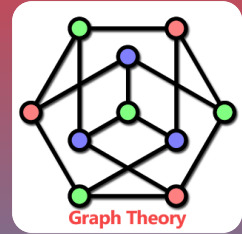


Decision 1

Algorithms

Flow charts, bin packing, bubble sort, quick sort, order of an algorithm, time complex analysis.



Graphs and Networks

Basic concept of a graph and how they are used to represent networks, adjacency matrices, planarity algorithm, walks, cycles, paths

Algorithms on graphs

Minimum spanning trees, Prim's algorithm, Kruskal's algorithm, Dijkstra's shortest path algorithm, Floyd's algorithm.



Route Inspection

Eulerian graphs, route inspection algorithm, networks with more than four nodes



Travelling Salesman

Classical problem, minimum spanning tree-upper bound, minimum spanning tree lower bound, nearest neighbour – upper bound.



Linear Programming

Linear programming problems, graphical methods, locating the optimal point, solutions with integer values.

Simplex Method

Formulating linear programming problems, the simplex method, problems requiring integer solutions.



Two-stage simplex method

The Big-M method.

Critical Path Analysis

Modelling a project, dummy activities, early and late event times, critical activities, float of an activity, Gantt charts, resource histograms, scheduling diagrams.



Revision

Exam questions.

