

Roll No.

DD-2864

B. C. A. (Part II) EXAMINATION, 2020

Paper Third

DATA STRUCTURE

Time : Three Hours

Maximum Marks : 50

Note : Attempt any *two* parts (each 5 marks) from each question. All questions carry equal marks.

1. (a) Define the term "Data Structure". Write its types.
(b) Define algorithms and procedures. What are the features of algorithms ?
(c) Explain different operations of data structure and also write those data structures in which they can be performed.
2. (a) Write an algorithm for bubble sorting.
(b) Explain the concept of Arrays, Records and Pointers.
(c) Write and explain an algorithm to search a list of numbers using linear search methods.
3. (a) What is a Stack ? Explain various operations performed using stack with examples.

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- (b) What is linked list ? Explain the different types of linked list with diagram.
 - (c) Write algorithm to insert and delete element from a queue.
4. (a) Define the following :
- (i) Depth of a tree
 - (ii) Height of a tree
- (b) Create Binary tree for the following list :
- 10, 15, 12, 7, 8, 18, 6, 20
- (c) Define tree. Write the algorithm for inorder traversal of binary tree.
5. (a) Write an algorithm to sort a list of elements using merge sort technique.
- (b) Write algorithm for selection sort method.
- (c) What do you mean by Searching ? Explain sequential search with the help of example.