

## OVERHEAD COSTING

1. The Prabhat Ltd.' is divided into two production cost centers A and B, and two service cost centers X and Y. The following is the summary of overhead costs for a particular period. Works Manager's Salary 4,000; Power 21,000; Contribution to PF 9,000; Rent 6,000; Plant Maintenance 4,000. Canteen expenditure 12,000; Depreciation of Plant and Machinery 20,000.

The following information is made available from the various departments.

	DEPT. A	DEPT. B	DEPT. X	DEPT. Y
No. of Employees	16	8	4	4
Area Sq. Ft.	2,000	3,000	500	500
Value of Plant	75,000	1,00,000	25,000	
Wages	40,000	20,000	10,000	5,000
Horse Power	3	3	1	-

Apportion the costs to the various departments on the most equitable basis.

[Ans: A: 32,800; B: 30,400; X: 9,700; Y: 3,100]

2. In a factory there 5 machines, you are required to calculate Machine hour rate from the following data.

Space of the Department:	8,000Sq.ft.
Cost of machine:	20,000
Space occupied by each machine:	1,600Sq.ft.
Power consumed as indicated by meter is 3,000 p.a. for this machine.	
Depreciation:	7.5 % p.a
Estimated life 10 years (working hours 2,000 p.a)	
Estimated Repairs p.a. for this machine:	520
Rent & Rate:	9,000+
Lighting:	750+ for all machines
Supervision:	1,500
Other charge:	4,000+

2/5 of the supervision is for this machine. There are three mechanics drawing 50, 60, 70 p.m respectively.

[Ans: Machine hour rate 4.401]

3. You are required to calculate the machine hour rate from the following particulars.

- Cost of the machine 10,000/- its estimated working life is 10 years and the estimated scrap value at the end of its life is 1,000. The estimated working lime per year (50 weeks of 40 hours each) is 2,000 hours.
- Electricity used by the machine is 16 units per hour at the cost of 0.10 per unit.
- The machine requires a chemical solution which is replaced at the end of each week a/ cost of 20/- each time.
- The estimated cost of maintenance per year is 1200.
- Two attendants control the operation on the machine together with five other identical machines their combined week wages amount to 120.
- Departmental and General Works overheads allocated to the machine for the year were 2,000.

[Ans: Machine Hour Rate: 4.65]

4. XYZ manufactures household pumps which pass through three department's viz. Foundry, Machine Shop and Assembling.

The manufacturing expenses are as follows:

	Foundry	Machine	Assembling	Total
Direct wages	0,000	50,000	10,000	70,000
Works Overhead	5,000	90,000	10,000	1,05,000

The factory cost of manufacturing a type of 'C' pump was prepared by the company as follows:

Material:	16
Wages: Foundry	2
Machine Shop	4
Assembling	2
Works Overhead:	
150% of Direct Wages	12
<b>Total</b>	<b>36</b>

It seems that there is some fallacy. Try to correct it.

[Ans: Correct Factory Cost 34.20]

5. The following are the maintenance costs incurred in a machine shop for six months with corresponding machine hours.

MONTH	MACHINE HOURS	MAINTENANCE COSTS
January	2,000	300
February	2,200	320
March	1,700	270
April	2,400	340
May	1,800	280
June	1,900	290
	12,000	1,800

**Analyse the Machine cost which is semi variable into Axed and variable element.**

**[Ans: Variable cost per machine hour = 0.10; Fixed cost 100]**

6. From the following data segregate fixed cost and variable cost:

	Level of Activity	
Capacity (%)	80	100
Labour Hours	400	500
Maintenance expenses of a plant (T)	2,600	2,750

**[Ans: Variable Cost per hour 1.5; Fixed Cost 2,000]**

7. In a factory, there are two service departments P and Q and three production departments A, B and C. In April 2015, the departmental expenses were:

Departments	A	B	C	P	Q
RS	6,50,000	6,00,000	5,00,000	1,20,000	1,00,000

The service department expenses are allotted on a percentage basis as follows:

Service Departments	Production Depts.			Service Depts.	
	A	B	C	P	Q
P	30	40	15		15
Q	40	30	25	5	

Prepare a statement showing the distribution of the two service departments' expenses to the three dependents by

- a) Simultaneous Equation Method
- b) Repeated Distribution Method.

**[Ans: Total Cost: A - 7, 35,340: B - 6, 86,045 and C-5, 48,615]**

8. The monthly budget of a department is as under:

Direct material	45,000
Direct wages	60,000
Overheads	90,000
Direct labour hours	15,000
Machine hours	30,000

**Find out the overhead recovery rate based on at least five different possible methods of absorption of overheads.**

**[Ans: Direct Material Cost method 200%; Direct Labour Cost Method 150%; Prime Cost Method 85.71%; Direct Labour Hour Rate Method 7; Machine Hour Rate Method 3]**

9. The following particulars were extracted from the records of Epsilon Ltd. on 31" December:

	Dept. A	Dept. B	Dept. C
Overhead incurred	2,000	1,500	2,500
Overhead absorbed	2,200	1,400	2,250

The departmental loads during the three months to 31<sup>st</sup> December averaged:

Dept. A	100% of Normal Capacity
Dept. B	75% of Normal Capacity
Dept. C	SOP of Normal Capacity

How would you deal with the balances under or over-absorbed? What preliminary enquiries would you make?

[Ans: Dept. A Over-absorbed 200

Dept. B under-absorbed 100

Dept. C Under-absorbed 250]

10. The overhead expenses of a factory are allowed on the machine hour method. You are required to calculate the hourly rate for a certain machine from the following information:

Cost	58,000
Estimated scrap value	3,000
Estimated working life	20,000 hours
Estimated cost of maintenance during working life of machine	12,000
Power used for machine	1 per hour
Rent, rates etc. per month (10% to be charged for this machine)	1,500
Normal machine running hours during a month	180 hours
Standing charges other than rent, rates etc. per month	200

[Ans: 6.30]

