

7. 2067. Q. No. 8

A manufacturing company having following production department and service department provides you the information as follows:

	Production department		Service department
	'A'	'B'	'S'
Space occupied in sq. ft.	400	600	200
Machine operating hours	2000	3000	1000
No. of employees	40	30	10
Depreciation per year	10%	15%	10%
Light points	8	6	2
Value of machine (Rs.)	100,000	150,000	50,000
Labour hours worked	1800 hrs.	1200 hrs.	-

The following expenses were incurred for all departments:

Welfare and canteen expenses	Rs.20,000
Rent and rates	Rs.30,000
Power cost for the machine	Rs.42,000
Lighting and heating	Rs.10,000

The service department has provided service to production department A and B in the percentage of 60% and 40% respectively.

**Required:** (1) Statement showing apportionment of overheads (2) Overhead per labour hour after apportioning the cost of service department. [5 + 3]

Ans.: (a) Rs.61,450 and Rs.78,050 (b) Rs.34.14 and Rs.65.04

8. 2066. Q. No. 8

A Manufacturing concern incurred manufacturing overhead costs for three departments on the following costs pools:

Overhead	Amount
Rent	36,000
Welfare expenses	20,000
Fuel	50,000
General overhead	40,000

The basis for apportionment are:

Departments	A	B	C
No. of staffs	20	10	10
Machine hours	5,000	3,000	2,000
Space occupied	750 sq. ft.	1,250 sq. ft.	7,000 sq. ft.

**Required:** (i) Apportionment overhead costs to the departments

(ii) Overhead rate per machine hour

[5 + 3]

Ans.: (i) Rs.58,000; Rs.37,000; Rs.51,000; (ii) Rs.11.6; Rs.12.333; Rs.25.5

9. 2065. Q. No. 8

Papaya Juice Factory incurred the following overheads.

	Rs.		Rs.
Wages of store staff	16,000	Canteen foods	20,000
Rent	24,000	Lighting and heating	10,000
Insurance premium on machines	10,000	Diesel	40,000

The particulars of the operating divisions of the factory are as follows:

	Processing	Pressing	Finishing	Store	Canteen
Number of light points	20	15	5	5	5
Space occupied (sq. m.)	4,000	2,000	1,000	500	500
Machines' cost in thousands of rupees	100	60	20	10	10
Kilowatt of machines	4	2.5	1.5	1	1
Machine operating hours	1,000	1,000	2,000	100	400

Required: (a) Distribution of overhead by using suitable basis.

(b) Find out overhead per machine operating hour.

[6 + 1]

Ans.: (a) Rs.37,000; Rs.22,000; Rs.17,000; Rs.19,400; Rs.24,600 (b) Rs.37, Rs.22, Rs.8.5, Rs.194, Rs.61.5

10. 2064. Q. No. 8, OR.

The picture of the three production departments of the last month are as follows:

Cost items	X	Y	Z
Machines' value (Rs.)	4,00,000	4,00,000	2,00,000
Machines' operating hours	8,000	5,000	5,000
Sales values (Rs.)	6,00,000	4,00,000	4,00,000
Material consumed (kg.)	40,000	30,000	30,000
Number of workers	60	50	50
Depreciation per year	20%	15%	12%

The following expenses were incurred for that month.

Wages office expenses	Rs.32,000	Selling and distribution expenses	
Store overheads	Rs.20,000		Rs.42,000
Power for the machine	Rs.36,000	Cafeteria overheads	Rs.24,000

Required: Overhead per machine operating hours.

[2 + 2 + 2 + 2]

Ans.: X: Rs.8.7084; Y: Rs.10.1; Z: Rs.9.5

11. 2063. Q. No. 8, OR.

The overheads of a factory for the previous month are as follows:

Rent	Rs.8,000	Diesel	Rs.16,000
Salaries	Rs.13,500	General expenses	Rs.10,000

Depreciation charged on entire machine is 12% p.a.

	Boiling section	Filtering section	Packaging section
Indirect material (Rs.)	40,000	20,000	25,000
Indirect wages (Rs.)	20,000	20,000	15,000
Cost of machine (Rs.)	8,00,000	6,00,000	4,00,000
Area used (sq. ft.)	4,000	2,000	2,000
H.P. of machine	40	30	10
Numbers of workers	40	25	25
Labour hours	5,000	4,000	1,000

Required: Overhead per labour hour for each section.

[2 + 2 + 2 + 2]

Ans.: Rs.18.2, Rs.15.4375, Rs.52.75

12. 2062. Q. No. 7

The expense of a garment factory are given below:

Welfare and cafeteria	Rs.60,000
Fuel	Rs.75,000
Rent and lighting	Rs.30,000
Insurance and tax of properties	Rs.25,000

The other necessary particulars are as follows:

	Processing unit I	Processing unit II	Service unit
Number of staff	20	15	5
Area used in sq. meter	3,500	2,000	500
Value of properties	10,00,000	8,00,000	2,00,000
Machine hours	16,000	9,000	-

The service unit has provided service to processing unit I and II in the ratio of 3:2.

Required: (i) Overhead distribution summary (ii) Overhead per machine hour after apportioning the cost of service units.

[5 + 2 + 1]

Ans.: (a) Rs.1,15,500 & Rs.74,500; (b) Rs.7.2188 & Rs.8.2778

13. 2061. Q. No. 7

In a certain factory there are two production departments, P<sub>1</sub>, and P<sub>2</sub> two service departments S<sub>1</sub> and S<sub>2</sub>. Following are the particulars of a month of 25 working days of 8 hours each:

Departments	P <sub>1</sub>	P <sub>2</sub>	S <sub>1</sub>	S <sub>2</sub>
Direct wages (Rs.)	40,000	30,000	20,000	10,000
Value of plant (Rs.)	2,00,000	1,50,000	1,00,000	50,000
Area (sq. mtr)	5,000	4,000	3,000	2,000
Number of light points	10	8	7	5
Horse power of plant	50	40	30	10
Number of workers	20	25	30	15

Total expenses of service departments S<sub>1</sub> and S<sub>2</sub> are apportioned in the ratio of 3:2 to departments P<sub>1</sub> and P<sub>2</sub> respectively. The expenses for the month were:

Indirect wages	Rs.20,000	Lighting	Rs.6,000
Power	Rs.10,400	Rent	Rs.28,000
Depreciation on plant	Rs.5,000		

Required: Labor hour rate for each of the production department by preparing the overhead distribution statement. [8]

Ans.: Rs.14.465 and Rs.8.308

14. 2061. Q. No. 7, 2nd, OR

The extracts out of the expenditure books of a manufacturing firm are stated below:

Miscellaneous overhead	Rs.12,000	Maintenance of plant	Rs.40,000
Rent	Rs.28,000	Power	Rs.48,000

The operating positions of assembly, finishing and store units are provided below:

	Assembly unit	Finishing unit	Store unit
Cost of the plant in Rs.	400,000	300,000	100,000
Machine hour in operation	32,000	20,000	8,000
Space covered in sq.m.	8,000	5,000	1,000

Required: (i) Primary distribution of overheads (ii) Overhead per machine hour of assembly and finishing units after re-apportioning the cost of store unit in the ratio of 1:1 [5 + 2 + 1]

Ans.: (i) 68,000, 45,000, 15,000 (ii) Rs.2.3594 and Rs.2.625

15. 2060. Q. No. 4, 1st time

The details of cost and other information relating to two production departments are as under:

Power	Rs.3,000 per month
Insurance premium on machine	Rs.3,500 per month
Rent	Rs.3,000 per month
Labor welfare	Rs.1,000 per month
Repair and maintenance	Rs.500 per month

Other information:

Production Department	X	Y
Indirect costs per month:		
Materials in rupees	5,000	2,500
Labor in rupees	2,000	2,000
Value of the machine used in rupees	1,00,000	75,000
Number of employees	60	40
Horse power of machinery used	30	20
Area occupancy (in sq. mt.)	75	25
Operating machine hour per month	6,000	4,000
Depreciation rate per annum	12%	12%

Required: Overhead rate per machine hour for production department X and Y. [2.5 + 2.5]

Ans.: X: Rs.2.5378 Y: Rs.2.2557

**16. 2060. Q. No. 8, 2nd time**

A company has three production departments A, B and C and one service department S. the following information is available regarding various expenses:

Rent	30,000	Power	15,000
Depreciation on machinery	20,000	Indirect wages	11,000
Canteen expenses	3,000	Electricity	6,000

The following further details are available:

Departments	A	B	C	S
Direct Wages (Rs.)	20,000	15,000	15,000	5,000
Floor Area (sq. mt.)	4,000	3,000	2,000	1,000
Light points	9	7	8	6
Cost of machine (Rs.)	100,000	50,000	40,000	10,000
Horse power ratio	4	3	2	1
No. of workers	50	50	40	10

Service rendered by the service department to production departments A, B and C is in the ratio of 2:2:1.

Required: Statement showing the overhead distribution

[8]

Ans.: A: Rs.39,960 B: Rs.29,060, C: Rs.20,980

**17. 2059. Q. No. 10**

The following figures have been extracted from the books of a factory for a certain period:

Direct material consumed	Rs.1,00,000	Direct wages	Rs.2,00,000
Overhead charged to workshop	Rs.50,000	Direct Labor Hours	10,000 hours

On one job carried out in the workshop during the period, the following were the relevant data:

Direct material used	Rs.25,000
Direct wages	Rs.50,000
Direct Labor Hour	2,500 hours

Required: Computation of overhead to the job on the basis of: (a) Direct material cost (b) Direct labor cost (c) Prime cost (d) Labor hour rate.

