Roll No. ..... Total Pages : 2

BT-4/M-21 **44154**

DESIGN AND ANALYSIS OF ALGORITHMS

Paper : PC-CS-208A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *five* questions in all, selecting at least *one* question from each unit. All questions carry equal marks.

UNIT–I

1. What do you understand by time and space complexity? What is asymptotic notation? Why it is important? Discuss using suitable example.

2. What is recurrence? Discuss in detail the master method for solving a recurrence.

UNIT–II

3. What is a Travelling Salesman problem? Discuss the greedy algorithm for solving the Travelling Salesman Problem.

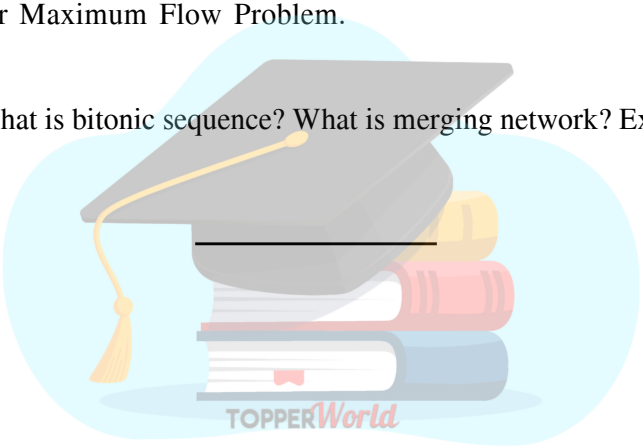
4. What do you understand by height balanced tree? What is a splay tree? Discuss the insertion/deletion operation on splay tree.

UNIT–III

5. What is Minimum Spanning Tree? Discuss the Steps for finding Minimum Spanning Tree using Kruskal's Algorithm.

6. What is a Graph? Discuss the depth first traversal of a graph and its computational complexity. Also discuss the topological sort using depth first traversal.

UNIT–IV

7. What is a flow network? Explain Ford-Fulkerson Algorithm for Maximum Flow Problem.

8. What is bitonic sequence? What is merging network? Explain.