Subject Code: 13MBA1006
ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
1 MBA I Semester Regular Examinations February-2015
QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS

Time: 3 hours   **Max Marks: 60**

Answer any *five* questions.
All questions carry equal marks.

1. Use the graphical method to solve the following Linear Programing Problem:
   Minimize $Z = -x_1 + 2x_2$
   Subject to the constraints: $-x_1 + 3x_2$ 10, $x_1 + x_2$ 6 , $x_1 - x_2$ 2 .

2. Explain the Simplex procedure for finding solution to the maximization Linear Programming Problem.

3. A computer centre has three expert programmers. The center wants three application programs to be developed. The head of the computer center, after carefully studying the programs to be developed, estimates the computer time in minutes required by the experts for the application programs as follows:

Programmers		A	B	C
	I	120	100	80
Programs	II	80	90	110
	III	110	140	120

   Assign the programs to the programmers in such way that the total computer time is minimum.

4. Determine an initial basic feasible solution to the following T.P using Vogel's approximation method.
   Destinations

	A	B	C	D	E	Supply
I	2	11	10	3	7	4
II	1	4	7	2	1	8
III	3	9	4	8	12	9
Demand	3	3	4	5	6	21

5. The table below shows the data obtained during the training program: Test the effectiveness of the training program at 1% level:

	Improved	Not Improved	Total
Trained	3534	1319	4853
Not Trained	270	252	522
Total	3804	1571	5375

6. Given the following data:

X	5	2	12	9	15	6	25	16
Y	64	87	50	71	44	56	42	60

Estimate the regression equation of x on y.

7. Given below is the table that lists the jobs of network along with their time estimates.

Activity	to	tm	Tp
1 - 2	1	1	7
1 - 3	1	4	7
1 – 4	2	2	8
2- 5	1	1	1
3 – 5	2	5	14
4 – 6	2	5	8
5 – 6	3	6	15

   a) Draw the project network.
   b) Find the expected duration and variance of the project length..
   c) What is the probability that the project is completed in 13 weeks.

8. In a game of matching coins with two players, suppose A wins one unit of value when there are two heads, wins nothing when there are two tails and losses ½ unit of value when there is one head and one tail. Determine the payoff matrix, the best strategy for each player and the value of the game to A.

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