[2 × 4]

Ans.: (a) Rs.12500 (b) Rs.12500 (c) Rs.12500 (d) Rs.12500

**18. 2058. Q. No. 6 OR.**

A manufacturing company having following production departments provided you the information mentioned as follows:

Departments	A	B
Space occupied in sq. ft.	400	500
No of workers engaged	50	100
H. P. of machine	100	50
Expenses and charges are:	<b>Total</b>	
Depreciation	Rs.19,000	= Rs.11,000
Rent and rate	Rs.27,000	
Power expenses	Rs.36,900	
Welfare and canteen expenses	Rs.15,600	
Other overhead cost	Rs.4,800	= Rs.2,800
Labor hours worked	2,800 hours	= 1,600 hours
		Rs.8,000
		Rs.2,000
		1200 hours

Required: (a) Statement showing apportionment of overhead

(b) Overhead rate per direct labor hour.

[5 + 2]

Ans.: A: Rs.55,600, Rs47,700 & B: Rs34,75; Rs.39.75

19. 2057. Q. No. 10

A Factory department of a company supplied you the following information relating to a job order requiring:

Direct materials cost	Rs.12,500
Direct labor cost	Rs.8,500
Direct labor hour	750 hours
Machine hour	600 hours
The total direct labor hours worked reached	12,000 hours
The total machine hours operated	8,000 hours

The total factory overhead charged to the department includes:

Indirect wages and supervision charges	Rs.51,200
Consumable store	Rs.18,300
Depreciation and power expenses	Rs.26,500

- Required:** (a) Overhead rate per direct labor hour.  
 (b) Overhead rate per machine hour.  
 (c) Cost of a job order under direct labor rate  
 (d) Cost of a job order under machine hour rate.

[8]

Ans.: Rs.8; Rs.12; Rs.27,000; Rs.28,200

20. 2056. Q. No. 10

You are given the following information regarding cost and the operation of factory:

Working days during the year reached to 250 days.

Workers worked 8 hours a day and the machine was operated for 6 hours a day.

Information regarding overhead cost are:

Rent, rates and insurance	Rs.12,000
Indirect wages and supervision cost	Rs.15,000
Consumable store	Rs.5,000
Lighting and heating	Rs.2,000
Hourly repairs and maintenance cost of machine	Rs.1.60
Hourly depreciation charge on machine	Rs.1.20
Power consumption 15 units per hour @ Rs.0.60 per unit.	

- Required:** (a) Overhead rate per direct labor hour (b) Overhead rate per machine hour [4 + 4]

Ans.: (a) Rs.25.85 (b) Rs.34.47

21. 2055. Q. No. 11

In a light engineering factory, the following particulars have been collected:

- (I) Factory overhead for the month Rs.60,000  
 Estimate labor hour for the year 12,000 hours  
 Direct labor hour for the job 1,000 hours
- (II) The factory also uses a machine. The detailed information for the machine is given below:
- |                               |                     |
|-------------------------------|---------------------|
| Cost of machine               | Rs.1,30,000         |
| Life                          | 10 year             |
| Residual value after 10 years | Rs.10,000           |
| Working hours per year        | 12,000 hours        |
| Repair charge                 | 50% of depreciation |
| Electricity charge per month  | Rs.2,000            |
| Other fixed charges per month | Rs.5,000            |
| Supervisor's salary per month | Rs.3,000            |

- Required:** (a) Overhead rate on the basis of labor hour rate

- (b) Overhead rate on the basis of machine hour rate.

[3 + 5]

Ans.: Rs.71.50 per hour; Rs.71.50 per hour

## 22. 2054. Q. No. 6

Calculate labor hour rate for production department I and II working 8 hours a day for 25 working days reporting departmental total cost, allocations of service department cost: [2+1+2]

	Total	Service dept. (Workshop)	Production I	Departments II
Number of workers	50	10	15	25
Space occupied	100	20	20	60
Service received by production depts.				
(in percentage)	100	-	40	60
Supervisor's salary (in Rs.)	13,000	2,000	5,000	6,000
Power and lighting (in Rs.)	1,000	300	300	400
Rent (in Rs.)	5,000			
Welfare (in Rs.)	1,000			

Ans.: Rs.2.67 per hour, Rs.2.40 per hour

## 23. 2054. Q. No. 6, Cancelled

Calculate hourly rate for a machine operating for 4,000 total hours during a year by making a systematic classification of costs

- Outlay for machine Rs.50,000 with Rs.5,000 residual value
- Total working hours of the machine 20,000
- Setting up time 10% of total machine hours
- Power consumption Rs.2 per unit per half hour working
- Repair, maintenance and lubricating oil Rs.9,000 for effective total machine hours
- Annual lighting expenses Rs.3,600
- Machine attendant's annual salary Rs.32,400 per annum.

[2 + 3]

Ans.: Rs.17 per machine hour

## Unit 6: Volume and Activity Based Costing

### Theoretical Questions

## 1. 2072 Q. No. 5

State any two advantages of activity based costing system.

[2]

### Numerical Problems

## 1. 2072 Q. No. 18

A company produces two types of product – A and B. The company recently decided to change volume based costing system to activity based costing system. To assess the effect of the change, the following data have been gathered:

Products	Units	Machine hours	Production run	Prime cost (Rs.)	Material components
A	3,000	9,000	10	10,000	6,000
B	2,000	4,000	5	8,000	8,000

The overhead cost and cost drivers are as follows:

Costs	Cost drivers	Rs.
Machine related activities	Machine hours	39,000
Set up costs	Production runs	30,000
Material handling costs	Nos. of material components	28,000

Required: Unit production cost:

- Using conventional costing system
- Using activity based costing system
- Comment on the results of two methods

[5+8+2=15]

2. 2072 Q.No.16 (Old)

A manufacturing company provides you the following details:

Product	Prime cost (Rs.)	Output units	No. of movements	Machine hours	No. of set ups	No. of orders
A	114,500	8,000	50	7,000	5	200
B	105,250	10,000	30	5,000	9	125
C	80,250	4,000	20	8,000	6	75

The production overhead and cost drivers are as follows:

Items	Rs.	Cost drivers
Material handling cost	70,000	No. of movements
Volume related cost	80,000	Machine hours
Scheduling cost	50,000	No. of set ups
Purchase related cost	100,000	No. of orders

Required: (1) Total cost per unit using machine hours (2) Total cost per unit using activity based costing [6+9]

Ans: (1) A: Rs.27.43; B: Rs.18.02; C: Rs.50.06 (2) A: Rs.30; B: Rs.20; C: Rs.40

3. 2071 Q. No 8 (OR)

An industry adopting activity based costing, is producing two products. Detailed information are as follow:

Products	Outputs (in units)	Raw material per unit	Labour hours per unit	Labour hour rate	MH per unit	No. of pacakets delivered	No. of set-ups	No. of receipts
P <sub>1</sub>	30,000	Rs.8	0.5 hours	Rs.10	3	8	20	30
P <sub>2</sub>	20,000	Rs.6	0.5 hours	Rs.10	2	5	15	20

Overhead cost:

Set up cost	Rs.7,000
Machine related cost	Rs.65,000
Receiving cost	Rs.20,000
Packing cost	Rs.26,000
Total	Rs.118,000

Required: Product cost per unit by using Activity Based Costing Method [8]

Ans: Rs.15.57 and Rs.13.05

4. 2070 Q. No 8

The relevant information of three products made by a company for a period is given below:

	Product X	Product Y	Product Z
Output in units	2,000	3,000	5,000
Direct labour hours per unit	1.5	1	0.8
Number of orders executed	5	2	3
Number of set-ups	2	2	3

The overhead costs and cost drivers are:

Cost items	Cost Drivers	Amount (Rs.)
Production control	Set-ups	14,000
Indirect labour	Direct labour hours	10,000
Material handling and dispatch	Orders executed	6,000

Required: Calculate total overhead costs for each product by using (1) Direct labour hours (2) Activity-based costing. [3+5=8]

Ans: (1) X = Rs.9,000; Y = Rs.9,000; Z = Rs.12,000 (2) X = Rs.10,000; Y = 8,200; Z = Rs.11,800

5. 2069 Q. No 8 (OR)

An industry, adopting activity based costing, is producing two products. The overhead costs incurred by the industry along with their costs drivers are as follows:

Production set up cost	Rs. 30,000	Production run
Machine department cost	Rs. 40,000	Machine hour
Selling & distribution cost	Rs. 20,000	Order execution
Indirect labour cost	Rs. 50,000	DLH

The output and other details of the products are as follows:

Products	Outputs in units	DLH per unit	Machine hour per unit	Production run	Sales per order	Price cost per unit
X	20,000	3	3/4	40	400 units	Rs. 8
Y	10,000	4	1/2	20	200 units	Rs. 5

Required: Total cost per unit of each product. [8]

Ans: Rs. 12.50 and Rs. 10

6. 2068 Q. No 16 (OR)

A manufacturing Company provides following information regarding the products and costs relating to their production:

	Product		
	A	B	C
Units produced	18,000	14,000	10,000
Production runs used	9	7	5
Machine hours per unit	5	4	3
Sales order received	18	14	10
DLHs used per unit	7.5	6	4.5
Raw material per unit Rs.	55	60	48
Variable OH per unit Rs.	21.5	23	11.75

The total production overhead for the period with cost pools are given below:

Cost pools	O.H. cost to cost pools (Rs.)
Material handling & dispatches cost	35,700
Machine handling cost	110,000
Store receiving cost	27,000
Inspecting cost	22,050
Machine set ups cost	27,510
<b>Total OH</b>	<b>222,260</b>

The DLH rate is Rs. 2.5 per hour. The number of requisitions raised on the store were 25 for each product. The production overhead is presently apportioned on the basis of machine hours.

