Paper id: 252366

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MBA
(SEM II) THEORY EXAMINATION 2024-25
QUANTITATIVE TECHNIQUES FOR MANAGERS

TIME: 3 HRS

M.MARKS: 70

Note: Attempt all Sections. In case of any missing data, choose suitably.

SECTION A

1. Attempt all questions in brief. 02 x 7 = 14

Q no.	Question
a.	Define Operations Research and mention its scope.
b.	What is the North West Corner Method in transportation problems?
c.	State the Hungarian Method and its use in assignment problems.
d.	Discuss various decision making environments.
e.	Explain the concept of sequencing in operations research.
f.	What is replacement analysis? Give an example of its application.
g.	List two differences between CPM and PERT in project management.

SECTION B

2. Attempt any three of the following: 07 x 3 = 21

a.	Discuss the role of Operations Research in inventory management and decision-making.
b.	Discuss Simplex Method by giving suitable example.
c.	Describe the steps involved in solving a transportation problem.
d.	Describe the sequencing problem for n jobs and 2 machines with an example.
e.	Explain the GANTT Chart.

SECTION C

3. Attempt any one part of the following: 07 x 1 = 07

a.	Discuss the statement that OR is Science and an Art both?
b.	Discuss various models of Operations Research.

4. Attempt any one part of the following: 07 x 1 = 07

a.	Solve the following Linear Programming Problem by using the Graphical Method. Maximum $Z = 3X + 4Y$ Subject To, $X + 2Y \leq 30$ $2X + 7Y \geq 14$ Where $X, Y \geq 0$
b.	Write short notes on Degeneracy in LPP.

5. Attempt any one part of the following: 07 x 1 = 07

a. Find solution of Assignment of workers with Job to minimize the total cost.

Worker/Job	J1	J2	J3	J4	J5
W1	80	211	117	5	66
W2	19	13	10	70	1
W3	5	22	30	19	11
W4	17	3	25	25	25
W5	27	30	3	35	45

b. Differentiate between an Assignment Problem and a Transportation Problem.

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6. Attempt any *one* part of the following:

07 x 1 = 07

a.	Explain the processing of n jobs through two machines and provide the algorithm used.
b.	What are the key elements of a Queuing system? What is LIFO queue discipline?

7. Attempt any *one* part of the following:

07 x 1 = 07

a.	Develop a replacement policy for equipment based on its optimal replacement time and justify your choice.
b.	Construct a network diagram for a project using CPM techniques and calculate the critical path from the following information –

Activity	A	B	C	D	E	F	G	H	I	J	K	L	M
Predecessor Activity	E	A	B	K	-	E	F	F	F	L	C,G,H	D	L
Time in Days	4	2	1	12	14	2	3	2	4	3	4	2	2