

Roll No.

Total Pages : 02

BT-5/D-24

45176

ADVANCED ALGORITHMS(E_I)

PE-CS-T-307A

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. (i) Explain Master Theorem with suitable example. 7
(ii) List various binary tree used for algorithms. Explain the working of any *one* with example. 8
2. (i) Find the time complexity (all case) of any *one* sorting technique. 8
(ii) Discuss the role of Pseudo code convention in algorithms. 7

Unit II

3. (i) Define Hiring Problem. Discuss its probabilistic analysis. 8

- (ii) Explain matrix chain multiplication with example. 7
4. (i) Discuss Knapsack problem and its solution. 7
- (ii) Write a short note on activity selection problem. 8

Unit III

5. (i) Write and discuss the significance of Dijkstra's algorithm. 7
- (ii) Differentiate Kruskal and Prim algorithms with example. 8
6. (i) Write and explain All pair shortest path-Floyd Warshall Algorithm. 7
- (ii) Differentiate DFS and BFS with suitable example. 8

Unit IV

7. Discuss the various steps in String matching with finite automata in detail. 15
8. (i) Discuss various steps involved in Naïve string matching algorithm. 7
- (ii) Write and explain Knuth-Morris-Pratt Algorithm. 8