Required: (1) Unit cost under traditional volume based costing system and unit selling price at 20% profit on cost (2) Unit cost under ABC system showing cost driver rate with cost production of each cost pool and unit selling price at 120% of cost. [6 + 9 = 15]

Ans: (i) Unit cost = Rs.101.5643; Rs.103.0514; Rs.74.7885; Selling price = Rs.121.8772;

Rs.123.6617; Rs.89.7462 (ii) Unit cost = Rs.100.905; Rs.103.1729; Rs.75.805;

Selling price = Rs.121.086; Rs.123.08075; Rs.90.966



7. 2066. Q. No. 8 OR

A manufacturing company produces two products namely, A and B.

The information related to products are as follows:

	'A'	'B'
Output in units	6,000	4,000
Labour hour per unit	4	2
Machning hour per unit	2	1
Production run	6	4

Total production overhead recorded and cost driver fixed by cost department is analysed as following:

Cost	Cost driver	Amount (Rs.)
Set up cost	Production run	30,000
Machine department cost	Machine hours	64,000
Scheduling cost	Production run	40,000

Required: (1) Overhead rate by using activity based costing (2) Total overhead cost and cost per unit of A and B under activity based costing.

[6 + 9]

Ans.: (a) Rs.3,000; Rs.4; Rs.4,000 (b) Total cost Rs.90,000 and Rs.44,000; Cost per unit = Rs.15 & Rs.11

8. 2066. Q. No. 16

A manufacturing company manufactures three products namely M, N and O. The details regarding products and their overhead cost and related cost driver for a period are as follows:

Cost pool	Cost (Rs.)	Cost driver
Repair cost	16,000	Machine hour
Scheduling cost	30,000	Production run
Material handling	32,000	Quantity of materials
Set-up cost	30,000	No. of setup

Data for the period are:

Products	Output in units	Labor hour per unit	Machine hour per unit	No. of setup	Material cost per unit (Rs.)	Material per unit (Rs.)	Production run
M	2,000	3	3	3	200	2	3
N	4,000	2	5	6	150	2	4
O	2,000	2	3	3	150	2	3

Further information: Direct labor cost per hour Rs.4

Required: Statement of total cost and cost per unit for each product by using:

(i) Conventional absorption costing on the basis of labor hour

(ii) An activity based costing using suitable cost drivers.

[6 + 9]

Ans.: (i) Rs. 430, Rs. 320 (ii) Rs. 425.75, Rs. 321.25, Rs. 321.25

9. 2065. Q. No. 16, OR

A manufacturing company produces three products namely P, Q and R using the same plant and similar production process. The detail information of the products and costs are summarized below:

Products	Output in units	DLH per unit	MH per unit	Direct material cost per unit (Rs.)	Direct labor cost per unit (Rs.)	Production run per product
P	2,500	3	1.5	15	6	15
Q	3,000	4	1.5	18	8	8
R	4,000	4.5	2.0	20	9	12

Other information regarding overhead costs and suitable cost drivers are given below:

Cost pool	Overheads (Rs.)	Cost Drivers
Scheduling cost	35,000	Production run
Set-up cost	37,500	Production run
Indirect labor cost	75,000	Direct labor hours
Repairs and maintenance cost	40,000	Machine hours

- Required:** (a) Cost per unit under traditional costing system using direct labor hours.  
 (b) Cost per unit under activity based costing using suitable cost drivers.  
 (c) Comparative statement of unit cost under two methods. [4+3 +6 +2]
- Ans.: (a) Rs.36;46; 51.50(b) Rs.43.121; 43.22; 49.14

**10. 2064. Q. No. 8**

A company manufactures two products A and B. The following information for the period is provided:

	Product A	Product B
Output in units	1,000	1,000
Machine hour per unit	1.5	1
Direct labor hour per unit	2	3
Production run for the period	3	2

The overhead cost are absorbed by product units using rate per direct labor hour and rate of overhead is Rs.16. The apportionment of total overheads and their cost drivers are as under:

Cost items	Cost Drivers	% of Apportionment
Indirect labors	Direct labor hours	62.5%
Scheduling costs	Production runs	25%
Machine related costs	Machine hours	12.5%

- Required:** (i) Total overhead costs for the period and amount of overhead for each item  
 (ii) Total overhead rate for each product by using cost driver rate. [8]
- Ans.: (i) Total Rs.80,000 (ii) Rs.38 and Rs.42

**11. 2063. Q. No. 8**

The following data pertain to a company which manufactures two products X & Y.

	Product X	Product Y
Output in units	500	1,000
Machine hour per unit	4	2
Direct labour hour per unit	2	2
Production run for the period	5	8

The overhead for the period and cost drivers are:

Cost items	Amount (Rs.)	Cost Drivers
Short-term variable costs	16,000	Machine hours
Scheduling costs	10,400	Production runs
Set up costs	5,200	Production runs
Indirect labour	9,000	Direct labour hours

- Required:** (a) Cost Driver Rate for each item of overhead (b) Total overhead costs and overhead per unit for each product by using Activity Based Costing System. [3 + 3 + 2]
- Ans.: (a) Rs. 4, Rs. 800, R. 400, Rs. 3 (b) X: 17,000, Rs. 34 per unit;  
 Y = Rs. 23,600, Rs. 23.6 per unit

12. 2062. Q. No. 7, OR

The summarized production and cost figures of a workshop are provided below:

Products	Output in pieces	Materials cost per piece	Labor hour per piece	Production scheduling per 50 Pieces
Jar	400	Rs.25	5	3
Plate	600	Rs.30	2.5	3
Bowl	500	Rs.20	3	4

Wage rate per hour is Rs.4. All products require five inspections in a lot of 25 pieces of each. One sales order execution contains 100 pieces of each.

The overhead for the period are outlined below:

Production scheduling	Rs.20,000
Order execution expenses	Rs.15,000
Inspection work expenses	Rs.18,000

Required: Total cost and cost per piece based on Traditional Costing and Activity Based Costing. [3 + 5]

Ans.: (a) Rs.98; Rs.66.50; Rs.63.80 (b) Rs.79; Rs.74; Rs.70

13. 2061. Q. No. 7, OR

A company has a single production process and it manufactures three products A, B and C. The overhead costs and related cost driver for a period are:

Overhead costs	Cost drivers	Rs.
Short-term variable costs	Machine hours	16,000
Welfare expenses	Direct labor hours	36,000
Set-up costs	Production runs	8,000
Material handling	Quantity of materials	24,000

Data for the period are:

Products	A	B	C
Output in units	2,000	2,000	1,000
Materials per unit	3	2	2
Labor hour per unit	2	3	2
Machine hour per unit	2	1.5	2
Production run for the period	4	2	2

Required: (i) Overhead rate by using machine hour rate

(ii) Overhead rate by using Activity Based Costing. [3 + 5]

Ans.: (i) Rs.18.67; 14; 18.67; (ii) Rs.17.56; 16.67; 15.56

14. 2061. Q. No. 7, 2nd

The following are the particulars of an industry that manufactures two products.

	Products	
	X	Y
Output in units	4,000	6,000
Labor hour per unit	$\frac{3}{4}$	$\frac{1}{2}$
Number of production run	20	30
Number of supervision per production run	4	5
Machine hour per unit	1.5	1

The expenses incurred for the realization of the above output are as follows:

Production setting	Rs.25,000
Supervision	Rs.23,000
Machine operation	Rs.24,000

Required: Overhead per unit under Traditional Costing and Activity Based Costing. [3 + 5]

Ans.: (a) x = Rs.9, y = Rs.6 (b) x = Rs.7.5 y = Rs.7

**15. 2060. Q. No. 16, 1st**

Three products X, Y and Z are produced by manufacturing concern. The details of particulars are noted in the table:

Products	Output in units	Direct labor hour per unit	Machine hour per unit	Raw materials cost per kg	Kg of raw materials consumed for one units
A	5,000	1	4/5	2	1.5
B	7,000	2	1.5	3	2
C	8,000	2.5	2	5	2.5

Other details are:

- Direct labor cost per hour is Rs.6.
- 1,000 units batch of production run is effective in each product.
- Raw materials purchased consists of 500 kg in each purchase.
- Actual overhead incurred are:

Production Scheduling cost	30,000
Maintenance expenses	15,250
Indirect labor	62,400
Set up costs	28,430
Order execution cost	19,920
<b>Total</b>	<b>156,000</b>

Required: (a) Traditional cost statement by using DLH for overhead to determine unit cost.

