SIXTH SEMESTER UG DEGREE EXAMINATION, APRIL 2025
(Regular/Improvement/Supplementary)
BBA
GBBA6B13T: MANAGEMENT SCIENCE

Time: 2 ½ Hours   **Maximum Marks: 80**

SECTION A: Answer the following questions. Each carries *two* marks.
(Ceiling 25 marks)

1. What is Game Theory?

2. Introduce the concept of "Dummy Activity."

3. What is a Decision Tree?

4. Mention any two drawbacks in preparing PERT.

5. What is a Slack?

6. Comment on Critical Path.

7. What is Payoff?

8. Distinguish between a Merge event and a Burst event.

9. Compare between Free float and Independent Float.

10. Define Objective function.

11. What is meant by the Transportation Problem?

12. Name any two techniques in the OR.

13. Clarify the meaning of Critical Activity.

14. What is Network Analysis?

15. What is meant by Network Diagram?

SECTION B: Answer the following questions. Each carries *five* marks.
(Ceiling 35 marks)

16. Define Operations Research. State its main characteristics.

17. Differentiate between Vogel's Approximation method and the North West Corner method of transportation problem.

18. Give the meaning and objectives of Linear Programming.

19. Distinguish between PERT and CPM.

20. Draw a network diagram from the following activities:

Activity	1-2	1-3	1-4	2-5	3-5	4-6	5-6
Time Duration	2	4	3	1	6	5	7

21. Comment on: (a) Laplace Criterion (b) Maximax Criterion (c) Huurwics Alpha criterion.

22. Analyze the managerial applications of Network Techniques.

23. Find the initial feasible solution to the transportation problem given below by Vogel's approximation method.

	W1	W2	W3	Supply
F1	2	7	4	5
F2	3	3	1	8
F3	5	4	7	7
F4	1	6	2	14
Demand	7	9	18	

SECTION C: Answer any *two* questions. Each carries *ten* marks.

24. Solve the following problem graphically.

Maximize:

$$Z = 60x_1 + 40x_2$$

Subject to: $2x_1 + x_2 \geq 60$

$$x_1 \geq 25$$

$$x_2 \geq 35$$

$$x_1 \leq 0, x_2 \leq 0$$

25. Elaborate the objectives and scope of OR in modern business management.

26. For the following transportation problem, obtain an initial feasible solution by using the Least Cost method:

Origin	Destination				Availability
	1	2	3	4	
1	10	8	11	7	20
2	9	12	14	6	40
3	8	9	12	10	35
Requirements	16	18	31	30	**95**

27. Define Linear Programming. Discuss in detail its merits and limitations.

(2 × 10 = 20 Marks)