

## Overheads with Activity Based Costing

Time Allowed : 35 Minutes

TEST – 9 (Solution)

Total: 20 Marks

Answer to Question no.1:

**COST APPORTIONMENT**

- 1) For the purpose of distribution of common expenses among various cost objects, it is always advised to adopt the system of “**Cost Allocation**” as it represents perfect manner of distribution of expenses.
- 2) If cost allocation is not possible due to practical difficulties, in such a case, the system of cost apportionment may be adopted. Here, the common expenses are distributed on some appropriate basis.
- 3) **Example:-**
  - (a) If canteen facility is provided to various employees working in various departments, in such a case, the expenditure on providing such facility may be apportioned on the basis of number of workers.
  - (b) Electricity bill may be apportioned on the basis of no. of Light Point.
  - (c) Expenses like rent, municipal taxes, repairs, etc. can be apportioned on the basis of Floor Area.
- 4) Various types of basis of overhead apportionment can be classified in following two parameters:-
  - (a) Potential Benefit (Here, fixed expenses are apportioned on this basis).
  - (b) Actual Benefit (Here, variable expenses are apportioned on this basis).

Answer to Question no.2:

**(i) Secondary Distribution [Step Ladder Method]**

	Main Departments			Service Departments	
	Purchase	Packing	Distribution	Maintenance	Personnel
As per Primary Distribution	5,00,000	8,00,000	3,50,000	6,40,000	3,20,000
Expense of maintenance re-distributed to Purchases Packing , Distribution & Personnel (in ratio of Area)	1,92,000	2,40,000	1,12,000	(6,40,000)	96,000
Expense of Personnel re-distributed to Purchase, Packing and Distribution (in ration of Workers)	1,04,000	2,21,000	91,000		(4,16,000)
<b>Total</b>	<b>7,96,000</b>	<b>12,61,000</b>	<b>5,53,000</b>	<b>NIL</b>	<b>NIL</b>

**(ii) Total Labour Hours:-**

Purchase Department = 12 X 365 X 800 = 35,04,000 hours.

Packing Department = 24 X 365 X 1,700 = 1,48,92,000 hrs.

Distribution Department = 8 X 365 X 700 = 20,44,000 hrs.

Labour Hour Rate =  $\frac{\text{Total Overheads to be recovered}}{\text{Total Labour Hours}}$ Purchase Department =  $\frac{\text{₹ } 7,96,000}{35,04,000 \text{ hrs.}} = 0.227/\text{hr.}$ Packing Department =  $\frac{\text{₹ } 12,61,000}{1,48,92,000 \text{ hrs.}} = 0.085/\text{hr.}$ Distribution Department =  $\frac{\text{₹ } 5,53,000}{20,44,000 \text{ hrs.}} = 0.271/\text{hr.}$

**Answer to Question no.3:**

**Determination of Cost Recovery Rates**

**Activity 1**

$$\begin{aligned} \text{Direct Labour Hours} &= \frac{\text{Total Cost of ₹ 3,00,000}}{30,000 \text{ Labour Hour}} \\ &= ₹ 10 \text{ per labour hour.} \end{aligned}$$

**Activity 2**

$$\begin{aligned} \text{Production Runs} &= \frac{\text{Total Cost of ₹ 1,80,000}}{600 \text{ production runs}} \\ &= ₹ 300 \text{ per production run.} \end{aligned}$$

**Activity 3**

$$\begin{aligned} \text{Quality Inspection} &= \frac{\text{Total Cost of ₹ 2,40,000}}{8,000 \text{ inspections.}} \\ &= ₹ 30 \text{ per inspection.} \end{aligned}$$

(i) Allocation of Cost to the products:-

Activity	Product P	Product Q	Product R	Total
Direct Labour (₹ 10/hr.)	10,000 X 10 = 1,00,000	8,000 X 10 = 80,000	6,000 X 10 = 60,000	2,40,000
Production Runs (₹ 300/run)	200 X 300 = 60,000	180 X 300 = 54,000	160 X 300 = 48,000	1,62,000
Quality Inspections (₹ 30 per inspection)	3,000 X 30 = 90,000	2,500 X 30 = 75,000	1,500 X 30 = 45,000	2,10,000
	<b>2,50,000</b>	<b>2,09,000</b>	<b>1,53,000</b>	<b>6,12,000</b>

(ii) Cost of Unused Capacity

$$= \text{Total Cost} - \text{Cost of Used Capacity}$$

Direct Labour	= 3,00,000	-2,40,000	= ₹ 60,000
Production Runs	= 1,80,000	-1,62,000	= ₹ 18,000
Quality Inspections	= 2,40,000	-2,10,000	= ₹ 30,000

(iii) Determination of Sales Value per quarter in relation to a potential customer:-

Direct Material Cost (1,500 units)	₹ 18,000
Initial Design Cost $\left( \frac{₹ 30,000}{12,000 \text{ Units}} \times 1,500 \text{ Units} \right)$	₹ 3,750

**Overheads**

Activity 1 (1,500 Direct Labour Hrs. @ ₹ 10/hr.)	₹ 15,000
Activity 2 (15 Production Runs @ ₹ 300/runs)	₹ 4,500
Activity 3 (250 Quantity Inspections @ ₹ 30)	₹ 7,500
Total Cost	₹ 48,750
(+) Desired Profit (20% on cost)	₹ 9,750
Sales Value/Quarter	₹ 58,500