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MASTER OF BUSINESS ADMINISTRATION (M.B.A.)
EXAMINATION: DECEMBER - 2025/JANUARY-2026
SEMESTER - IV

Sub.: Operations Research (MBA403)

Date : 02/01/2026

Total Marks : 60

Time: 2.00pm to 4.30pm

- Instructions:** 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q. 1. Write Short notes on (Any Three) (15)

1. Differentiate Between PERT and CPM
2. Steps Involved in Monte-Carlo Simulation
3. Define Operations Research and explain its features
4. Hungarian Method of Solving Assignment Problem
5. Steps Involved in Monte-Carlo Simulation

Q. 2. Answer in detail (Any One) (10)

1. Find the solution of given Assignment problem using Hungarian method (MIN case)

Job →	I	II	III	IV	V
Workers ↓					
A	10	5	13	15	16
B	3	9	18	13	6
C	10	7	2	2	2
D	7	11	9	7	12
E	7	9	10	4	12

2. Identify the type of problem .Given transportation table:

Source	A	B	C	Supply
1	2	7	4	5
2	3	3	1	8
3	5	4	7	7
4	1	6	2	14
Demand	7	9	18	

Q. 3. Answer in detail (Any One) (10)

1. Define Simulation. Discuss advantages and disadvantages.
2. Find solution using Vogel Approximation Method –

	D1	D2	D3	D4	Supply
S1	19	30	50	7	10
S2	70	30	40	60	9
S3	40	8	70	20	18
Demand	5	8	7	14	

Q. 4. Answer in detail (Any One)**(10)**

1. Solve the following transportation problem by using North-west corner method –

From	To			Supply
	P	Q	R	
A	2	7	4	5
B	3	3	1	8
C	5	4	7	7
D	1	6	2	14
Demand	7	9	18	

2. You work as a manager for a chip manufacturer, and you currently have 3 people on the road meeting clients. Your salespeople are in Jaipur, Pune and Bangalore, and you want them to fly to three other cities: Delhi, Mumbai and Kerala. The table below shows the cost of airline tickets in INR between the cities:

	Delhi	Kerala	Mumbai
Jaipur	2500	400	3500
Pune	4000	6000	3500
Benglore	2000	4000	2500

Q. 5. Case study**(15)**

A truck owner finds from his past records that the maintenance cost of a truck (whose purchase price is Rs. 3,00,000/- during the first eight years of its life and the resale price at the end of each year is as follows –

Year	Maintenance Cost (Rs.)	Resale Price (Rs.)
1	36,000	2,00,000
2	48,000	1,50,000
3	60,000	1,00,000
4	72,000	80,000
5	84,000	70,000
6	96,000	60,000
7	1,08,000	50,000
8	1,20,000	40,000

Questions:

1. What is the running cost?
2. Find the Scrap value.
3. When should the machine be replaced?