(b) Activity Based Cost statement showing cost per unit for each product, allocating cost by using the following cost drivers:

Production scheduling	Production Run
Indirect labor	DLH
Set up cost	Production run
Order execution cost	Order executed

[5 + 10]

Ans.: (a) Rs.13; 26; 37.5 (b) Rs.14.64; 25.83; 36.62

**16. 2060. Q. No. 8, 2nd**

A company manufactures three products P<sub>1</sub>, P<sub>2</sub> and P<sub>3</sub> using the same equipment and process. The following information relates to a production period:

Products	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>
Units produced	3,000	2,000	1,000
Labor hour per unit	2	2	2
Machine hour per units	4	2	2
Set-ups cost in numbers	8	5	2
Order handled in period	6	4	3
Direct labor rate per hour	Rs.4	Rs.3	Rs.2
Direct material per unit	Rs.16	Rs.18	Rs.24

The overheads for the period are:

Production set-up cost	Rs.60,000
Material handling and dispatch	Rs.26,000
Repair and maintenance	Rs.9,000

Required: (a) Cost driver rate for each overhead (b) Statement of total cost showing cost per unit for each product by using Activity-based costing.

[3 + 5]

Ans.: (a) Rs.4,000; 2,000; 0.5 (b) Rs.40.67; 39; 43

17. 2059. Q. No. 10

Company produces two types of products. The president of the company recently decided to change from a volume-based costing system to an activity-based cost system. To assess the effect of the change, the following data have been gathered:

Products	Units	Machine hour	Production runs	Prime cost Rs.	Material Component
A	3,000	9,000	10	10,000	6,000
B	2,000	4,000	5	8,000	8,000
		13,000	15	18,000	14,000

The overhead cost and cost drivers are as follows:

Cost	Cost drivers	Amount (Rs.)
Machine related activities	Machine hour	39,000
Set up costs	Production runs	30,000
Material handling costs	Number of material components	28,000

Required: (a) Cost driver rate for each item by using activity based costing.

(b) Total cost of each product by using cost driver rate.

[3 + 5]

Ans.: Rs.3, 2,000, 2; A: Rs.69,000, B: Rs.46,000

18. 2058. Q. No. 10

A company manufactures two products namely X and Y. Data for the past period are as follows:

	Product X	Product Y
Output in units	2,000	3,000
Machine hours per unit	2 hours	1 hour
Labor hour per unit	2 hours	3 hours
Production run	7	3

Total production overhead recorded and cost driver fixed by cost accounting department is analyses as:

Cost	Cost drivers	Amount (Rs)
Set up cost	Production runs	20,000
Machine department	Machine hours	14,000
Scheduling cost	Production runs	18,000

Required: (a) Overhead rate by using labor rate.

(b) Overhead rate under activity based costing.

[2+6]

Ans.: (a) X: Rs.8, Y: Rs.12 (b) X: Rs.17.30, Y: Rs.5.80

19. 2057. Q. No. 16

A company manufactures three products namely X, Y and Z using the same plant and process. The following information related to a production period:

Product	Output in units	Material cost per unit	Direct labor cost per unit	Machine hour per unit	Production Run
X	100	Rs.100	Rs.6	2.0 hrs.	4
Y	200	Rs.50	Rs.3	1.0 hrs.	8
Z	500	Rs.40	Rs.5	1.2. hrs.	20

The production overhead and cost drivers are:

Overhead	Cost drivers	Amount (Rs.)
Set up cost	No. of production runs	64,000
Stores receiving	Requisition raised	8,000
Inspection and control	No. of production runs	16,000
Material handling and dispatch	Orders executed	16,000

Additional information:

- The three products were produced in a production run of 25 units each
- The requisition raised for the period in the stores for product X, Y and Z were 10, 10 and 20 respectively.
- The number of order being in a batch of 20 units for each product and number of total order executed was 40.

Required: Statement of total cost and cost per unit for each product by using:

- Conventional absorption costing on the basis of machine hours.
- An activity based costing using suitable cost drivers.

[6 + 9]

Ans.: (a) Rs.314; 157; 169.8 (b) Rs.246; 183; 173

**20. 2056. Q. No.10**

A company has a single production process. Three products P, Q and R are produced by workers. The wage rate per hour is Rs.4. The budget information have been obtained for the year are as follows:

Product	Production Units	Material Per unit	Total material Cost per unit	Labor hour per unit	Machine hour per unit	Batches
P	2,000	2 Units	Rs.3	0.50 hr	1.00 hr	6
Q	1,000	3 units	Rs.5	0.25 hr	0.25 hr	5
R	500	4 units	Rs.2	1.00 hr	1.5 hrs	4

Total overhead cost and related cost drivers are:

Overhead	Cost drivers	Amount (Rs)
Material receipt and inspections	Number of batches	Rs.30,000
Material handling	Quantity of materials	Rs.18,000
Short term variable cost	Number of machine hours	Rs.6,000

Required: Using activity base costing, find out:

- Cost driver rate; (b) Total cost for each product; (c) Cost per unit. [2+4+2]

Ans.: (a) Rs.2,000, Rs.2, Rs.2 (b) P: Rs.40,000, Q: Rs.32,500 R: Rs.19,500

(c) P: Rs.20, Q: Rs.32.50, R: Rs.39

**21. 2055. Q. No.11**

A company manufactures two products using similar equipment and method. Details of two products and relevant information are given below:

Particulars	Product P <sub>1</sub>	Product P <sub>2</sub>
i) Actual output in units	3,000	5,000
Machine hour per units	3	2
Labor hour per unit.	1	2
ii) Overhead for the period:		
Machine related activity	Rs.38,000	
Production set up activity	Rs.14,000	

- The numbers of set-ups in the period for P<sub>1</sub> and P<sub>2</sub> were 8 and 6 respectively.

Required: Total cost for each product if overhead rate per unit is absorbed in:

- Labor hour absorption rate.
- Activity based costing using suitable cost drivers.

[3+5]

Ans.: Rs.12,000, Rs.40,000: Rs.26,000, Rs.26,000

**22. 2054. Q. No.16**

A manufacturing company manufactures three products A, B and C. The details regarding product and cost are summarizes in the following table.

Product	Output units	Direct labor hour per unit	Machine hour per unit	Materials cost per unit	Production run per product
A	2,000	2.5	2	Rs.10	10
B	5,000	4.0	2	Rs.12	15
C	10,000	5.0	2	Rs.15	20

Further information:

- (i) Direct labor cost per hour is Rs.4  
 (ii) Overhead cost:

Repairs and maintenance	Rs.1,02,000
Set up cost	Rs.90,000
Scheduling cost	Rs.45,000
Indirect labor	Rs.1,38,000
<b>Total</b>	<b>Rs.3,75,000</b>

Required: (a) Cost per unit under traditional costing system by using direct labor hour for overhead.

(b) Cost absorption statement under ABC system using the following cost driver:

Indirect labor	DLH	
Scheduling cost	Production run	
Set up	Production run	
Maintenance	Machine hour	[6+9]

Ans.: (a) Rs.32.5; 48; 60; (b) Rs.45.6; 50.36; 56.2

**23. 2054. Q. No. 7, Cancelled**

A company applying activity based costing system provides you the following details about the cost and cost drivers:

Items	Cost in Rs.	Cost drivers
Procurement cost	20,000	No. of order
Repairs	60,000	Machine hours
Set up cost	18,000	No of production run

Output and related activities are as follows:

Product	Output unit	No. of order	Machine hours used	No. of set ups
A	10,000	40	15,000	3
B	20,000	60	15,000	6

Required: Overhead rate per unit.

[2 + 2]

Ans.: A: Rs.4.4, B: Rs.2.7

**Unit 7: Service Costing**

**1. 2072 Q. No.14a**

A Transport Company provides you the following information for the month of January:

Cost of car .....	Rs.2,000,000
Kilometer runs in January .....	12,000 kms
Salary and wages .....	Rs.40,000
Diesel and lubricants .....	Rs.5 per km
Repairs .....	Rs.7,000
Garage rent .....	Rs.10,000
Insurance and road tax .....	Rs.96,000 per annum
Depreciation @ 15% per year under SLM	

- Required: (i) Total cost showing standing and running charges  
 (ii) Profit if the company charges 20% profit on cost

[4+1=5]

Ans.: (3) 150,000 (2) Rs.30,000

**2. 2072 Q.No.7 (Old)**

Sajha Yatayat runs 20 buses from Gongabu covering a distance of 20 km apart. Each bus has a capacity of 60 passengers and makes 10 round trips per day with 75% seating capacity for 25 days a month. Details of cost per bus are as follows:

- Cost of Bus Rs.3,600,000 with estimated scrap value of Rs.600,000 and expected life of 10 years.
- Annual registration and renewal charge Rs.24,000
- Annual insurance charge: 1% of cost price
- Repairs cost Rs.5,000 per month
- Salary of driver Rs.20,000 per month
- Salary of 2 conductors Rs.15,000 per month per person
- Other overhead cost Rs.10,000 per month
- Cost of Diesel, Mobil etc. Rs.25 per km

Required: Operating cost statement showing standing charge and running charge (2) Cost per passenger km. [5+2]

Ans: (1) Total cost Rs.378,000 (2) Re.0.84

**3. 2071 Q. No 7**

A transport company supplies you the following information for a certain month:

Cost of truck	Rs.2,400,000
Salary and wages	Rs.18,000
Diesel	Rs.10/km
Garage rent per month	Rs.2,000
Kilometer runs in a month	10,000 kms
Repair and maintenance per month	Rs.6,000
Insurance per year	Rs.48,000
Depreciation@ 10 percent per annum	

Required: (1) Statement of total cost showing standing charges and running charges (2) Cost per kilometer run [5+2=7]

Ans: (1) TC Rs.150,000 (2) Rs.15

**4. 2070 Q. No 7**

The annual expenses of a public health centre are as under:

	Rs.
Dispensary expenses	250,000
Expenses for food provisions and others	900,000
Medical supplied	300,000
Repair and maintenance	50,000
General administration charges	240,000
Cost of oxygen	80,000
Expenses of x-rays and others	70,000
Rent and rates	390,000

Salaries to Staff – paid on the basis of number of patient attended and time spent by them:

- 2 Doctors @ Rs.20,000 per month
- 4 Nurses @ Rs.4,000 per month
- 3 Helpers @ Rs.2,000 per month

The expenses margin is fixed at 20% on bill amount. The health centre has 50 beds and bed occupancy positions is as follows:

- 30 beds for 300 days
- 20 beds for 250 days



Required: (1) Operating cost statement by showing cost per bed per day (2) The rate to be charged per bed per day.

