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MASTER OF BUSINESS ADMINISTRATION (M.B.A.)
EXAMINATION: MAY- 2024
SEMESTER - IV
Sub.: Operations Research (MBA403)

Date : 24/05/2024

Total Marks : 60

Time: 10.00am to 12.30pm

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

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

1. Operation Research
2. Transformation Problem
3. Types of Replacement Problem
4. Business Competitive Advantages of Simulation
5. Vogel's Approximation Method (VAM)

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

1. Check which types of the transportation problem –

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

2. Define queue. Discuss the structure of a queuing system with suitable diagram.

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

1. Write Factors Necessary for Replacement of Equipment in Business.
2. Calculate the total minimum cost to reduce the total expense of transportation

From					Supply
	D1	D2	D3	D4	
O1	11	13	17	14	250
O2	16	18	14	10	300
O3	21	24	13	10	400
Demand	200	225	275	250	

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

1. Explain the steps involved in Hungarian method of solving assignment problem.
2. Define Simulation. Discuss the advantages and disadvantages of simulation.

Q. 5. Case study

(15)

A firm is considering replacement of a machine, whose cost price is Rs. 12,200 and the scrap value is Rs. 200. The running (maintenance and operating) cost are found from experience are as follows: Year 1 2 3 4 5 6 7 8 Running Cost 200 500 800 1200 1800 2500 3200 4000 .When should the machine be replaced?

Question

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