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**