Ans: (1) TSC = Rs.1,424,000; TVC = Rs.1,600,000; Total Bill amount = Rs.3,780,000;  
Cost per bed per day = Rs.216 (2) Rate to be charged per bed per day = Rs.270

5. 2069 Q. No 7

A taxi car owner supplies the following particulars in respect of a taxi car:

Cost of taxi car	Rs. 800,000
Drivers salary per month	5,000
Rent of Garage per month	2,000
Insurance premium per year	12,000
Road tax and repair per year	33,600

The life of a tax is 200,000 km. and at the end of which it is estimated to be sold a Rs. 200,000. The taxi runs on an average of 6,000 km per month of which 25% runs in empty. Petrol consumption is 15 km. per litre. The cost of the petrol is Rs. 100 per litre. Mobil and other sundry expenses amount to Rs. 20 per 100 km.

Required: (1) Operating cost statement by showing standard and running charges (2) Effective cost of running taxi per km.

Ans: (1) TFC = 10,800 and TVC = 59,200 (c) Rs. 16.5556

6. 2068 Q. No 7

A local - transport company operates 8 mini-buses between Ratna Park to Swoyambhu via Kalimati - which covered approximately 15 kmg. The seating capacity of each mini-bus is 30 passengers. The following information was obtained from the company's books for a month just ended.

Cost of each mini-bus	Rs. 2,000,000
Estimated life	8 years
Scrap value per mini-bus	Rs. 80,000
Diesel, oil, grease	Rs. 125 per trip each way

Each mini-bus is operated by 3 crew member from 6 a.m. to 8 p.m. each day for average 30 days a month.

Wages & salaries of operating crew per mini-bus per month Rs. 12,000

Repairs & maintenance Rs. 2,000 per month per bus.

Insurance per bus per month Rs. 1,200

Depreciation per month per bus Rs. 20,000

Interest and official charges per bus per month Rs. 17,000.

The passengers' occupancy was 100% in each trip.

All the buses were run all the days in the month making 6 round trips per day.

Required: Cost statement showing cost per passenger/km.

Ans: Rs. 0.60/passanger

7. 2067. Q. No. 7

Mr. Shrestha has provided the following particulars of his tourist car.

- Cost of car Rs.5,50,000 (life 10 years and scrap value Rs.50,000)

- Distance of the route 40 kms one way.

- Insurance and taxes Rs.10,500 p.a.

- Garage rent Rs. 2,000 p.m.

- Repairs and maintenance Rs.12,000 p.a.

- Driver's salary Rs.6,000 p.m.

- Other overhead charges Rs.500 p.m.

- Petrol cost Rs.100 per 10 km.

- Car will make 4 round trip each day.

- Car will operate 25 days in a month.

- Profits is to be charged @ 15% on freight.

**Required:** Operating cost sheet showing proper division of costs [5+2]  
 Ans.: TFC = Rs.14,542; TVC = Rs.80,000; Total freight = Rs.111,226

**8. 2066. Q. No. 7**

A Nursing Home has 125 bed capacities. The average occupancy of bed is 80 percent a year. The estimated annual expenses are as follows:

	Amount
Medicine	8,76,000
Food provisions to patients	7,30,000
X-ray, oxygen and surgical expenses	1,46,000
Repair and maintenance	87,600
Laundry service expenses	1,53,300
Overall administrative expenses	2,19,000

The estimated salaries for medical team member are as follows:

Twelve staff nurses at a monthly salary of Rs.6,000 per nurse.

Six doctors at a monthly salary of Rs.15,000 per doctor.

**Required:** Operating cost statement showing total fixed cost and variable cost and cost per patient/day (round off to rupee). [5+2]

Ans.: Total cost 41,55,900; Cost per patient day Rs.113.8603

**9. 2065. Q. No. 7**

A transport company supplies the following information relating to a microbus with the capacity of carrying 20 passengers. It makes five round trip daily covering distances of 5 km. It carries the passenger with 80% capacity for 25 days in a month. Other relevant information are:

Cost of microbus	Rs.15,00,000
Estimated life	10 years
Residual value at the end of life	Rs.5,00,000
Repair and maintenance cost	Rs.5,000 per month
Salary and wages of helper	Rs.15,000 per month
Taxes and renewal charge	Rs.12,000 per year
Insurance charge	Rs.18,000 per year
General expenses	Rs.20,000 per year
Fuel each way	Rs.100

**Required:** (a) Operating cost statement showing standing and running charge

(b) Cost per passenger km.

[5+2]

Ans.: (a) TSC = Rs.27,500; TRC = Rs.30,000 (b) Rs.2.875

**10. 2064. Q. No. 7**

A lodging home is being run in a small hill station with 60 single rooms. 90% of rooms are generally occupied in summer and 50% in winter. The period of summer and winter may be considered to be 30 weeks and 22 weeks respectively. The profit margin is targeted at 20% of the room rent.

The cost estimation and other details for the year ending are:

Staff salaries	Rs.8,00,000	Repair and maintenance	Rs.70,000
Lighting and heating	Rs.2,00,000	Insurance	Rs.30,000
Interior decoration and others	Rs.80,000	Other expenses	Rs.71,800

The fixed assets of lodging home are as under:

Building	Rs.2,00,000	Furniture	Rs.1,00,000	Equipments	Rs.50,000
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Annual depreciation:

Building	5%;	Furniture and equipment	10%
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**Required:** (i) Operating cost statement showing total cost

(ii) Room charge per day per guest.

[5+2]

Ans.: (i) Total Cost Rs.159,600; (ii) Rs.100

11. 2063. Q. No. 7

A Transport Company, which owned 10 vans, supplied the following details:

Cost of each van	Rs.24,00,000
Life of vans	5 years
Value of each van after 5 years	Rs.6,00,000
Seating capacity of each van	25 persons
Normal passengers traveled 80% of seating capacity	
Distance covered by each bus per day	100 km
Total running days per month	26 days

Operating costs for running 10 vans:

Salaries of office and supervision staffs per month	Rs.65,000
Oils for one month	Rs.1,60,000
Repairs and maintenance per month	Rs.11,000
Taxation and insurances for one year	Rs.1,20,000
Annual interest and other charges	Rs.60,000
Rent of garage per month	Rs.15,000
Wages of drivers, conductors and cleaners per month (Allocated on the basis of mileage run)	Rs.1,20,000
Profit expected by the company- 25% on cost	

Required: (i) Operating cost statement showing monthly running charge and standing charge (ii) Monthly profit (iii) Fare to be charged per passenger per kilometer. [7]

Ans.: (i) Rs.3,95,000; Rs.2,91,000; (ii) Rs.1,71,500; (iii) Rs.1.649

12. 2062. Q. No. 8

The monthly expenses estimated for 6 beds operated for 30 days under intensive care unit by community are as follows:

Dispensary (medicine)	Rs.36,000
Foods charges	Rs.45,000
Laundry and patient services	Rs.27,000
Doctor's salary	Rs.54,000
Rent, lighting and others	Rs.41,400
Salary to nurse and other manpower	Rs.20,700

Required: Cost per patient per day with suitable division of costs by incorporation 10% profit on bill amount assuming 100% occupancy. [5]

Ans.: Profit Rs.24,900 & Cost per patient day Rs.1,383.33

13. 2061. Q. No.12

A Hillside Hotel has 15 bedrooms with a maximum sleeper nights of 164 per week. Being a well-viewed Hotel, on average 75% occupancy remain throughout the year. The average food cost per person per day comes to as follows:

Breakfast	Rs.18.20;	Lunch	Rs.33.00;	Dinner	Rs.40.80
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Weekly food cost to staff and wages for following services comes to as under:

Restaurant service	Rs.1420
House keeping services	Rs.950
General Service	Rs.730

Annual direct expenses for:

House keeping	Rs.18,200
Restaurant	Rs.10,920

Indirect expenses of Rs.26,000 to be apportioned to Restaurant, Housekeeping and General Services in the ratio of 3:4:3. General Service cost is to be apportioned to Restaurant and Housekeeping in the ratio of 5:3.

Required: Total cost per day per person.

[5]

Ans.: Cost per person per day Rs.125.82

**14. 2061. Q. No. 8, 2nd time**

A microbus operates 8 rounds trips each day for 30 days a month between 20 km a part newly urbanized two cities.

The bus has 15 passengers sitting capacity.

The average seat occupancy is 80%.

