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MTH601 - Operations Research – Final Term Paper 2005
Spring – session 4

Time Allowed: 150 Minutes
M=Marks
Total Questions: 8

MTH601 - Operations Research - Q. No. 1 M - 4
Define the followings.
(a) Impossible Assignment
(b) Unbounded Solution.

MTH601 - Operations Research - Q. No. 2 M - 10
Consider the problem
maximize z = x1 + 5x2 + 3x3
Subject to
x1 + 2x2 + x3 = 3
2x1 − x2 = 4
The variable
x1 , x2 , x3 ≥ 0
x3 plays the role of a slack. Use big M-method to solve the problem.

MTH601 - Operations Research - Q. No. 3 M - 4
How the problem of the degeneracy arises in a transportation problem?

MTH601 - Operations Research - Q. No. 4 M - 4
Define the followings in Queuing Theory.
a. Customer
b. Server
c. Priority

MTH601 - Operations Research - Q. No. 5 M - 4
What are the variants of the simplex method? Write few lines about the followings.
(a) Unbounded solution.
(b) Unrestricted variables.

MTH601 - Operations Research - Q. No. 6 M - 10
Five different machines can process any of the five required jobs with different profits resulting from each assignment.

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Job	Machine A	B	C	D	E
1	130	137	140	128	140
2	140	124	127	121	136
3	140	132	133	-	135
4	-	138	140	136	136
5	129	-	141	134	139

Find the maximum profit possible through optimum assignments.

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MTH601 - Operations Research - Q. No. 7 M - 4

How can the linear programming be applied to management problem?

MTH601 - Operations Research - Q. No. 8 M - 10

Consider the transportation problem having the following parameter table.

		Destination 1	2	3	4	Supply
Source	1	7	4	1	4	1
	2	4	6	7	2	1
	3	8	5	4	6	1
	4	6	7	6	3	1
Demand		1	1	1	1	

Use the northwest corner rule to obtain an initial basic feasible solution.

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