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Total No. of Questions: 09

B.Tech.(3D Animation & Graphics) / (CSE) / (IT)

(Sem.-3)

# **DATA STRUCTURES**

Subject Code: BTCS-304

M.Code: 56594

Date of Examination: 17-01-23

Time: 3 Hrs. Max. Marks: 60

#### **INSTRUCTIONS TO CANDIDATES:**

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

## **SECTION-A**

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## 1. Explain the following:

- a) Overflow
- b) Dangling pointers
- c) Deque
- d) Infix expression
- e) Heaps
- f) In degree in graphs
- g) Arrays
- h) Sparse matrix
- i) Rehashing
- j) Big 'O' notation.

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### **SECTION-B**

- 2. Write a note on Arrays.
- 3. Write an algorithm to insert a node in doubly linked list.
- 4. Differentiate between BFS and DFS in graphs.
- 5. Write an algorithm for binary search.
- 6. Perform bubble and quick sort on given array.

55, 47, 88, 12, 30, 99, 23, 65, 71

### **SECTION-C**

- 7. Create a BST of 15 nodes. Write all 3 traversals.
- 8. What is a heap tree? Write an algorithm for heap sort.
- 9. What do you mean by infix, prefix and postfix expressions? How to evaluate postfix?

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