The monthly operating expenses are given below:

Driver's salary	Rs.19,200
Repairs and maintenance expenses	Rs.11,520
Route license and garage rent	Rs.9,600
Cost of the micro bus expecting to run for 10 years	Rs.20,73,600

Required: Bus fare per passenger per km expecting 10% profit on cost by reporting standing charges and running expenses. [2 + 2 + 1]

Ans.: Fare per passenger- Km. Rs.0.55

**15. 2060. Q.No.9, 1st**

The details of the projected incomes and expenses of a newly established Public Health Centre are mentioned below:

The fee of two visiting doctors paid on the basis of patent visit	Rs.3,52,000
Food supplied to patient	Rs.5,28,000
Laundry charges	Rs.88,000
Medicine expenses	Rs.1,76,000
Repair and maintenance	Rs.74,000
Cost of oxygen, x-ray (average)	Rs.44,000
General administration charges	Rs.1,50,000

The centre has a provision of 50 beds. It has a provision of additional 10 beds to meet emergency need. On scrutiny of patient records the bed occupancy position is 100% for 150 days with additional of 10 emergency beds & only 80% for 215 days.

The permanent staffs attached to the centre are:

- \* 2 supervisory staff at a salary of Rs.2,000 per month each
- \* 8 Nurses at a salary of Rs.1,500 per month each
- \* 4 Attending boys at a salary of Rs.1,000 per month each.

Required: Cost per patient day by classifying expenses into fixed and variable components and profit and loss per patient day if per patient day average charge is Rs.100. [7]

Ans.: TFC: Rs.464,000; TVC = 1,188,000 Cost/patient day Rs.93.86 Profit/ patient day Rs.6.14

**16. 2060. Q. No.12, 2nd**

A Highway carries supplies the following information relating to a truck of 6 tone capacity that makes one trip daily covering distance of 30 kms each way and carrying goods in full capacity on outward trip & on return only 20% of the capacity:

Capital cost of truck	Rs.12,00,000
Estimated life	20 years
Residual value at the end of life	Rs.2,00,000
Monthly Repairs and maintenance	Rs.4,000
Monthly wages of the helper	Rs.2,500
Yearly taxes and renewals	Rs.5,400
Monthly wages of the driver	Rs.6,000
Yearly insurance charges	Rs.9,600
Yearly general expenses	Rs.18,000
Fuel each way per trip	Rs.220

In an average, the truck run 26 days in a month.

Required: Operating cost for truck per month and per tone kilometer. [5]

Ans.: TC: Rs.30,857; Total cost per tone km: Rs.5.4945

**17. 2059. Q. No.14**

Dr. Rimal hired building to run a nursing home. The rent of the building is Rs.30,000 per month. The building has 20 rooms and rests are general area. The lighting and heating expenses are Rs.6,000 per month. The staff will consist of the following:

- 2 Doctors @ Rs.15,000 per month each
- 6 Nurses @ Rs.3,000 per month each
- 4 General helpers @ Rs.1,500 per month each

The monthly variable expenses for medicine food charge, laundry charge, etc. come to Rs.84,000. It is expected that the whole rooms will be occupied. The desire margin is fixed at 25% on bill amounts. 30 days in a month has been assumed.

Required: The room rate to be charged per day.

[5]

Ans.: Rs.386.67

**18. 2058. Q. No.15**

Scrutiny of the daily log book rendered by a transport company that owned 40 seaters fleet of 5 buses provided the following particulars:

- (a) Normal passengers traveled 90%
- (b) Annual depreciation registration insurance, taxes etc. per fleet (in Rs.) 54,000
- (c) Fuel, lubricating oil, repair and maintenance etc. per 25kms (in Rs.) 450
- (d) Driver's salary for 5 fleet per month (in Rs.) 37,500
- (e) Profit expected by the company is 20% on freight.
- (f) Each fleet operated 4 round trips daily of 10 kms distance each way for 25 days in a month.

Required: (a) Monthly standing charges (b) Monthly operating charges.

(c) Freight to be charged per passenger km. (d) Monthly profit

[5]

Ans.: (a) Rs.60,000; (b) Rs.1,80,000; (c) Rs.0.8333; (d) Rs.60,000

**19. 2057. Q. No.15**

(i) The annual expenditures of a nursing home is given below:

* Dispensary expenses for the year	Rs.1,19,000
* Expenses for food provisions	Rs.1,70,000
* Cost of oxygen, pathology, x-ray etc.	Rs.1,36,000
* General administration expenses	Rs.2,12,500
* Doctor's salary and other services of patients	Rs.2,78,800

(ii) Occupancy position 40 beds for 200 days.

(iii) Five staff nurses were engaged at a salary of Rs.3,145 each per month.

(iv) The nursing home recovered Rs.150 per day form each patient.

Required: (a) Cost per patient day. (b) Annual profits earned.

[4 + 1]

Ans.: (a) Rs.138.13 (b) Rs.95,000

**20. 2056. Q. No.15**

Ten tone load bearing capacity truck reported the following details:

Cost of truck (purchased 5 years ago)	Rs.54,00,000
Driver's wage per month	Rs.7,800
Miscellaneous expenses annual	Rs.72,000
Diesel cost Rs.182 per trip each way.	

The truck carried goods each day to and from the city having the distance of 40 km each day. Full freight is obtained on outward trip and 40% of the capacity on return trip. The truck operated 25 days in month. The remaining life of truck expected is 5 years.

Required: Reporting standing charged and running charges compute cost per tone km.

[2+2+1]

Ans.: TSC: Rs.58,800 PM, TRC: Rs.9,100 PM; Rs.4.85 per ton

**21. 2055. Q. No.15**

Notional transport company gives you the following expenses

**Annual expenses:**

Road license	Rs.3,000
Insurance charge	Rs.2,000
Garage rent	Rs.24,000
Driver's salary	Rs.13,000
Other expenses	Rs.23,000

**Additional information:**

Cost of vehicle	Rs.9,00,000
Estimated life	3,00,000 km
Estimated annual km	20,000 km
Cost of petrol per liter.	Rs.28
Kilometre per liter	10

Required: Operating cost sheet showing annual total cost.

[5]

Ans.: Rs.1,81,000

**22. 2054. Q. No. 9, Cancelled**

A campus runs a canteen for the benefit of students at subsidy of 25% on cost. Prepare canteen cost sheet showing necessary details including total cost, subsidy amount net cost and profit or loss for the given two months:

[2 + 2 + 1 + 1]

Total cost	Current month Rs.	Previous month Rs.
<b>Provision:</b>		
Vegetables	25,000	20,000
Milk	15,000	12,000
Others	10,000	10,000
<b>Manpower:</b>		
Cooke	3,000	3,000
Helpers	2,000	2,000
Other	2,000	2,000
<b>Maintenance:</b>		
Gas	6,000	4,000
Rent	1,000	1,000
Consumable stores	1,200	1,000
<b>Sales through coupons</b>	<b>68,000</b>	<b>60,000</b>

Ans.: Profit for current month: Rs.19,100; Profit for previous month: Rs.18,750

**23. 2054. Q. No. 9 2nd time**

Nepal Yatayat Co. gives you the following information:

- (i) Cost of bus Rs.600,000 with expected 100,000 kms run
- (ii) Annual registration renewal charged Rs.12,000
- (iii) Garage charges per month Rs.5,000
- (iv) Annual repair Rs.24,000
- (v) Driver's salary Rs.14,000 per month
- (vi) Conductor's salary Rs.8,000 per month
- (vii) Diesel and oil Rs.14 per kilometre

The bus will run 25 days in a month with 40 passengers in 10 round trips of 20 kms long route.

Required: (a) Operating cost statement showing standing charges & running charges separately. (b) Cost per passenger kilometre.

[7]

Ans.: (a) TSC: Rs.30,000; TRC: Rs.1,00,000; (b) Rs.0.65

## Unit 8: Job Order Costing

**Theoretical Questions****1. 2054. Q. No. 9 2nd time**

Write down the meaning of Job Order Costing. What are the features, objectives and advantages of job order costing? Discuss.

[15]

**Theoretical Questions (Additional)**

- Define job order costing.
- Write down the features of job order costing.
- Mention the advantages and disadvantages of job order costing.
- List out the objectives of job order costing.
- Write short notes on:
  - Job order sheet
  - Use of job order in service companies

**Numerical Problems (Additional)**

6. From the following particulars, prepare the Cost Sheet for Job No.75 and find out the value of the job:
- Materials issued for the job = Rs.6,000  
 Productive wages = Rs.4,600  
 Direct expenses = Rs.500

Provide 60% on productive wages for works on cost and 12.5% on works cost for office on cost. Profit to be realized on the selling price 15%.

[Ans: Selling price Rs.18,344.12]

7. From the records of a manufacturing company, the following budgeted details are available:

	Rs.	Rs.
Direct materials .....		199,000
Direct wages:		
Machine shop (12,000 hours) .....	63,000	
Assembly Shop (10,000 hours) .....	48,000	111,000
Work overhead:		
Machine Shop .....	88,200	
Assembly Shop .....	51,800	140,000
Administrative overhead .....		90,000
Selling overhead .....		81,000
Distribution overhead .....		62,100

Assuming that the company follows absorption method of costing, you are required to prepare a schedule of overhead rates from the figures available stating the basis of overhead recovery rates used under the given circumstances.

