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MS-51

MANAGEMENT PROGRAMME

(MP)

Term-End Examination

December, 2025

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. "Many believe that Operations Research (OR) is a technique that helps resolve conflicts between the production, finance, marketing and personnel functions of a manufacturing unit." Do you agree ? Explain your answer by giving *two* suitable examples.

2. What is an unbalanced assignment problem ? How is the Hungarian Assignment Method applied with respect to such a problem ? Discuss.
3. Using Vogel's Approximation Method, find an initial basic feasible solution to the following transportation problem :

From \ To	Destination				Supply
	D ₁	D ₂	D ₃	D ₄	
O ₁	20	22	17	4	120
O ₂	24	37	9	7	70
O ₃	32	37	20	15	50
Demand	60	40	30	110	

4. What is Dynamic Programming ? Discuss its applications in decision-making. How is it different from Linear Programming.
5. What is an Economic Order Quantity ? Discuss the impact of quantity discount on economic order quantity and hence on inventory control procedure.

[3]

6. “Game theory provides a systematic quantitative approach for analysing competitive situations in which the competitors use logical processes and techniques to determine an optional strategy for winning.” Do you agree with this statement ? Justify your answer with suitable examples.
7. Write short notes on any *four* of the following :
- (i) Goal programming
 - (ii) Sensitivity analysis in Linear Programming Problem
 - (iii) Dual Linear Programming
 - (iv) Saddle point in Game theory
 - (v) Travelling salesman problem

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