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

Total No. of Questions : 07

B.Sc. (Data Analytic) (Sem.–3)

DATA STRUCTURES

Subject Code : UGCA-1915

M.Code : 92554

Date of Examination : 16-12-22

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) Which data structure is used to perform recursion and why?

b) What is dynamic memory allocation?

c) What are the various applications of stack?

d) What is circular doubly linked list?

e) What is an AVL type?

f) Write some applications of priority-queue.

g) Compare one-way linked list and two way linked list.

h) What is adjacency list?

i) What is time complexity?

j) How can you calculate the address of an element in a linear array?

SECTION-B

2. Write the functions to push and pop elements in a stack.

3. What is hashing? Discuss different hashing strategies.

4. Compare bubble sort and quick sort. Which is better and why?

5. What is single source shortest path? Discuss Dijkstra's single shortest path algorithm with an example.

6. Explain Inorder, Pre-order and Post-order Traversal operation on Binary tree with example.

7. Give the algorithm to insert an element in the middle of an array.

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