

MANAGEMENT PROGRAMME

(MP)

Term-End Examination

December, 2024

MS-51 : OPERATIONS RESEARCH

Time : 3 Hours

Maximum Marks : 100

Weightage : 70%

Note : (i) Attempt any **five** questions.

(ii) All questions carry equal marks.

1. What is Operations Research ? Discuss various types of OR Models and its application in business and management.

2. Consider the transportation problem in the following table :

	To From	Distribution Centres				Supply
		D ₁	D ₂	D ₃	D ₄	
Source	S ₁	2	3	11	7	6
	S ₂	1	0	6	1	1
	S ₃	5	8	15	9	10
	Requirements	7	5	3	2	

Find an initial basic feasible solution of the transportation problem by using Vogel's Approximation Method.

3. What do you mean by Goal Programming ? Discuss the application area of Goal programming.
4. A job shop has four men available for work on four separate jobs. Only one man can work on any job. The cost of assigning each man to each job is given in the following table. The objective is to assign men to jobs such that the total cost of assignment is a minimum :

Jobs					
Men	From \ To	I	II	III	IV
	A	20	25	22	28
	B	15	18	23	17
	C	19	17	21	24
	D	25	23	24	24

Find the optimal assignment.

5. Define inventory. What are the various classifications of inventory ? Discuss.
6. What is a queue ? Briefly explain the important characteristics of queuing system.
7. Write short notes on any ***four*** of the following :
 - (i) Random experiment and Probability
 - (ii) Application of linear programming in business and industry
 - (iii) Applications of Simplex Method
 - (iv) Fixed Order Quantity System
 - (v) Applications of Integer Programming

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