

MBA I Semester Regular/Suppl. Examinations, December 2015
QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS
(Master of Business Administration)

Time: 3 Hours**Max. Marks: 60****Note:** Answer All Sections of Questions

All Questions from **Section-A** are to be answered at one place.

SECTION-A

6 × 2 = 12M

1. Explain Decision Trees in Decision Analysis.
2. Discuss the principle of Dominance in Game Theory.
3. Write the basic steps in formulation of Linear Programming Problem.
4. Mention the steps in finding IBFS using North West Corner Method.
5. Compare Travelling Salesmen model and Hungarian Method of Assignment Problem.
6. Define Optimistic time estimate and Pessimistic time estimate in PERT.

SECTION-B

3 × 12 = 36M

1. a) What are Various Decision Making criteria in Decision making Under Uncertainty?

(OR)

- b) Use Big-M Method to solve the following LPP.

$$\text{Minimize } z = 12x_1 + 20x_2$$

$$\text{Subject to } 6x_1 + 8x_2 \geq 100$$

$$7x_1 + 12x_2 \geq 120$$

$$x_1, x_2 \geq 120$$

2. a) Explain various Methods to find the Initial Basic solutions in Transportation model. Solve the following Transportation Model using Vogel's Approximation Method.

	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>Availability</i>
<i>A</i>	11	13	17	14	250
<i>B</i>	16	18	14	10	300
<i>C</i>	21	24	13	10	400
<i>Demand</i>	200	225	275	250	

(OR)

- b) A Salesman wants to Visit cities 1, 2, 3 and 4. He does not want to Visit any city twice before Completion the tour of all the cities and wishes to return to his home city, the starting station. Cost of going from one city to another in rupees is given in the following table. Find the least cost route

To City

	1	2	3	4
From city	0	30	80	50
	40	0	140	30
	40	50	0	20
	70	80	130	0

3. a) Solve the following game

		Player B			
		B ₁	B ₂	B ₃	B ₄
Player A	A ₁	2	1	0	-2
	A ₂	1	0	3	2

(OR)

- b) A small project consists of seven activities for which the relevant data are given below:

Activity	Preceeding Activities	Activity Duration (Days)
A	-	4
B	-	7
C	-	6
D	A,B	5
E	A,B	7
F	C,D,E	6
G	C,D,E	5

- Draw the network.
- Find the Critical Path.
- Find the project duration.

SECTION – C

CASE STUDY (Compulsory)

1 × 12 = 12M

A project is represented with the following activities

Activity	Least time	Greatest time	Average time
1-2	5	10	8
1-3	18	22	20
1-4	26	40	33
2-5	16	20	18
2-6	15	25	20
3-6	6	12	9
4-7	7	12	10
5-7	7	9	8
6-7	3	5	4

Draw a network and find the probability of completing the project duration if the original contract time of completing the project is 41.5 weeks.
