Annual Examination, 2023

B.C.A. Part III

B.C.A.–305

Paper V

(Data Structure)

Time : Three Hours]   [MAXIMUM MARKS : 80

Note : *Attempt any **two** parts from each unit. All questions carry equal marks.*

Unit-I

1. (a) Explain the various operation in data structure with example.

   (b) Explain the complexity of algorithms and time space trade off.

   (c) Explain the Omega notation (Ω) and Theta notation (θ)

Unit-II

2. (a) What is array? How it is differ from pointer? Explain with suitable example.

   (b) Write a binary search algorithm. Example with suitable example.

   (c) What do you understand by static array and dynamic array? Explain with suitable example.
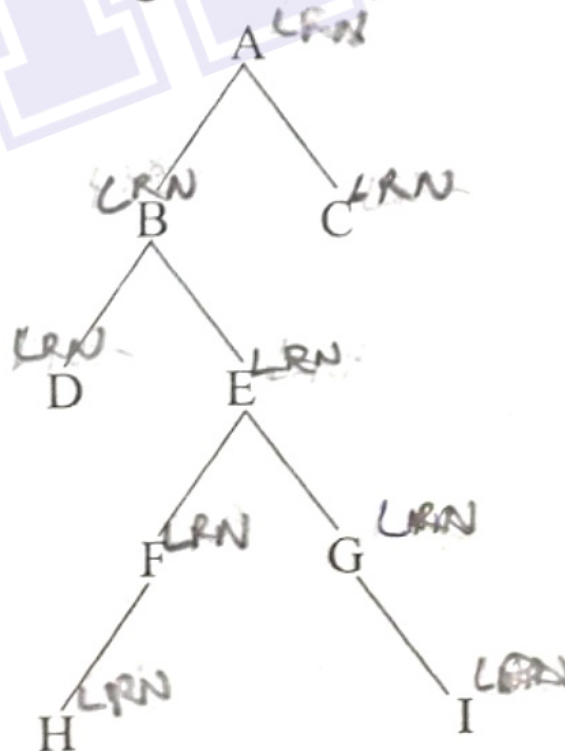
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Unit-III

3. (a) Write an algorithms to insert an element in link test. Explain with suitable example.

   (b) What is priority queue? How it is differ from deques? Explain with suitable example.

   (c) Write an algorithms for push and pop in stack. Explain with suitable example.

Unit-IV

4. (a) Explain the representation of binary tree in memory with suitable example.

   (b) Write a algorithms for delete an element in binary search tree.

   (c) Find the inorder, preorder and post order traversal of given binary tree.

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Unit-V

5. (a) Write an algorithms to binary search to perform merge sort. Explain with suitable example,

   (b) Write an algorithms for binary search. Explain with suitable example.

   (c) Write an algorithms for insertion sort. Explain with suitable example.

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