TB258950F

Reg. No :.....

Name :.....

Integrated M.A. Programme in Social Sciences (C.S.S) EXAMINATION, JANUARY 2025

2020 ADMISSIONS REGULAR (ACCELERATED SEMESTER)

SEMESTER VIII - ELECTIVE COURSE

EC08E02IM20 - Elective - Operations Research

Time : 3 Hours **Maximum Weight : 30**

Part A

I. Answer any Eight questions. Each question carries 1 weight **(8x1=8)**

1. Give the mathematical and economic structure of linear programming problems?
2. What is Operations Research? Describe the managerial applications of Operations Research in decision-making.
3. Give the mathematical formulation of transportation problem.
4. Define an assignment Problem.
5. What is revenue management?
6. Define inventory.
7. What is traffic intensity?
8. Define utilization factor.
9. What do you mean by CPM?
10. What are the common errors in construction of a network?

Part B

II. Answer any Six questions. Each question carries 2 weight **(6x2=12)**

11. Explain the scope of OR.
12. A person requires 10, 12 and 12 units of chemicals A, B and C respectively for his garden. A liquid product contains 5, 2 and 1 units of A, B and C respectively per jar. A dry product contains 1, 2 and 4 units of A, B and C per carton. If the liquid product sells for ₹. 3 per jar and the dry product sells ₹. 2 per carton, how many of each should be purchased in order to minimize cost and meet the requirement?
13. State the difference between the Transportation Problem and Assignment Problem.
14. Briefly explain on EOQ.
15. How to make basic decisions on inventory? Bring out the importance of inventory decisions.
16. Explain unusual customer/server behaviour.
17. Explain in detail about various phases of project management.
18. Briefly explain on the time estimates in PERT.

Part C

III. Answer any Two questions. Each question carries 5 weight **(2x5=10)**

19. Obtain an initial basic feasible solution to the following transportation problem using the Least-cost method.

	M_1	M_2	M_3	M_4	Warehouse Capacity
W_1	11	13	17	14	250
W_2	16	18	14	10	300
W_3	21	24	13	10	400
Market Demand	200	225	275	250	**950**

20. Discuss the significance of inventory.

21. Elucidate on the concept of queuing theory.

22. Calculate the earliest start, earliest finish, latest start and latest finish of each activity of the project given below:

Activity	1-2	1-3	1-5	2-3	2-4	3-4	3-5	3-6	4-6	5-6
Duration (Weeks)	8	7	12	4	10	3	5	10	7	4