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**SVKM's NMIMS**  
**School of Distance Learning**

Programme: PGDSCM

Academic year: 2012 – 2013

Semester: IV

Subject: Decision Analysis and Modeling

Course: New

Marks 70

Date: 10.01.2013

Time: 3.00 p.m. to 6.00 p.m.

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**Instructions:**

Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer book, which is provided for their use.

NB:

1. All 4 questions are compulsory.
2. Candidates should attempt questions as per the internal options available.

Q 1) Attempt any 2 out of 3

Marks 10

- a) What are slack, surplus and artificial variables in Simplex Method. Give examples.
- b) What is meant by saddle point. Define pure and mixed strategy.
- c) Explain multiple regression analysis.

Q 2) Write Short Notes. Attempt any 2 out of 5

Marks 10

- a) Describe individual decision making and group decision making.
  - b) Minimum Spanning Tree (Prims and Kruskal's)
  - c) Modified Distribution Method.
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d) Branch and Bound method.

e) Breakeven Analysis under certainty.

Q 3) Attempt any 3 out of 5

Marks 30

a) Solve by Graphical Method

Maximise  $z = 5x + 3y$

Subject to

$$4x + 6y \leq 80$$

$$2y \leq 30$$

$$6x + 3y \leq 60$$

Where  $x, y \geq 0$

b) Solve the following transportation problem to have optimal solution.

	A	B	C	D	E	Supply
P	3	6	9	6	5	23
Q	8	2	7	7	9	35
R	2	2	5	8	7	45
S	5	7	4	9	8	19
Demand	40	36	17	16	13	

c) Solve the game given below and find the value of game.

$$\begin{pmatrix} 1 & 7 & 2 \\ 8 & 2 & 9 \\ 6 & 1 & 8 \end{pmatrix}$$

d) A company dealing with newly invented telephonic device is faced with the problem of selecting the following strategies.

I) Manufacture the device itself.

