Exam. Code: 1383
Sub. Code: 9466

2032

B. Voc. (Logistic Management)-5th Semester

LEM-505: Operation Research

Time allowed: 3 Hours | Max. Marks: 80

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Unit.*

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I. Attempt *any four* questions out of following: -

(a) What are the stages involved in the Operation Research approach to problem solving?

(b) Explain different principles of duality.

(c) Describe Initial basic feasible solution in transportation.

(d) How can a Ganlt Chart be useful in solving sequencing problem?

(e) What do you meant by two persons zero sum games?

(f) Elaborate decision making under conditions of uncertainty. (4×4)

UNIT – I

II. What do you meant by operations research? Discuss its significance and scope. (16)

III. Slove the following LPP

Max $Z = 4x + 3y + 5z - 150$

Subject to $2x + 3y + 2z \leq 400$

$3x + 2y + 2z \leq 350$

$x + 4y + 2z \leq 300$

where as, $x, y, z \geq 0$ (16)

UNIT-II

IV. (a) Explain the Vogel's approximation method of solving a transportation problem.

(b) How is optimality analysis done in a transportation problem? (8+8)

V. Solve the following assignment problem. The data given in the table refer to production in unts.

Machines

Operators	A	B	C	D
1	10	5	7	8
2	11	4	9	10
3	8	4	9	7
4	7	5	6	4
5	8	9	7	5

(16)

P.T.O.

UNIT-III

VI. There are six jobs that must go through two machines A and B in the same order. The processing time in hours given below:-

Jobs / Machines	J_1	J_2	J_3	J_4	J_5	J_6
A	8	10	11	12	16	20
B	7	15	10	14	13	9

(16)

VII. Define queue discipline. Discuss the role of queuing theory in decision making and its applications in today's world. (16)

UNIT-IV

VIII. What is Monte Carlo simulation? Discuss the application of simulation techniques for decision making. (16)

IX. Using the dominance property obtain the optimal strategies for both the players and determine the value of the game. The pay off matrix for Player A is given:-

		Player-B				
		I	II	III	IV	V
Player-A	I	2	4	3	8	4
	II	5	6	3	7	8
	III	6	7	9	8	7
	IV	4	2	8	4	3

(16)

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