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SUGGESTED SOLUTION

INTERMEDIATE MAY 2019 EXAM

SUBJECT – COSTING & FM

Test Code - CIM 8090

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
Total cost of unused capacity	50,000

(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:

Statement of Working Capital Requirement for PQ Ltd

		Rs.	Rs.
A.	**Current Assets**		
(i)	Inventories :		
	Material (1 Month) $\left(\frac{\text{Rs.45,00,000}}{\text{12 months}} \text{ x 1 month}\right)$	3,75,000	
	Finished goods (1 Month) $\left(\frac{\text{Rs.1,35,00,000}}{\text{12 months}} \text{ x 1 month}\right)$	11,25,000	15,00,000
(ii)	Receivables (Debtors)		
	For Domestic Sales $\left(\frac{\text{Rs.90,00,000}}{\text{12 months}} \text{ x 1 month}\right)$	7,50,000	
	For Export Sales $\left(\frac{\text{Rs.45,00,000}}{\text{12 months}} \text{ x 3 months}\right)$	11,25,000	18,75,000
(iii)	Cash in hand and at bank (Rs.10,00,000 – Rs.5,00,000)		5,00,000
	Total Current Assets		38,75,000
B.	**Current Liabilities :**		
(i)	Payables (Creditors) for materials (2 months) $\left(\frac{\text{Rs.45,00,000}}{\text{12 months}} \text{ x 2 months}\right)$		7,50,000
(ii)	Outstanding wages (0.5 months) $\left(\frac{\text{Rs.36,00,000}}{\text{12 months}} \text{ x 0.5 month}\right)$		1,50,000
(iii)	Outstanding manufacturing expenses $\left(\frac{\text{Rs.54,00,000}}{\text{12 months}} \text{ x 1 month}\right)$		4,50,000
(iv)	Outstanding administrative expenses $\left(\frac{\text{Rs.12,00,000}}{\text{12 months}} \text{ x 1 month}\right)$		1,00,000
(v)	Income tax payable (Rs.15,00,000 ÷ 4)		3,75,000
	Total Current Liabilities		18,25,000
	Net Working Capital (A-B)		20,50,000

	Add : 15% contingency margin		3,07,500
	Total Working Capital required		23,57,500

Working Note:

1. Calculation of Cost of Goods Sold and Cost of Sales

	Domestic (Rs.)	Export (Rs.)	Total (Rs.)
Sales	1,20,00,000	54,00,000	1,74,00,000
Less: Gross profit @ 25% on domestic sales and 16.67% on export sales (Working note-2)	(30,00,000)	(9,00,000)	(39,00,000)
Cost of Goods Sold/ Cash Cost of Sales	90,00,000	45,00,000	1,35,00,000

2. Calculation of gross profit on Export Sales:

Let domestic selling price is Rs.100. Gross profit is Rs.25, and then cost per unit is Rs.75

Export price is 10% less than the domestic price i.e. Rs.100 – (1- 0.1) = Rs.90

Now gross profit will be Rs.90 - Rs.75 = Rs.15

Therefore, Gross profit at domestic price will be $\frac{\text{Rs.15}}{\text{Rs.100}} \text{ x } 100 = 15\%$

Or, gross profit at export price will be $\frac{\text{Rs.15}}{\text{Rs.90}} \text{ x } 100 = 16.67\%$

Assumptions

(i) It is assumed that administrative expenses relating to production activities.

(ii) Value of opening and closing stocks are equal.

(iii) Receivables are calculated based on cost of goods sold

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	400 hrs

Effective machine hours 2,000 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%	= 7,500	
	67,500	
allocation for one machine:- Rs. 67,500 ÷ 6		11,250
Depreciation :		
Cost of machine	= Rs. 7,50,000	
Less : Scrap	30,000	
	7,20,000	
Depreciation for one year = Rs. 7,20,000 ÷ 15	=	48,000
		1,90,000

Machine hour rate = Rs. 1,90,000 ÷ 2,000 hrs = Rs. 95.00

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:

	General Super Market Chains (Rs.**)**	**Drugstore Chains (**Rs.**)**	**Chemist Shops (**Rs.**)**
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:

Statement of Estimation of Working Capital Needs

		Rs.	Rs.
A.	**Current Assets**		
	(i) Inventories :		
	- Raw Materials $\left(\frac{1{,}04{,}000 \text{ units x Rs.98}}{52 \text{ weeks}} \text{x 3 weeks}\right)$	5,88,000	
	- Work-in-process		
	Materials $\left(\frac{1{,}04{,}000 \text{ units x Rs.98}}{52 \text{ weeks}} \text{x 2 weeks}\right)$	2,94,000	
	Labour & Overheads $\left(\frac{1{,}04{,}000 \text{ units x Rs.126}}{52 \text{ weeks}} \text{x 2 weeks}\right) \text{x } 0.75$	3,52,800	
	- Finished goods $\left(\frac{1{,}04{,}000 \text{ units x Rs.224}}{52 \text{ weeks}} \text{x 4 weeks}\right)$	17,92,000	30,26,800
	(ii) Receivables $\left(\frac{1{,}04{,}000 \text{ units x Rs.224}}{52 \text{ weeks}} \text{x 2.5 weeks}\right) \text{x } 0.75$		8,40,000
	(iii) Cash in hand		2,25,000
	Total Current Assets		40,91,800
B.	**Current Liabilities :**		
	(i) Payable to suppliers $\left(\frac{1{,}04{,}000 \text{ units x Rs.98}}{52 \text{ weeks}} \text{x 3.5 weeks}\right)$		6,86,000
	(ii) Direct wages payables $\left(\frac{1{,}04{,}000 \text{ units x Rs.53}}{52 \text{ weeks}} \text{x 2 weeks}\right)$		2,12,000
	(iii) Overheads payables $\left(\frac{1{,}04{,}000 \text{ units x Rs.73}}{52 \text{ weeks}} \text{x 1.5 weeks}\right)$		2,19,000
			11,17,000
	Net Working Capital (A-B)		29,74,800
	Add : Provision for contingencies (4% of total Working Capital requirement)		1,23,950

	Working Capital requirement		30,98,750

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 fates	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
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	150.00
Prime cost	400.00

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