

Roll No. ....

Total Pages : 2

BT-5/D-22

45176

ADVANCED ALGORITHMS

Paper-PE-CS-T307A

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *five* questions in all, by selecting at least *one* question from each unit.

UNIT-I

1. (a) Explain Master Theorem with suitable example. 8
- (b) Discuss various Methods for solving Recurrence. 7
2. What is the need of Algorithm Analysis (Worst, Best & Average case)? Find the space complexity (all case) of any *one* sorting technique. 15

UNIT-II

3. (a) Discuss Knapsack Problem and its solution. 7
- (b) Write and discuss various steps involved in Greedy Algorithm. 8
4. (a) Define Hiring Problem. Discuss its probabilistic analysis. 8
- (b) Write short note on activity selection problem. 7

### UNIT-III

5. (a) Write and discuss the significance of Bellman-Ford Algorithm. 7
- (b) Differentiate Kruskal and Prim Algorithms with example. 8
6. (a) Write and explain All pair shortest path-Floyd Warshall Algorithm. 8
- (b) Differentiate DFS and BFS with suitable example. 7

### UNIT-IV

7. (a) Discuss various steps involved in Rabin-Karp Algorithm. 7
- (b) Write and explain Knuth-Morris-Pratt Algorithm. 8
8. Discuss various steps in String Matching with Finite Automata in detail. 15
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