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**