Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐ Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (IT) / BCA (Sem.–3)
DATA STRUCTURES
Subject Code : UGCA-1915
M.Code : 93333
Date of Examination : 28-01-23

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

SECTION-A

1. **Write briefly :**

   a. List various symbols used in flowchart.

   b. List various operations that can be performed on data structure.

   c. List various library functions used with strings.

   d. Differentiate between array and linked list.

   e. Differentiate between stack and queue.

   f. Explain the concept of priority queue.

   g. How memory is allocated to linked list.

   h. Define hashing.

   i. How can a graph be represented in memory?

   j. Explain different traversing algorithms for binary tree.

SECTION-B

2.   Write the algorithm for selection sort. Explain it with the help of an example.

3.   Write algorithm for breadth first search and explain it with the help of an example.

4.   Define data structure. Explain different types of data structures.

5.   Write algorithm for linear search. Give an example when the element is not found in the list.

6.   Write short note on :

   a.   Doubly linked list

   b.   B Tree

7.   What is a binary tree? Explain basic tree terminologies used for binary tree.

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.