

M.Com. (Semester – IV) Examination, April 2017
COO4A2 : COST MANAGEMENT
 (OA – 18)

Duration : 3 Hours

Max. Marks : 60

- Instructions :** 1) This paper consists of **nine** questions carrying **equal** marks.
 2) Question No. 1 consists of **5 Compulsory** questions of **2 marks each**.
 3) Answer **any five** questions from question **2, 3, 4, 5, 6, 7, 8 and 9**.
 4) **Each** question carries **10** marks. Figures to the **right** indicate marks.

1. Answer the following questions : (5×2=10)
- What do you understand by the term 'Cost Drivers'?
 - What is a Balance Scorecard?
 - State any four benefits of Product Life Cycle Costing.
 - What is Linear Programming ?
 - What are the formal approaches to arrive at the initial feasible solution in a transportation problem ?
2. Define and explain responsibility accounting. Also explain the various types of responsibility centers in this regard. 10
3. What is meant by Performance Measurement ? Describe the techniques used for this purpose. 10
4. A) A Company has three products A, B and C in the market. Identify the phase of Life Cycle for each product. Explain the features of each stage.
- Product A : There is an intense competition. Quantity sold has been increasing at 10%, 8% and 7% in the last 3 years. Achieving targeted sales is becoming difficult.
- Product B : Until last year B had no competition. Suddenly the company finds 4 new products very similar to B in the market. However B continues to have good sales in the market.
- Product C : Huge Inventory of D is available. D is being sold in the market with many competitors with same utility and reduced prices. 6
- B) Write short notes on : 4
- Kaizen Costing
 - Value Engineering



5. A) Answer the following question : 6
- i) State the assumptions of a Linear Programming Problem.
 - ii) In an assignment problem to assign jobs to men to minimize the time taken, suppose that one man does not know how to do a particular job. How will the allocation be done ? Explain with an example.
- B) Explain the uses of Cost Management. 4
6. A) Solve the travelling salesman problem given $C_{12} = 26, C_{13} = 14, C_{14} = 22, C_{23} = 16, C_{34} = 15, C_{25} = 18, C_{35} = 16, C_{45} = 30$. $C_{ij} = C_{ji}$ and $C_{ij} = \infty$ for all values of i and j are not given in the data. 4
- B) A Large Engineering Workshop has five shops. They have been fabricating five different types of components one in each shop. Fabrication of one of these components is to be discontinued. Data on the number of Units to be manufactured and the unit costs are given below. Recommend an optimal plan as to which component should be produced in which shop. (Matrix elements are cost of fabrication in Rupees per unit) 6

		C1	C2	C3	C4
S H O P S	S1	6	7	5	8
	S2	7	6	5	9
	S3	8	7	6	9
	S4	8	9	4	8
	S5	9	8	6	7
Number of Units ('000)		8	6	4	5

7. From the data given in the table below : 10
- i) Draw the network and find the critical path.
 - ii) What are the parameters of the ending time distribution ?
 - iii) Which activity has the most precise time estimate ?
 - iv) Find the Early Start and Late Start of each activity.



v) Each project day costs Rs. 5,000. Should the firm pay Rs. 12,500 to reduce activity 3-5 to 2 days.

Preceding Event	Event	Activity Time		
		a	m	b
1	2	5	6	13
1	3	2	7	12
2	4	1.5	2	2.5
2	5	1	3	5
3	5	1	3	5
3	6	4	5	6
4	7	1	1	1
5	7	2	3	10
6	7	4	5	6

8. ABC Enterprise is having three plants manufacturing dry cells, located at different locations. The production cost differs from plant to plant. The sales price can differ from region to region as there are five sales offices located in different regions in the country. The shipping cost from the plant to the sales office and other relevant data is given below :

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Production Data Table		
Production Cost Per Unit	Max. Capacity in No. of Units	Plant No.
20	150	1
22	200	2
18	125	3

Shipping Costs Table					
	Sales Office 1	Sales Office 2	Sales Office 3	Sales Office 4	Sales Office 5
Plant 1	1	1	5	9	4
Plant 2	9	7	8	3	6
Plant 3	4	5	3	2	7



	Demand and Sales Price				
	Sales Office 1	Sales Office 2	Sales Office 3	Sales Office 4	Sales Office 5
Demand	80	100	75	45	125
Sales Price	30	32	31	34	29

9. A) A firm produces three products A, B and C which uses two types of raw material I and II of which 5000 and 7500 units are available. The raw material required per unit of each product is given as below :

Raw Material	Requirement per unit of Product		
	A	B	C
I	3	4	5
II	5	3	5

The labour time for each unit of Product A is twice that of Product B and three times of Product C. The entire labour force can produce the equivalent of 3000 units. The minimum demand of each product is 600, 650 and 500 units. Also the ratio of the numbers of the unit produced must be equal to 2 : 3 : 4. Assuming the profits per unit of A, B and C is Rs. 50, Rs. 50 and Rs. 80 formulate the problem as a Linear Programming Model.

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- B) A farm is engaged in breeding hens. The hens are fed on various items grown in the farm in order to supply the nutrients namely N1, N2 and N3 it becomes necessary to buy two products P1 and P2. One unit of Product P1 consists of 36 units of N1, 3 units of N2 and 20 units of N3. One unit of Product P2 consists of 6 units of N1, 12 units of N2 and 10 units of N3. The minimum requirement of N1, N2 and N3 is 108 units, 36 units and 100 units. Product P1 and P2 costs Rs. 20 per unit and Rs. 40 per unit respectively. Formulate Mathematical Model and solve graphically.

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