

## B.Sc. Sem.-6 Examination

CC-310

Statistics

April-2025

Time : 2-30 Hours]

[Max. Marks : 70

- Q.1 (a) What is linear programming give its mathematical formulation also gives it uses assumptions and limitations. 7
- (b) Describe Simplex method of solving linear programming problem. 7
- OR
- (a) Discuss the graphical method of solving linear programming problem 7
- (b) Explain the term (i) Unbounded solution (ii) Constraints (ii) Slack and Surplus variable. 7
- Q.2 (a) Describe the computational procedure of the optimality test in a transportation problem. 7
- (b) Write a short note on Matrix Minima Method. 7
- OR
- (a) Explain Hungarian method of solving assignment problem 7
- (b) Write a short note on North West Corner Rule. 7
- Q.3 (a) Explain the meaning of PERT. Give the advantages and limitations of PERT. 7
- (b) Explain the following terms: (i) EST (ii) Float Time (iii) LFT 7
- OR
- (a) Compare and contrast CPM and PERT. Under what conditions would you recommend the scheduling by PERT? 7
- (b) Explain terms 7
- (i) Event
- (ii) Activity
- (iii) Dummy Activity
- Q.4 (a) What is game theory? State the assumption and limitations of the game theory? 7
- (b) Explain two person zero sum game, giving suitable example.. 7
- OR
- (a) Explain the term (i) Maximin principle (ii) Minimax principle (iii) Payoff Matrix . 7
- (b) Explain Dominance rule of game theory. 7

## Q.5 Attempt any Seven

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- 1 Define Artificial Variable.
- 2 Define IBFS.
- 3 What is degeneracy in transportation problem?
- 4 What do you mean by unbalanced transportation problem?
- 5 For a transportation problem having 4 origins and 5 destinations, how many constraints can be formed.
- 6 Why Vogel's Approximation Method is also known as Penalty method.
- 7 Define most likely time.
- 8 Define optimistic time.
- 9 Define pessimistic time.
- 10 Which principle is used to reduce the size of the payoff matrix of the game?
- 11 Define fair game.
- 12 Does a saddle point always exist in two people zero sum game? Justify your answer.