

DD–2864

B. C. A. (Part II) EXAMINATION, 2021

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.

Unit—I

1. (a) Briefly describe the notions of the following :
 - (i) The complexity of an algorithm
 - (ii) The space time trade off of algorithm
- (b) Define Data structure. What are the different types of data structure ?
- (c) Define following terms :
 - (i) Linear Data Structure
 - (ii) Non Linear Data structure

Unit—II

2. (a) Write algorithm for Binary search.
- (b) What are the type of searching techniques.
- (c) What do you mean by record ? How is it different from array ?

Unit—III

3. (a) What do you mean by queue ?
- (b) Write the steps of traversing a linked list.
- (c) Describe the various observations on a stack.

Unit—IV

4. (a) Define the following terms :
 - (i) Length of tree
 - (ii) Leaf node
- (b) What is Binary tree ? Construct a binary tree whose nodes are in two orders as under :
In order : B, C, E, D, F, A, G, H
Pre-order : A, B, C, D, E, F, G, H
- (c) With reference of Binary search tree explain the following terms :
 - (i) Level
 - (ii) Depth
 - (iii) Edge
 - (iv) Terminal node

Unit—V

5. (a) What do you mean by merging ? Explain.
(b) What is selection sort ? Explain.
(c) Explain insertion sort.

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