[Ans: Rs.683,100]

## Unit 9: Process Costing

**Theoretical Questions****1. 2060, Q. No. 5**

Write about the different type of process losses and explain their accounting treatments. [2.5+2.5]

**Numerical Problems****1. 2072 Q. No. 17**

The following details are taken from a factory:

	Process A (Rs.)	Process B (Rs.)	Process C (Rs.)
Opening stock	20,000	30,000	12,500
Raw materials	100,000	130,000	—
Productive wages	80,000	90,000	—
Factory overhead	40,000	60,000	—
Closing stock on prime cost	40,000	30,000	—
Inter-process profit associated with opening stock	—	10,000	2,500

The output of process A is transferred to process B at a profit of 25% on cost price and that of process B to finished stock at a profit of 20% on transfer price. The factory sold 80% of the finished goods for Rs.700,000.

**Required:** (a) Process A a/c (b) Process B a/c (c) Finished stock a/c (d) Statement of actual profit realized

[4+5+4+2=15]

Ans: (1) Rs.50,000 (b) Rs.132,500 (c) Rs.160,000 (d) Rs.313,120

**2. 2072 Q.No.8 OR (Old)**

The particulars for the last process are as follows:

	Units	Rs.
Direct materials		6,000
Direct wages		4,000
Factory overhead (400% of material cost)		
Transfer from 1 <sup>st</sup> process to last process	4,000	12,400
Transfer from last process to finished stock	3,240	?
Normal loss 20%		
Scrap value of normal loss per unit		Rs.10

**Required:**

(1) Last process account (2) Normal loss account (3) Abnormal gain account [4+2+2]

Ans: (1) Finished stock 3,240 units; Rs.38,440 (2) Bank a/c Rs.7,600 (3) Costing P/L a/c Rs.80

**3. 2071 Q. No 16 OR**

A product passes through two processes X and Y before completion. The outputs of each process are transferred to the next process are the finished stock @ 20% profit of transfer price. The closing stock of X and Y will be valued at prime cost and finished stock will be valued at the same price at which it is received from process Y. The details of the period are:

	Process X	Process Y	Finished Stock
Opening stock	Rs.12,000	Rs.72,000	Rs.140,000
Direct materials	80,000	120,000	—
Direct labour	60,000	68,000	—
Production overhead	70,000	60,000	—
Closing stock	22,000	11,000	100,000
Inter process profit on opening stock	—	6,000	35,000

Sales during the period: Rs.900,000

**Required:** (1) Process A a/c (2) Process Y a/c (3) Finished stock a/c [5+6+4=15]

Ans: Profit (1) Rs.50,000 (2) Rs.139,750 (3) Rs.161,250



4. 2070 Q. No 1

Following are the particulars relating to process second for the month of Ashad

	Unit	Value
Transfer from process First a/c	9,000	Rs.67,500
Transfer to Finish stock a/c	8,100	
Consumer materials		9,000
Labour cost		32,500
Production overhead		17,090
Normal loss: 10% of inputs		
Opening work-in-progress	1,200	
Closing work-in-progress	900	
Sales of scrap @ Rs.12 per unit		

Opening WIP and closing WIP were to be valued at cost transferred from previous process.

Required: (1) Process second a/c (2) Abnormal loss a/c

[5+2=7]

Ans: (1) Transferred to finished stock = 8,100 units of Rs.113,400 (2) Costing P/L a/c = Rs.540

5. 2069 Q. No 16

New Food Factory produces soft cheese ball by the first process and hard cheese ball by the second process. The second process gets input from the first process. The second process gets input from the first process. The factory introduced 10,000 kg of input material in the first process @ Rs. 6 per kg.

	First Process	Second Process
Ingredient material	Rs. 20,000	Rs. 40,000
Wages	Rs. 4 per kg	Rs. 6 per kg
Factory overheads as a percentage of material (input) and wages consumed	60%	40%
Normal wastage	20%	4%
Scrap value of normal wastage	Rs. 10 per kg	Rs. 30 per kg
Actual output	7,500 kg	4,850 kg
Sales	2,500 kg @ cost plus 20% profit	2,000 kg @ cost plus 20% profit

Required: (1) First Process Account (2) Second Process Account (3) Normal Loss Account (4) Abnormal Loss Account.

[5+5+3+2]

Ans: (1) 5,000 units, Rs. 100,000 (2) 2,850 units; Rs. 114,000 (3) 2,150 units, Rs. 24,500 (d) Rs. 5,000

6. 2068 Q. No 15

A product of a manufacturing company passes through two processes via, Process A and Process B and then to finished stock. The normal wastage of each process is as given below:

Process A: 3% of inputs

Process B: 5% of inputs

Wastage has value and realized Rs. 2.5 per unit of wastage from process A and that of process B Rs. 5.5 per unit.

The process information is given below:

	Process A (Rs.)	Process B (Rs.)
Main materials 10,000 units @ Rs. 1 per unit	10,000	
Sundry materials	10,000	15,000
Direct Labour	60,000	70,000
Variable expenses	15,450	15,895
Output units	9500 units	9,100 units

Required: Process A and B Accounts.

[4+3 = 7]

Ans: Process A: Abnormal loss = 200 units = Rs. 1,953; Transfer unit: 9,500 = Rs. 92,747;

Process B: Abnormal loss = Rs. 1,587; Finished unit: 5,100 = Rs. 192,616

## 7. 2067. Q. No.16, OR

A manufacturing company produces and sells its product produced by consecutive processes. The product of these processes are dealt with as under.

	Process A	Process B	Process C
Transfer to next process	60%	50%	-
Transfer to warehouse for sale	40%	50%	100%
Total	100%	100%	100%

In each process 10% of weight put is lost and these possess scrap value of Rs.3 per unit, Rs.4 per unit and Rs.5 per unit from process A, B and C respectively.

The following particulars relate to the period ending Chaitra, 2064.

Equity shares of Rs.100 each	Processes		
	A	B	C
Materials introduced (units)	1,000	-	-
Rate per unit	Rs.20	-	-
Wages	Rs.4,000	Rs.2,000	Rs.3,500
Other expenses	Rs.3,300	Rs.820	Rs.1,300

The product of each processes transferred to warehouse were sold at cost plus 25% in each process. The administrative and selling expenses incurred Rs.8,000.

Required: (a) Process 'A' Account (b) Process 'B' Account

(c) Process 'C' Account and (d) Statement showing profit from sale [4+4+4+3]

Ans.: (a) Transferred to Process B = Rs.16,200; warehouse = Rs.10,800;

(b) Process C = Rs.9,402; Warehouse = Rs.9,402; Rs.14,082; (c) Net Profit = Rs.571

## 8. 2066. Q. No. 16, OR

A product passes through process for completion before it is transferred to finished stock. The following information is obtained for a period.

Items	Process-A (Rs.)	Process-B (Rs.)	Finished stock (Rs.)
Opening stock	10,000	12,000	20,000
Direct materials	15,000	18,000	-
Direct labor	12,000	14,000	-
Production overhead	8,000	6,000	-
Closing stock	4,000	4,000	6,000
Profit % on transferring price to the next process	20%	25%	-
Inter process profit included in opening stock	-	2,000	3,500

Stock in processes are valued at prime cost and finished stock has been valued at the price at which it was received from process II. Sales during the period were Rs.2,00,000.

Required: (i) Process-I Account (ii) Process-II Account (iii) Finished stock Account

(iv) Stock valuation for Balance sheet purpose. [4+5+4+2]

Ans.: Profit: (i) Rs.10,250; (ii) Rs.31,417; (iii) Rs.56,333.33; (iv) Rs.11,576

## 9. 2065. Q. No. 16

X Y Z processing company produces products through two processes and transferred to the finished stock. The other data relating to the processes and finished stock are given below:

	Process A (Rs.)	Process B (Rs.)	Finished Stock (Rs.)
Opening stock	3,000	5,000	11,000
Direct material and wages	12,000	13,000	-
Factory overheads	4,000	2,000	-
Closing stock (Valued at prime cost)	1,800	2,500	5,000
Inter-process profit included in opening stock	-	700	4,000

**Further information:**

Percentage of profit of each process was calculated on transfer price are listed below:

Process A 20%; Process B 15%

Sales during the period are Rs.65,000

**Required:** (a) Process A Account (c) Finished Stock Account

(b) Process B Account (d) Actual Realized Profit.

[5+5+3+2]

Ans.: Profit : Rs.4,300; Rs.6,882; Rs.13,118; Rs.27,316

**10. 2064. Q. No. 16, OR.**

A product passes through two processes A and B. The output of each process is charged to the next process at a price calculated to give a profit on transfer price. The percentage of profits are as under:

Process A 25%; Process B 20%

The other information for the period is as follows:

	Process A (Rs.)	Process B (Rs.)	Finished Stock (Rs.)
Opening stock	30,000	36,000	70,000
Direct materials	70,000	70,000	—
Direct wages	45,000	60,000	—
Factory overheads	40,000	29,650	—
Closing stock	20,000	9,650	50,500
Profit in opening stock	—	7,000	25,000

The stock in process is valued at prime cost. Sales during the period are Rs.6,00,000.

