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Ph. D. (Course Work) EXAMINATION, MAY 2019

CS2001- DATA STRUCTURES AND ALGORITHMS

Time: Three Hours

Max. Marks: 100

Answer ALL Questions

PART – A (10 × 2 = 20 Marks)

1. What do you meant by divide and Conquer technique?
2. Explain Floors and Ceilings with example.
3. List the applications of STACK.
4. Discuss briefly on Rehashing technique.
5. Discuss the complexity of insertion sort.
6. Explain inorder tree traversing with necessary example.
7. Write short note on Minimum Spanning tree.
8. Explain Breadth First Search algorithm.
9. Discuss briefly about backtracking algorithms.
10. Mention the advantages of greedy algorithms.

PART – B (5 × 16 = 80 Marks)

- 11.a. Explain in detail Asymptotic Notations with necessary examples.

(OR)

- b. Explain in detail Maximum subarray problem with necessary examples.

- 12.a. What do you meant by Hash function? Explain different types of Hashing techniques with necessary examples.

(OR)

- b. Explain in detail INSERT, DELETE, SEARCH Operation in Doubly Linked List.

- 13.a. What are Hieght balanced trees? Explain the INSERT & DELETE operation in AVL Trees.

(OR)

- b. Explain in detail about quick sort with necessary exampes. Discuss its complexity.

- 14.a. Explain in detail about Dijkstras Algorithm.

(OR)

- b. Explain in detail about Kruskals Algorithm

- 15.a. Explain in detail about Knapsack Problem

(OR)

- b. Explain in detail about 8 Queens problem.
