

M.Sc. (DDE) Semester III Examination, 2018

Subject: Computer Science

Paper: MCS-304 (Elective-I: Analysis of Algorithm)

Time: 2 Hours

Full Marks: 45

Attempt any *nine* questions.
All questions carry equal marks.

1. Write a function to perform append operation on a singly linked list. Also write a function to display it. 5
2. Write an algorithm to convert a binary number to its equivalent decimal using Stack. 5
3. Discuss Big-O and θ notation for complexity analysis in brief. 5
4. Briefly discuss the best case time complexity of Quick sort. 5
5. Discuss the BFS algorithm in brief. 5
6. Discuss the working principle of Kruskal's algorithm in brief. 5
7. Discuss the fundamental ideas behind Dijkstra's shortest path algorithm. 5
8. Describe any one convex hull computation algorithm. 5
9. Discuss the advantage and disadvantages of adjacency matrix representation of a graph. 5
10. Briefly discuss an algorithm that uses Dynamic programming principle. 5
11. Discuss any one Greedy algorithm. 5