

ANURAG Engineering College

(An Autonomous Institution)

I MBA II Semester Supplementary Examinations, February – 2025

QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS**(MASTER OF BUSINESS ADMINISTRATION)****Time: 3 Hours****Max. Marks: 60****Section – A (Short Answer type questions)****(10 Marks)****Answer All Questions**

	Course Outcome	B.T Level	Marks
1. Define operations research.	CO1	L1	1M
2. What is the origin and growth of OR?	CO1	L1	1M
3. What are the limitations of LPP?	CO2	L1	1M
4. Define Surplus Variable.	CO2	L1	1M
5. Define Assignment problem.	CO3	L1	1M
6. Define Transportation problem.	CO3	L1	1M
7. List the Network Techniques.	CO4	L1	1M
8. Define Critical path.	CO4	L1	1M
9. Define Zero Sum Game.	CO5	L1	1M
10. Define Finite population.	CO5	L1	1M

Section B (Essay Questions)**Answer all questions, each question carries equal marks.****(5 X 10M = 50M)**

11. Outline Operation Research and discuss its nature and scope. CO1 L2 10M
A)

OR

B) What is Model in Operation Research? Explain the principles, characteristics and advantages of good model. CO1 L2 10M

12. What are the advantages of linear programming? What is the procedure to solve a LPP by simplex method? CO2 L3 10M
A)

OR

B) Solve the given linear programming problems graphically: CO2 L3 10M

Maximize: $Z = 8x + y$

Constraints are,

$$x + y \leq 40$$

$$2x + y \leq 60$$

$$x \geq 0, y \geq 0$$

13. Find solution of travelling salesman problem (MIN case). CO3 L3 10M
 A)

Work\Job	1	2	3	4
1	x	4	9	5
2	6	x	4	8
3	9	4	x	9
4	5	8	9	x

OR

- B) What are the steps involved in Hungarian Method? Explain in detail. CO3 L2 10M

14. CO4 L2 10M

Activity	A	B	C	D	E	F	G	H
Predecessor	-	-	A	A	A	B,C	D	E,F,G
a (in days)	2	10	8	10	7	9	3	5
b (in days)	12	26	10	20	11	9	7	5
m (in days)	4	12	9	15	7.5	9	3.5	5

From the above particulars of a project, determine the probability of completing the project by (i) 29 days, (ii) 30 days, and (iii) 26 days.

OR

- B) Discuss the process of constructing a decision tree for a decision problem. CO4 L3 10M

15. Explain the components in the elementary queuing model. CO5 L2 10M

A)

OR

- B) Find optimal solution to the following game. CO5 L3 10M

Firm	Firm- B		
	Strategies	B ₁	B ₂
Firm-A	A ₁	25	5
	A ₂	10	15