



**SUGGESTED SOLUTION**

**INTERMEDIATE MAY 2019 EXAM**

**SUBJECT – COSTING**

**Test Code - CIM 8117**

**BRANCH - () (Date :)**

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**Answer 1:**

**(i) Statement of cost allocation to each product from each activity**

	Product			
	M (Rs.)	S (Rs.)	T (Rs.)	Total (Rs.)
Power (Refer to working note)	40,000 (10,000 kWh × Rs.4)	80,000 (20,000 kWh × Rs.4)	60,000 (15,000 kWh × Rs.4)	1,80,000
Quality Inspections (Refer to working note)	1,05,000 (3,500 inspections × Rs.30)	75,000 (2,500 inspections × Rs. 30)	90,000 (3,000 inspections × Rs. 30)	2,70,000

**Working note :**

**Rate per unit of cost driver:**

Power	(Rs. 2,00,000 / 50,000 kWh)	Rs. 4/kWh
Quality Inspection	(Rs. 3,00,000 / 10,000 inspections)	Rs. 30 per inspection

**(ii) Computation of cost of unused capacity for each activity:**

	(Rs.)
Power (Rs.2,00,000 – Rs. 1,80,000)	20,000
Quality Inspections (Rs.. 3,00,000 – Rs. 2,70,000)	30,000
<b>Total cost of unused capacity</b>	<b>50,000</b>

**(iii) Factors management consider in choosing a capacity level to compute the budgeted fixed overhead cost rate:**

- Effect on product costing & capacity management
- Effect on pricing decisions.
- Effect on performance evaluation
- Effect on financial statements

- Regulatory requirements.
- Difficulties in forecasting chosen capacity level concepts.

**Answer 2:**

Cost sheet for the year ended 31<sup>st</sup> March, 2018.

Units produced – 14,000 units

Unit sold – 14,153 units

Particulars	Amount (Rs.)
Raw material purchased	42,25,000
<b>Add</b> : Freight Inward	1,00,000
<b>Add</b> : Opening value of raw material	2,28,000
<b>Less</b> : Closing value of raw materials	(3,05,000)
	42,48,000
Less : Sale of scrap of material	8,000
Material consumed	42,40,000
Direct Wages (12,56,000 + 1,50,000)	14,06,000
<b>Prime Cost</b>	56,46,000
Factory overheads (20% of Rs. Prime Cost)	11,29,200
<b>Add</b> : Opening value of W – I – P	1,92,500
<b>Less</b> : Closing value of W – I – P	(1,40,700)
<b>Factory Cost</b>	68,27,000
<b>Add</b> : Administrative overheads	1,73,000
<b>Cost of Production</b>	70,00,000
<b>Add</b> : Value of opening finished stock	6,08,500

<b>Less : Value of closing finished stock</b>	
[Rs. 500(70,00,000/14,000) × 1,064]	
(1,217 + 14,000 – 14,153 = 1,064 units)	(5,32,000)
<b>Cost of Goods Sold</b>	70,76,500
Distribution expenses (Rs. 16 × 14,153 units)	2,26,448
<b>Cost of Sales</b>	73,02,948
Profit (Balancing figure)	14,43,606
Sales (Rs. 618 × 14,153 units)	87,46,554

**Answer 3:**

#### Effective Machine Running Hours

No. of working days for the year = 300

Total number of working hours @ 8 hours per day	2,400 hrs
Less: Machine maintenance time	<u>400</u> hrs
Effective machine hours	<u>2,000</u> hrs.

#### Calculation for machine hour rate:-

Cost of Electricity: 2000 hrs x 15 units x Rs. 2.00 per unit	Rs.60,000
Cost of Heating: Rs. 2500 x 12 months	30,000
Maintenance Cost: (Rs. 500 ÷ 6) x 300 days	25,000
Operators Cost: [(3 x Rs. 450) + 40% of (3 X 450)] ÷ 6 x 50 weeks	15,750
Departmental and General Overheads	
Allocation of last year	= Rs. 60,000
Expected increase 12.5%	<u>= 7,500</u>
	67,500
allocation for one machine:- Rs. 67,500 ÷ 6	11,250

Depreciation :

Cost of machine	= Rs. 7,50,000	
Less : Scrap	<u>30,000</u>	
	7,20,000	
Depreciation for one year = Rs. 7,20,000 ÷ 15	=	<u>48,000</u>
		<u>1,90,000</u>
Machine hour rate = Rs. 1,90,000 ÷ 2,000 hrs		<u>= Rs. 95.00</u>

**Answer 4:**

(i) **RST Limited's Statement of operating income and gross margin percentage for each of its three distribution channel**

	General Super Market Chains	Drugstore Chains	Chemist Shops	Total
Revenues: (Rs.)	2,80,41,750 (330 × Rs. 84,975)	2,38,21,875 (825 × Rs. 28,875)	1,49,73,750 (2,750 × Rs. 5,445)	6,68,37,375
Less: Cost of goods sold: (Rs.)	2,72,25,000 (330 × Rs. 82,500)	2,26,87,500 (825 × Rs. 27,500)	1,36,12,500 (2,750 × Rs. 4,950)	635,25,000
Gross Margin: (Rs.)	8,16,750	11,34,375	13,61,250	33,12,375
Less: Other operating costs: (Rs.)				8,27,970
Operating income: (Rs.)				24,84,405
Gross Margin	2.91%	4.76 %	9.09%	4.96%
Operating income %				3.72

(ii) **Computation of rate per unit of the cost allocation base for each of the five activity areas for April 20X7**

