S. S. Jain
Subodh Management Institute

MBA II Semester

M-203
Quantitative Techniques
Sample Questions

Part A: Short answer question (up to 25 words)

Part B: Analytical/ problem Solving questions

Part C: Descriptive/ Analytical/ Problem Solving/ Case questions.

PART A

Unit I

Very short questions

Unit 1 Introduction to quantitative approaches

Q1 Define of operation research?
Q2 Define quantitative techniques
Q3 Write two limitation of quantitative technique.
Q4 Mention different type of model used in quantitative techniques
Q5 what is meant by flexibility in a model?

Unit 2 linear programming

Q6 Describe short notes as given below:

Basic Solution
Optimum Solution
Unbounded Solution
No Feasible Solution
Slack Variable
Surplus Variable
Artificial Variable
No Feasible Solution
Q7 Define linear programming

Unit 3 transportation and assignment models

Q8 Define the following terms:
Degeneracy
Balance Transportation Problem
Unbalance Transportation For Problem
Least Cost Method
Transportation Model
Assignment Model
Multiple Solutions

Unit 4 decision theory

Q9 Explain the following terms:

Certainty
Opportunity Loss
Uncertainty
Regret Table
Expected Monetary Value
Expected Value Of Perfect Information

Unit 5 game free Game Theory

Q10 Explain the following:
Saddle Point
Pure Strategy
Mixed Strategy
Zero Sum Games
Value Of The Game
Strategies

Unit 6 replacement theory

Q11 What is replacement theory?
Q12 Define operating cost.
Q13 Define maintenance cost.
Q14 Explain scrap value.
Q15 What is group replacement policy?
Q16 What is individual replacement policy?

Unit 7 queuing theory

Q17 Explain the following terms
arrival rate
service rate
service mechanism
waiting line channels
Queuing discipline
waiting line
utilisation ratio

Unit 8 simulation

Q18 What is simulation?
Q19 Define Monte Carlo model?

PART B

Unit I

Short questions

Unit 1 Introduction to quantitative approaches

Q1 Mention different type of models used in quantitative technique operation research.
Q2 Describe various stages of Modern construction procedure
Q3 how does quantitative techniques help in managerial decision making?
Q4 Give advantage of model in quantitative technique.
Q5 What is the role of models in business and industry

Unit 2 linear programming

Q6 explain linearity in objective equation.
Q7 Explain linearity in requirement constraint
Q8 Write limitations of linear programming.
Q9 What do non negativity constraint represent in linear programming?
Q10 Write on the role of linear programming.
Q11 What type of problems can linear programming help in solving?
Q12 State the areas where linear programming can be applied.

Unit 3 transportation and assignment models

Q13 How unbalance problem can be solved?
Q14 What are the characteristics of transportation problem?
Q15 What is the maximum number of occupied cells in any solution of a transportation problem
Q16 Difference between transportation and assignment model?
Q17 What are the basic characteristics of the transportation problem?
Q18 State the similarities between transportation and assignment model.
Q19 What you mean by prohibited assignment.

Unit 4 decision theory

Q20 Explain difference criteria of decision making under uncertainty.
Q21 What is expected regret on an act?
Q22 What is a decision tree?
Q23 Differentiate between decision making under uncertainty and risk.

Q24 Define states of nature in reference to decision theory.
Q25 What is expected value of perfect information? Give formula to calculate it.

Unit 5 game free Game Theory

Q26 Write any two characteristics of Game Theory.
Q27 Write down the limitation of game theory.
Q28 Explain law of dominance in Game Theory.
Q29 Differentiate between game theory and decision theory.
Q30 Write down the basic assumptions made in Game Theory.
Q31 Write a brief note on graphical method of solving a game.

Unit 6 replacement theory

Q32 Write down different types of Replacement situations.
Q33 What are different types of Replacement decision?
Q34 What is difference between capital cost and replacement cost?
Q35 Give the formula for replacement of item that deteriorate with time and money value changes.
Q36 Write down the formula for replacement of items that deteriorate with time and money value remains constant.

Unit 7 queuing theory

Q37 What is the difference between expected queue length and length of non-empty queue?
Q38 Give various assumption of queuing theory
Q39 discuss various types of queue disciplines.
Q40 Give any two importance of Queuing.
Q41 Discuss limitation of Queuing.
Q42 Write down the application of queuing model.

Unit 8 simulation

Q43 State any two advantages of simulation.
Q44 Write on the various reasons to use simulation.
Q45 Write down various phases for simulation process.
Q46 Write down the limitation of simulation.

PART C

Unit I

Long question

Unit 1 Introduction to quantitative approaches

Q1 Describe in brief some of important quantitative techniques used in modern business and industrial units.

Unit 2 linear programming

Q2 What do you understand by "judicial allocation of limited resources"? Discuss the role and limitation of linear programming approach.

Unit 3 Transportation and assignment models

Q3 Explain the procedure of Modi method in transportation problem with a suitable example

Unit 4 decision theory

Q4 What you mean by statistical decision theory? Take an appropriate situation and prepare conditional profit and conditional opportunity loss tables and then workout expected value of perfect information.

Unit 5 game free Game Theory

Q5 The Game Theory provides the basis for a rational decision? Do you agree with this statement? Answer with reasons.

Unit 6 replacement theory

Q6 What is replacement? Describe some important replacement situations and replacement policies.

Unit 7 queuing theory

Q7 Explain the basic structure of waiting line situation. Give physical example in each case. Why is it that in a queue model service rate exceeds arrival rate?

Unit 8 simulation

Q8 "Simulation is a process of obtaining the essence of real life situations without reality ".discuss with suitable example.