**Subject Code: MB1316/R13**

**M B A I Semester Regular Examinations, Feb-2014**

**QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS**

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

**Answer any FIVE of the following**
**All questions carry equal marks. Q.No.8 is compulsory**

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1. What is decision tree? Explain the construction of it with a suitable example.

2. Solve the following LPP using the Simplex method?

| | |
|---|---|
| Maximize | $Z=50X + 30y$ |
| Subject to | $4X + 2Y \leq 10$ |
| | $2X + 2Y \leq 8$ |
| | $X,Y \geq 0$ |

3. The following data show the number of seeds germinating out of 10 on damp filter for go set of seeds. Fit a Binomial Distribution to this data;

| X | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Y | 6 | 20 | 28 | 12 | 8 | 6 | 0 | 0 | 0 | 0 | 0 |

4. What is the optimal strategy in the game described by the matrix?

Players A &B Strategies

| | | | |
|---|---|---|---|
| -5 | 3 | 1 | 20 |
| 5 | 5 | 4 | 6 |
| -4 | -2 | 0 | -5 |

5. a) Distinguish between Correlation and Regression?
   b) Derive two regression lines and explain with suitable examples?

6 How will you solve an Assignment problem where a particular Assignment is prohibited?

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7. A project has the following time schedule;

| Activity | Time in months | Activity | Time in months |
|---|---|---|---|
| 1-2 | 2 | 4-6 | 3 |
| 1-3 | 2 | 5-8 | 1 |
| 1-4 | 1 | 6-9 | 5 |
| 2-5 | 4 | 7-8 | 4 |
| 3-6 | 8 | 8-9 | 3 |
| 3-7 | 5 | | |

Draw a network and compute;

(a) Critical path and its duration

(b) Total float for each activity

8. **CASE STUDY :**

The Capitan of Cricket team has to allot Five middle batting positions to Five batsmen. The average runs scored by each bats man at these positions are as follows.

| Batting position / Batsmen | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| P | 40 | 40 | 35 | 25 | 50 |
| Q | 42 | 30 | 16 | 25 | 27 |
| R | 50 | 48 | 40 | 60 | 50 |
| S | 20 | 19 | 20 | 18 | 25 |
| T | 58 | 60 | 59 | 55 | 53 |

a). Find the assignment of batsmen to positions which would give the maximum number of runs

b). If another batsmen U with the following average runs with the batting positions as given below;

| Position | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Runs | 45 | 52 | 38 | 50 | 49 |

Is added to the team, should he be included to play in the team? If so, whom he will be replace?

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