	(Rs .)
Customer purchase order processing (Rs.. 2,20,000/ 5,500 orders)	40 order
Line item ordering (Rs.. 1,75,560/ 58,520 line items)	3 line item order
Store delivery (Rs. 1,95,250/ 3,905 store deliveries)	50 delivery
Cartons dispatched (Rs. 2,09,000/ 2,09,000 dispatches)	1 dispatch
Shelf-stocking at customer store (Rs.) (Rs. 28,160/ 1,760 hours)	16 hour

(iii) Operating Income Statement of each distribution channel in April-20X7 (Using the Activity based Costing information)

	General Super Market Chains	Drugstore Chains	Chemist Shops
Gross margin (Rs..) : (A) (Refer to (i) part of the answer)	816750	1134375	1361260
Operating cost (Rs..) : (B) (Refer to working note)	162910	190410	474650
Operating Income (Rs.) : (A – B)	653840	943965	886600
Operating income (in %)  (Operating income / Revenue) x 100	2.33	3.96	5.96

**Comments and new insights :** The activity-based cost information highlights, how the 'Chemist Shops' uses a larger amount of RST Ltd.'s resources per revenue than do the other two distribution channels. Ratio of operating costs to revenues, across these markets is:

General supermarket chains (Rs. 1,62,910/ Rs.. 2,80,00,750) × 100	0.58%
Drug store chains (Rs. 1,90,410/ Rs. 2,38,21,875) × 100	0.80%
Chemist shops (Rs. 4,74,650/ Rs. 1,49,73,750) ×100	3.17%

**Working note:**

**Computation of operating cost of each distribution channel:**

	<b>General Super Market Chains (Rs.)</b>	<b>Drugstore Chains (Rs.)</b>	<b>Chemist Shops (Rs.)</b>
Customer Purchasing order processing	15400 (Rs.0.40 x 385 orders)	39600 (Rs.0.40 x 990 orders)	165000 (Rs.0.40 x 4125 orders)
Line item ordering	16170 (Rs. 3 x 14 x 385)	35640 (Rs. 3 x 12 x 990)	123750 (Rs. 3 x 10 x 4125)
Store Delievery	16500 (Rs. 50 x 330 delivery)	41250 (Rs. 50 x 825 delivery)	137500 (Rs. 50 x 2750 delivery)
Cartons Dispatched	99000 (Rs. 1 x 300 cartons x 300 deliveries)	66000 (Rs. 1 x 80 cartons x 825 deliveries)	44000 (Rs. 1 x 16 cartons x 2750 deliveries)
Shelf Stocking	15840 (Rs. 16 x 330 deliveries x 3 Av. Hrs.)	7920 (Rs. 16 x 825 deliveries x 0.6 Av. Hrs.)	4400 (Rs. 16 x 2750 deliveries x 0.1 Av. Hrs.)
Operating Cost	162910	190410	474650

**iv) Challenges faced in assigning total operating cost of Rs. 8,27,970:**

- Choosing an appropriate cost driver for activity area.

- Developing a reliable data base for the chosen cost driver.
- Deciding, how to handle costs that may be common across several activities.
- Choice of the time period to compute cost rates per cost driver.
- Behavioral factors.

**Answer 5:**

**(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

**(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

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

	Equivalent	Rs.
	Completed Units	



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 =  $\frac{Rs.30,000}{24,000} = Rs. 1.25$

**Answer 6:**

**(a) Statement showing the distribution of overheads (primary distribution)**

Items of costs	Basis of apportionment	Total	Production Departments			Service Departments	
			A	B	C	X	Y
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Direct wages	Only service depts.	10,000	-	-	-	7,500	2,500
Rent and rates	Floor space@ Rs. 2.50 per sq. mtr. (Rs. 25,000 ÷ 10000)	25,000	5,000	6,250	7,500	5,000	1,250
General lighting	Lighting points (nos.) @ Rs. 50 per point(Rs. 3,000 ÷60)	3,000	500	750	1,000	500	250
Indirect wages	Direct wages (15%)	7,500	2,250	1,500	2,250	1,125	375
Power	H.P. @ Rs. 50 (Rs. 7,500 ÷ 150)	7,500	3,000	1,500	2,500	500	-
Depreciation	Cost of m/c @4%*	50,000	12,000	16,000	20,000	1,000	1,000
Sundries	Direct wages @ Rs 1	50,000	15,000	10,000	15,000	7,500	2,500
	Total (i)	1,53,000	37,750	36,000	48,250	23,125.	7,875

\* (50,000/12,50,000) x 100 = 4%

**Redistribution of Service Departments Expenses to Production Departments**

Departments	Total	A	B	C	X	Y
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X (given ratios)		4,625	6,937	9,250	(23,125)	2,313
Y		4,075	2,038	3,056	1,019	(10,188)
X		204	306	407	(1,019)	102
Y		41	20	31	10	(102)
X		2	3	5	(10)	-
Total (ii)		8,947	9,304	12,749	(23,125)	(7,875)
Grand Total (i) + (ii)	1,53,000	46,697	45,304	60,999	-	-
Production hours worked		6,226	4,028	4,066		
Overhead rate		7.50	11.25	15.00		

(b)

Direct material cost (given)	Rs.250.00
Direct labour cost	<u>150.00</u>
Prime cost	<u>400.00</u>

**Production overheads:**

Departments	Hours	Rate	Amount	
A	4	Rs. 7.50	Rs. 30.00	
B	5	11.25	56.25	
C	3	15.00	45.00	131.25
Total cost of production				531.25