

Code No: 22003

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

MBA-II Semester Supplementary Examinations July 2010

QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS

Time: 3hours

Max.Marks:60

Answer any Five questions
All questions carry equal Marks

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1. Explain the role Operations Research specialist in the business organization. What are the interfaces of OR specialist with other departments?
2. What are the types of decisions? Explain them in brief with suitable example.
3. Describe briefly Two Phase Method. Solve the following problem by Two phase method.

$$\begin{aligned} \text{Minimize } Z &= x_1 + x_2 \\ \text{Subject to: } & 2x_1 + x_2 \geq 4 \\ & x_1 + 7x_2 \geq 7 \\ \text{and} & x_1, x_2 \geq 0 \end{aligned}$$

4. Distinguish between transportation problem and transshipment problem. What are the types of transshipment problem? Explain them suitable sketches.
5. a) Consider the following pay-off matrix and determine the optimal strategy:

| | | | | |
|---|-----|---|----|-----|
| | | B | | |
| | | I | II | III |
| A | I | 6 | 9 | 4 |
| | II | 5 | 10 | 7 |
| | III | 9 | 8 | 9 |

- b) Write a note on zero-sum games.
6. Two repair persons are attending five machines in a workshop. Each machine breaks down according to a Poisson distribution with mean three per hour. The repair time per machine is exponential with mean 15 minutes
 - a) Find the probability:
 - i. That the two repair persons are idle.
 - ii. That one repair person is idle.
 - b) What is the expected number of idle machines not being serviced?
7. a) Briefly describe the steps involved in method of simulating.
 - b) What are the limitations of simulation Technique?
8. Discuss in brief following concepts in PERT/CPM.
 - a) Time-cost trade-off
 - b) Resource leveling in a project.
