30-3-2016

DOON UNIVERSITY, DEHRADUN
Semester Mid Term Examination, even Semester, 2016
School of social science
M.Sc. (Economics) 8th Sem
Course: SSEI-523:Operation Resaerch

Time Allowed: 2Hours *Maximum Marks: 30*

1. For the following linear programming problem, determine the optimal solution (10 marks)

Max $X + 2Y$

s.t. $X + Y \leq 3$

$X - 2Y \geq 0$

$Y \leq 1$

$X, Y \geq 0$

Or

10 marks

For the transportation problem given by the following tableau, find an initial basic feasible solution by the North-West corner method and then find an optimal solution.

					Supply
10	15	10	12	20	8
5	10	8	15	10	7
15	10	12	12	10	10
Demand 5	9	2	4	5	

The supply at Source 3 is now reduced from 10 to 6. There is a penalty of 5 for each unit required but not supplied. Find the new optimal solution.

2. Objective type questions. (5 marks)

1. The maximization or minimization of a quantity is the
   a. goal of management science.
   b. decision for decision analysis.
   c. constraint of operations research.
   d. objective of linear programming.

2. Decision variables

	W_1	W_2	W_3	W_4	Supply
F_1	10	0	20	11	20
F_2	12	7	9	20	25
F_3	0	14	16	18	15
Demand	10	15	15	20	

OR

Find out the optimum minimum to reach from four origin to six destination of products.

(5 marks)

							a_i
	25	30	20	40	45	35	37
	30	25	20	30	40	20	22
	40	20	40	35	45	22	32
	25	24	50	27	30	25	14
b_j	15	20	15	25	20	10	

4. Explain the symbolic and physical model of the operation research. (5 marks)
   OR
   Write down the managerial significance of duality. (5 marks)
5. Discuss the role of sensitive analysis in linear programming under what circumstances is it needed, under what circumstances is it needed? (5 marks)

OR

Write down the limitation of LPP. (5 marks)