**ANNUAL EXAMINATION 2020**

**(Only for Regular Students)**

***Centre No. 135 Centre Name- Disha College, Raipur (C.G.)***

**Class-BCA-II (Old Course) Subject- Data Structure**

**Paper No- BCA 201 Paper III Paper Name- Data Structure**

**Time- 3 hrs. M.M.-50**

**Note: All question carry equal marks.**

**UNIT I**

1. What are different categories of data structures? Explain. Differentiate linear and non linear data structure.

**OR**

. What do you mean by complexity of an algorithm? Explain various notations used to denote complexity.

**UNIT II**

2. Write algorithm for bubble sort. Explain.

**OR**

Explain insertion and deletion operations for a linear array.

**UNIT III**

3. Explain and write algorithm to insert a node into a linked list.

**OR**

What is a circular queue? Write algorithm to insert and delete an element from a circular queue.

**UNIT IV**

4. Explain binary search tree and its advantages. Construct a binary search tree for following elemenrs: 10, 15, 12, 7, 8, 18, 6, 20

**OR**

Explain traversing a binary tree. Write algorithm for preorder traversal of a binary tree.

**UNIT V**

5. Write and explain algorithm to merge two arrays.

**OR**

Arrange following list in ascending order using insertion sort. Give Steps : 77, 44, 11, 55, 22, 33

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