text{Rs. } 1,25,000 \div 50,000 = \text{Rs. } 2.50 \text{ per hour}$$

Selling Price of the Job No. CW 7083

Direct Material	Rs. 2,100.00
Direct Wages	660.00
Factory Overheads(* Refer to overhead summary statement below)	<u>1078.00</u>
Factory Cost	3,838.00
Add : Mark-up (30% of Rs. 3,838)	<u>1,151.40</u>

*** Overhead Summary Statement**

Deptt.	Basis	Hours	Rate/Hour	Overhead Rs.
Machining	Machine hour	180	4.50	810.00
Assembly	Direct labour hour	120	1.40	168.00
Packing	Direct labour hour	40	2.50	100.00
				1,078.00

(4 MARKS)(iv) **Department wise statement of total under or over recovery of overheads :**

(a) Under Current Policy

	Department			
	Machining	Assembly	Packing	Total
	Rs.	Rs.	Rs.	Rs.
Direct Wages (Actual)	96,000	2,70,000	90,000	
Overheads recovered @ 125% of Direct Wages	1,20,000	3,37,500	1,12,500	5,70,000
Actual Overhead	3,90,000	84,000	1,35,000	6,09,000
(Under)/Over-recovery of overheads	(2,70,000)	2,53,500	(22,500)	(39,000)

(b) As per method suggested

	Department			
	Machining	Assembly	Packing	Total
Basis	96,000 Machine hrs.	90,000 labour hrs.	60,000 labour hrs	
Rate/hour (Rs.)	4.50	1.40	2.50	
Overhead Recovered (A)	4,32,000	1,26,000	1,50,000	7,08,000
Actual Overhead (B)	3,90,000	84,000	1,35,000	8,09,000
Under/Over recovery (A-B)	42,000	42,000	15,000	99,000

(3 MARKS)

ANSWER-5**Stores Ledger Control A/c**

Particulars	(Rs.)	Particulars	(Rs.)
To Balance b/d	90,000	By Work in Process Control A/c	4,80,000
To General Ledger Adjustment A/c	4,80,000	By Overhead Control A/c	60,000
To Work in Process Control A/c	2,40,000	By Overhead Control A/c (Deficiency)	18,000*
		By Balance c/d	2,52,000
	8,10,000		8,10,000

*Deficiency assumed as normal (alternatively can be treated as abnormal loss)

(2 MARKS)

Work in Process Control A/c

Particulars	(Rs.)	Particulars	(Rs.)
To Balance b/d	1,80,000	By Stores Ledger Control A/c	2,40,000
To Stores Ledger Control A/c	4,80,000	By Costing P/L A/c (Balancing figures being Cost of finished goods)	12,00,000
To Wages Control A/c	1,80,000	By Balance c/d	1,20,000
To Overheads Control A/c	7,20,000		
	15,60,000		15,60,000

(3 MARKS)

Overheads Control A/c

Particulars	(Rs.)	Particulars	(Rs.)
To Stores Ledger Control A/c	60,000	By Work in Process Control A/c	7,20,000
To Stores Ledger Control A/c	18,000	By Balance c/d* (Under absorption)	1,38,000
To Wages Control A/c (Rs. 2,10,000- Rs.1,80,000)	30,000		

To Gen. Ledger Adjust. A/c	7,50,000		
	8,58,000		8,58,000

*Alternatively may be transferred to Costing P& L A/c

(2 MARKS)

Costing Profit & Loss A/c

Particulars	(Rs.)	Particulars	(Rs.)
To Work in Process Control A/c	12,00,000	By Gen. Ledger Adjust. A/c (Sales) (12,00,000+1,20,000)	13,20,000
To Gen. Ledger Adjust. A/c (Profit)	1,20,000		
	13,20,000		13,20,000

General Ledger Adjustment A/c may also be written as Cost Ledger Control A/c

(3 MARKS)

ANSWER-6

Workings:

	Skilled	Unskilled
Standard Rate per hour	80	60
Standard time for producing one unit	1.5 hours (Rs.120 ÷ Rs.80)	1.5 hours (Rs.90 ÷ Rs.60)
Actual hours paid (AH _{Paid})	6,600 hours	5,400 hours
Standard hours required to produce 4,000 units (SH)	6,000 hours (1.5 hours× 4,000 units)	6,000 hours (1.5 hours× 4,000 units)
Actual hours worked (AH _{Worked})	$\frac{6,600}{100} \times 97.5$ = 6,435 hours	$\frac{5,400}{100} \times 97.5$ = 5,265 hours
Revised Std. Hours (RSH)	$\left(\frac{6,600 + 5,400}{100} \times 97.5\right) \times 0.5$ = 5,850 hours	$\left(\frac{6,600 + 5,400}{100} \times 97.5\right) \times 0.5$ = 5,850 hours
Idle time _{Abnormal}	6,600-6,435 = 165 hours	5,400 – 5,265 = 135 hours

(3 MARKS)

- (i) Labour Rate Variance = $AH_{\text{Paid}} (\text{Std. Rate} - \text{Actual Rate})$
- Skilled = 6,600 hours (Rs.80 – Rs.87.50) = Rs.49,500 (A)
 - Unskilled = 5,400 hours (Rs.60 – Rs.55) = Rs.27,000 (F)
 - = Rs.22,500 (A)
- (ii) Labour Efficiency Variance = $\text{Std. Rate} (SH - AH_{\text{Worked}})$
- Skilled = Rs.80 (6,000 hours – 6,435 hours) = Rs.34,800 (A)
 - Unskilled = Rs.60 (6,000 hours – 5,265 hours) = Rs.44,100 (F)
 - = Rs.9,300 (F)
- (iii) Labour Mix Variance = $\text{Std. Rate} (RSH - AH_{\text{Worked}})$
- Skilled = Rs.80 (5,850 hours – 6,435 hours) = Rs.46,800 (A)
 - Unskilled = Rs.60 (5,850 hours – 5,265 hours) = Rs.35,100 (F)
 - = Rs.11,700 (A)
- (iv) Labour Yield Variance = $\text{Std. Rate} (SH - RSH)$
- Skilled = Rs.80 (6,000 hours – 5,850 hours) = Rs.12,000 (F)
 - Unskilled = Rs.60 (6,000 hours – 5,850 hours) = Rs.9,000 (F)
 - = Rs.21,000 (F)
- (v) Labour Idle time Variance = $\text{Std. Rate} \times \text{Idle time}_{\text{Abnormal}}$
- Skilled = Rs.80 × 165 hours = Rs.13,200 (A)
 - Unskilled = Rs.60 × 135 hours = Rs.8,100 (A)
 - = Rs.21,300 (A)
- (vi) Variable Overhead Expenditure Variance
- = $AH_{\text{Worked}} (SR - AR)$
- = 11,700 hours $\left(\frac{Rs.75}{2 \times 1.5 \text{ hours}} - \frac{Rs.2,85,000}{11,700 \text{ hours}} \right)$
- = 11,700 hours (Rs.25 – Rs.24.36) = Rs.7,488 (F)
- (vii) Variable Overhead Efficiency Variance
- = $\text{Std. Rate} (SH - AH_{\text{Worked}})$
- = Rs.25 (12,000 – 11,700) = Rs.7,500 (F)

(7*1 = 7 MARKS)