

Roll No.

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Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (G & W.D / I.T) / BCA (Sem.-3)

DATA STRUCTURES

Subject Code : UGCA-1915

M.Code : 78181

Date of Examination : 19-12-22

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 **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

1. Write briefly :

- a) Write types of Data Structure.
- b) What are advantages of recursion?
- c) Give concept of strings.
- d) What is dynamic memory?
- e) Write any two applications of Stack.
- f) Discuss Circular Queue.
- g) Discuss AVL trees.
- h) What is Binary Search tree?
- i) Explain selection sort.
- j) Write concept of Hash Function.

SECTION-B

2. Discuss the limitations of Arrays. Write the steps to find out largest element of an array.
3. Explain Inorder, Preorder and Postorder Traversal operation.
4. What is Queue? Write an algorithm to insert an element from a simple Queue.
5. What is Doubly Linked List? Write an algorithm to insert and delete a node in Doubly Linked List.
6. Write an algorithm to sort an array of integers in the descending order using quick sort.
7. Illustrate the concept of breadth-first search traversing of graph.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.