

S.No. 8017

24DPBA07

(For the candidates admitted from 2024–25 onwards)

M.B.A. DEGREE EXAMINATION, AUGUST 2025

Second Semester

APPLIED OPERATION RESEARCH

Time : Three hours

Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is operation research?
2. List down the advantages of model in operation research.
3. What is linear programming?
4. Define duality in LPP.
5. What do you meant by degeneracy in transportation problem?
6. What is north west corner rule?
7. Define critical path.
8. What is network scheduling?
9. What is game theory?
10. What is saddle point?

PART B — ($3 \times 5 = 15$ marks)

Answer any THREE questions.

11. Explain the characteristics of operation research.
12. Write the steps involved in solving LPP using graphical method.
13. State the difference between transport and assignment problems.
14. Differentiate between PERT and CPM.
15. Discuss the characteristics of game theory.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Explain the application of operation research in functional area of management.

Or

- (b) Discuss the various advantages of operation research.

17. (a) Discuss the assumptions of LPP.

Or

- (b) Solve the following L.P.P by using graphical method.

$$\text{Maximize } Z = 2x_1 + x_2$$

Subject to

$$3x_1 + 2x_2 \leq 12$$

$$x_1 + 1.5x_2 \leq 6$$

$$\text{and } 2x_1 + x_2 \leq 10$$

$$x_1, x_2 \geq 0$$

18. (a) Explain the various methods of finding initial basic feasible solution in transportation method.

Or

- (b) Find the initial basic feasible solution for the transportation problem by using NWC method.

1	2	6	17
0	4	2	12
3	1	5	11
10	15	15	

19. (a) Explain the various objectives of job shop scheduling.

Or

- (b) Draw the network for the following project:

Activities : P Q R S T U W X Y

Immediate predecessor : — P P — S Q,R,T U T W,X

20. (a) Solve the following pay-off matrix.

		Player B	
		B ₁	B ₂
Player A	A ₁	3	0
	A ₂	0	1

Determine the strategy for A, B value of the game.

Or

- (b) Explain Laplace criterion in business decision theory.
