B. Sc. (IT) Final Semester -VI
Paper VI
Operation Research

Unit 1

Overview of operations Research: OR models, OR Techniques

Linear Programming : Introduction, Graphical solution; Graphical sensitivity analysis, The standard form of linear programming problems, Basic feasible solutions, unrestricted variables, simplex algorithm , artificial variables, Big M and two phase method, Degeneracy, alternative optima, unbounded solutions, infeasible solutions.

Unit 2

Dual problems: Relation between primal and dual problems – Dual simplex method

Transportation model: starting solutions. North West corner Rule, lowest cost method, Vogels approximation method – Transportation algorithms – Assignment problem – Hungarian Method.

Unit 3

Network Models: Definitions, CPM and PERT, Their Algorithms Integer Programming : Branch and Bound Algorithms cutting plan algorithm.

Dynamic Programming: Recursive nature of dynamic programming, Forward and Backward Recursion.

Unit 4

Assignment Problem – Zero-One Programming Model for Assignment Problem, Types of Assignment Problem, Hungarian Method, Branch and Bound Technique for Assignment Problem.