ADITYA INSTITUTE OF TECHNLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I MBA I Semester Regular / Supplementary Examinations, December-2015
Quantitative Analysis for Business Decisions

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

Answer any five questions
All questions carry equal marks.

1. Solve the following LPP by Graphical Method

   Maximize $Z = 50x_1 + 30x_2$

   Subject to Constraints $2x_1 + x_2 \geq 18$,

   $$x_1 + x_2 \geq 12,$$
   $$3x_1 + 2x_2 \geq 34,$$
   $$x_1, x_2 \geq 0$$

2. Explain the computational procedure of Simplex Method?

3. Find Initial Basic Feasible Solution by using Vogel's Approximation Method (VAM).

<div align="center">Ware House</div>

		W1	W2	W3	W4	Factory Capacity
Factory	F1	19	30	50	10	7
	F2	70	30	40	60	9
	F3	40	8	70	20	18
	Ware House Requirement	5	8	7	14	34

4. Fit a second degree parabola of the following data

X	1	5	10	15	20
Y	5	15	20	10	15

5. Solve the following game by using Dominance Property

Payer - B

		I	II	III	IV	V	VI
	I	4	2	0	2	1	1
Player - A	II	4	3	1	3	2	2
	III	4	3	7	-5	1	2
	IV	4	3	4	-1	2	2
	V	4	3	3	-2	2	2

6. Describe Chi-square test. 1000 students at college level were graded according to their I.Q and the economic conditions of their homes. Use Chi-square test to find out whether there is any association between economic conditions at home and I.Q.

Economic conditions	I.Q		
	High	Low	Total
Rich	460	140	600
Poor	240	160	400
Total	700	300	1000

7. Explain the following
   (a) Assumptions of Karl Pearson's Correlation?
   (b) Define Regression Co-efficient and their Properties?

8. The following table lists the jobs of network along with their time estimate;

Activity	1-2	2-3	2-4	3-5	4-5	4-6	5-7	6-7	7-8	7-9	8-10	9-10
a	1	1	1	3	2	3	4	6	2	5	1	3
m	1.5	2	3	4	3	5	5	7	4	6	2	5
b	5	3	5	5	4	7	6	8	6	8	3	7

Construct PERT network and Find
a) Critical Path
b) Variance
c) Project duration at 95% Probability. (Z value 1.65)

*****