Dronacharya College of Engineering, Gurgaon

Department of Electronics and Computers Engineering

Subject: Analysis and Design of Algorithms **(CSE-305-F)** **Semester: VIII/ Branch:** ECS

Short Answer Questions

Section A

1. What is an algorithm?
2. What do you mean by Amortized Analysis?
3. What are algorithm design techniques?
4. How is an algorithm's time efficiency measured? Define order of an algorithm
5. What is Big 'Oh' notation?
6. What are the characteristics of an algorithm?
7. Define the divide and conquer method.
8. What is the maximum and minimum problem?
9. What is Master's theorem?

Section B

1. Explain the greedy method.
2. What are the constraints of knapsack problem?
3. What is a minimum cost spanning tree?
4. State single source shortest path algorithm (Dijkstra's algorithm).
5. Specify the algorithms used for constructing Minimum cost spanning tree.
6. Write any two characteristics of Greedy Algorithm?
7. Define principle of optimality
8. What are the features of dynamic programming?

Section C

1. What are the requirements that are needed for performing Backtracking
2. What are the factors that influence the efficiency of the backtracking algorithm?
3. Define Branch-and-Bound method.
4. State 8 – Queens problem.

Section D

1. What are NP- hard and Np-complete problems?
2. What is a class P and NP?
3. Define tractable and intractable problems.
4. When is a problem said to be polynomially reducible?