**Required:** (i) Process A account; (ii) Process B account; (iii) Finished stock account. [5+6+4]

Ans.: Profit = Rs.55,000; Rs.1,01,500; FS = Rs.73,000

**11. 2063. Q. No. 16**

The cost figures and other particulars of a high lighter making factory for the month of Ashadh 2062 are as follows:

	Setting Process Rs.	Fitting Progress Rs.	Finished Stock Rs.
Stock: Ashadh 1	20,000	30,000	12,500
Raw materials	120,000	150,000	—
Productive wages	80,000	90,000	—
Work overheads	40,000	60,000	—
Stock: Ashadh 31	40,000	30,000	40,000
Inter-process profit associated with opening stock	—	10,000	2,500

The output of setting process is given to fitting process at a profit of 25 percent on transfer price and that of fitting process to finished stock at a profit of 20 percent on transfer price. The factory has sold 80% of the finished goods realizing Rs.5,00,000 (*Note: 80% of the finish goods sold is ignoring.*)

**Required:** (i) Setting process account (iii) Finished stock account

(ii) Fitting process account (iv) Actual profit realization statement. [5+5+3+2]

Ans.: Profit: Rs.73,333; Rs.1,48,333; (Rs. 10,333); Rs.80,791

**12. 2062 Q. No. 16**

A product is obtained after it is processed through three distinct processes. The following information are available for the operations.

	Process I	Process II	Process III
Units of raw material introduced	10,000	—	—
Cost of raw material per unit	Rs.10	—	—
Sundry material	Rs.20,000	16,000	25,500
Direct wages	Rs.50,000	40,500	20,000
Direct expenses	Rs.10,000	17,000	20,000

Normal loss in units	1,000	900	400
Scrap value of normal loss per unit	Rs.9	10	15
Actual output in units	9,000	5,000	2,200
Sales price per unit of output	Rs.25	50	80
Output transferred to next process	2/3	1/2	-
Output sold at the end of the process	1/3	1/2	100%

Management expenses during the year amounted to Rs.27,500 and selling expenses were Rs.20,000, both these were not a charge to the processes.

**Required:** Process I, Process II and Process III account showing the profit or loss on each process and a statement of income for the period. [15]

Ans.: P-I: Profit Rs.18,000, Transfer to P-II: 6,000 units Rs.1,14,000 P-II: Profit Rs.37,500,  
Transfer to P-III: 2,500 units Rs.87,500 P-III: Profit Rs.22,000;  
Net profit before adjusting abnormal gain or loss Rs.30,000;

### 13. 2061. Q. No. 16

A product passes through two processes, A and B and then it transferred to finished stock. The output of process A is transferred to process B at 25% profit on the transfer price and output of process B is transferred to finished stock at 20% profit on the transfer price. The stocks in processes are valued at prime cost. The following are the details in respect of two processes – A and B:

	Process A (Rs.)	Process B (Rs.)
Opening stock	6,000	7,200
Inter process profit included in opening stock	-	1,200
Direct material	12,000	14,000
Direct wages	8,000	6,000
Factory overhead	7,000	12,800
Closing stock	3,000	10,000

Additional information of finished goods:

	Total (Rs.)	Cost (Rs.)	Profits (Rs.)
Beginning stock	18,000	11,440	6,560
Ending stock	25,000	?	?
Sales value	90,000	?	?

**Required:** (i) Process A Account, (ii) Process B Account (iii) Finished stock Account [6+6+3]

Ans.: Profit from: (i) P<sub>A</sub>: Rs.10,000; (ii) P<sub>B</sub>: Rs.17,500; (iii) Finished stock: Rs.9,500

### 14. 2061. Q. No. 16. OR. 2nd

A product passes through two processes P and Q before completion. The outputs of each process are transferred to the next process or to the finished stock as the case may be 20% profit on the transfer price. The closing stock in process P and Q will be valued at prime cost and finished stock will be valued at the price at which it is received from process Q.

The details obtained during the period are:

Particulars	Process P	Process Q
Opening stock	Rs.4,000	Rs.6,000
Direct material	30,000	40,000
Direct wages	26,000	24,000
Production overhead	17,000	20,000
Closing stock	5,000	10,000
Inter process profit for opening stock	-	1,200

Sales during the period were Rs.3,00,000 and the stocks were valued at Rs.20,000.

**Required:** (i) Process P Account (ii) Process Q Account

(iii) Finished Stock Account (iv) Unrealized profit and actual profit. [4+5+3+3]

Ans.: Profit from: P<sub>P</sub>: Rs.18,000; P<sub>Q</sub>: Rs.42,500; Finished stock Rs.1,07,500; Unrealized Profit on opening stock: Rs.1,200; On closing stock: (Rs.6,894); Actual profit: Rs.1,62,306

15. 2060. Q. No. 12, 1st

A finished product is produced through two processes. The expenses of each process for the last month are given as:

Particulars	Process A	Process B
Material	10,000	20,000
Wages	8,000	10,000
Stock at the end	2,000	4,000
Percentage of profit on Transferred price	20	20

Required: Process account.

[3 + 2]

Ans.: Profit: Process A: Rs.4,000, Process B: Rs.11,500

16. 2060. Q. No. 6, 2nd

The following particulars for the last process are given:

Transferred from previous process 840 units	@ Rs.20 per unit
Transferred of finished stock to warehouse	750 units
Indirect material	Rs.2,000
Direct wages	Rs.4,000
Overhead	Rs.4,080
Normal loss	10%
Scrap value of normal loss Rs.5 Per unit	

Required: (a) Last process Account (c) Abnormal loss account. (b) Normal loss account [7]

Ans.: (a) Transfer to finished stock: 750 units, Rs.26,250 (b) Net NL: Rs.420 (c) P/L (Dr): Rs.180

17. 2059. Q. No. 16

A product process through three process A, B and C. The output of process A becomes the input of process B and output of process B becomes the input of process C. The entries outputs of process C were sold directly to customers. The details of expenses incurred on the three processes during the period were as under:

Process A:

Unit introduced:

Material:

Sundry material

Labor

Direct expenses

Normal loss

Scrap value

Selling price of per unit of output

Output

X: 6,000 units @Rs.5

Y: 4,000 units @ Rs.3

Rs.15,000

1,000 hour @ Rs.30 per hour

Rs.10,000

5%

Rs.4 per unit

Rs.15

9,300 units

Process B:

Sundry material

Labor

Other expenses

Normal loss

Scrap value

Output

Selling price per

Rs.17,000

1,200 hour @ Rs.40 per hour

Rs.22,420

5%

Rs.7 per unit

5,890 units

Rs.30

Process C:

Sundry material

Labor

Direct expenses

Normal loss

Actual output

Selling price per unit of output

Rs.10,000

500 hours @ Rs.20 per hour

Rs.24,175

Nil

2,900 units

Rs.50

Two third of the output of process A and one half of the output of process B were passed into next process and the balance were sold:

Required: (a) Three Process Accounts showing profit and loss

(b) Normal loss A/c (c) Abnormal loss A/c.

[4 × 3 + 1.5 + 1.5]

Ans.: (a) Transfer to P-B : 6,200 units, Rs.62,000, Profit from P-A : Rs.15,500, Transfer to P-C : 2,945 units, Rs.73,625, Profit from P-B : Rs.14,725, Profit from P-C : Rs.29,000 (b) Net NL: Rs.4,170 (c) P/L:Rs.3,000

### 18. 2058. Q. No. 6

The working of the process II is given below:

- Unit of output realized from the preceding process – I: 10,000 (at Rs.6.50 per unit)
- Units scrapped in the process –II: 700 units
- Normal loss in the process II expected was 5% (scrap value per unit is Rs. 5)

Processing expenses during the period:

Material for 2000 units Rs.2,800

Labor cost Rs.36,000

Factory expenses recovered at Rs.3 per units consumed.

Required: Process II Account, showing cost of production per unit

[5+2]

Ans.: Cost per unit: Rs.12

### 19. 2057. Q. No. 10, OR

Forming and finishing process are the two consecutive processes required in course of manufacturing ceramic products. The data of process operations are stated below:

Particulars	Forming process (Rs.)	Finishing process (Rs.)
Material	80,000	30,000
Labor	50,000	20,000
Finished goods	10,000	10,000

There was no opening stock in any process. Output of each process passed into next process and to finished good at 20% of transferred price.

Required: Process Account.

[8]

Ans.: Profit: Forming P: Rs.30,000, Finishing P: Rs.47,500

### 20. 2056. Q. No. 16

Food production processing industry obtained the following information from the book of account.

**Input in process I:**

Material X – 6,000 kg at Rs.3 per kg; Y – 4,000 kg at Rs.1.75 per kg

Other expenses incurred are Rs.5,500.

Running hour and cost of machine are 2,400 machine hour at Rs.5 per machine hour.

Output realized is 9,300 kg

Normal loss expected is 5% with a disposed value of Rs.2 per kg.

**Input in process II:**

Material A – 5,700 kg at Rs.6 per kg; B – 5,000 kg at Rs.5.02 per kg.

Other expenses incurred Rs.12,000

Running hour and cost of machine are 1,600 hour at Rs.10 per machine hour.

Output realized 19,500 kg.

Normal loss expected is 5% with a disposal value of Rs.5.50 per kg.

Factory and other overhead expenses of Rs.10,000 are absorbed by the two processes on the basis of running machine hour. During the month 17,500 kg. of finished good are sold at a selling price of Rs.10.50 per kg. The selling and distribution expenses are Rs.1.50 per kg.

Required: (a) Process I and II Accounts (b) Normal loss, abnormal loss and abnormal gain account (c) Statement of profit and loss showing net profit before and after abnormal gain and loss.

[4+4+2+1+1+3]

Ans.: (a) Transfer to P<sub>2</sub> A/c: 9,300 units, Rs.46,500 Transfer to finished stock A/c: 19,500 units, Rs.1,35,782; (b) Net NL: Rs.3,750 P/L: Rs.600, P/L: Rs.732 (c) Rs.35,644, Rs.35,776