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Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (I.T) / BCA (Sem.-3)

DATA STRUCTURES

Subject Code : UGCA1915

M.Code : 78181

Date of Examination : 23-12-2024

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) Flowchart
- b) Array vs Pointers
- c) Complete binary tree
- d) De-queue
- e) Big 'O' Notation
- f) Stack
- g) Out-degree
- h) AVL Tree
- i) Linked List
- j) Recursion.

SECTION-B

2. Differentiate between arrays and linked list.
3. Explain depth first search and breadth first search in graphs.
4. Perform bubble and selection sort on given array :

43, 57, 66, 11, 9, 96, 23, 37, 72, 88

5. How to convert in-fix notation into post-fix notation?
6. What is a Queue? Write algorithm to insert and delete a node in circular queue.
7. What is BST? Explain its traversals with an example.

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.