Roll No. | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 07

B.Sc. (G & WD / IT) / BCA (Sem.–3)

DATA STRUCTURES

Subject Code : UGCA1915

M.Code : 78181

Date of Examination : 23-12-2023

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) Dynamic memory allocation

c) Strings

d) Multiple stack

e) Priority queue

f) Circular linked list

g) AVL tree

h) Graph

i) Quick sort

j) Hashing.

SECTION-B

2. a) What do you mean by data structure? Explain complexity of an algorithm.

   b) What do you mean by an Array? How a multi-dimensional array differs from one dimensional array?

3. Define Stack. What operations are performed on a stack? Write applications of a stack.

4. What is linked list? Discuss the various operations on linked list. How single linked list is different from doubly linked list?

5. What is a binary tree? How it is traversed? How a binary search tree is different from a binary tree?

6. **Write short notes on following :**

   a) Adjacency matrix

   b) Linear search

7. Explain the concept of Hashing and Hashing function. What are various collision resolution techniques?

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.