

"Do not write anything on question-paper except Roll Number, otherwise it shall be deemed as an act of indulging in unfair means and action shall be taken as per rules."

Roll No.

B.C.A. (II)

1717

Data Struct. & Algor.

B.C.A. Part-II EXAMINATION - 2022

Paper - VIII

**BCA 202 - DATA STRUCTURES AND
ALGORITHMS**

Time Allowed : **Three Hours**

Maximum Marks : **80**

Note : 1. Question No. 1 is Compulsory. Attempt any **FOUR** from the remaining questions.

2. All questions carry equal marks.

1. (a) What is data structure?
- (b) What is STACK?
- (c) What is abstract data type?

- (d) What is D-Queue?
 - (e) Define Priority Queue.
 - (f) What is BS-Tree?
 - (g) What is hashing?
 - (h) What is Graph?
2. What is STACK? Explain PUSH and POP methods/algorithm.
3. (a) What do you mean by abstract data type? Explain types of Queue.
- (b) Write algorithm to insert a node in Linked-List.
4. (a) Write an algorithm to create Circular Linked List.
- (b) Write algorithm to create doubly linked-list.
5. (a) What is Tree? Explain Tree Terminology with suitable example.
- (b) Create a binary tree for given traversal orders
- Inorder - DBFEGACIHJ
- Preorder - ABDEFGCHIJ

6. (a) Define tree traversal? Explain all types of tree traversal.
(b) Implement STACK with help of Linked-List.
7. What is Graph? Explain algorithm of DFS and BFS.
8. Write short notes on the following:
 - (a) Priority Queue
 - (b) Hashing Methods
 - (c) Bubble Sort
 - (d) Binary Search

--X--