CDAC – Delhi

Algorithm and Data Structure Using Java.

Practical Exam

Date : 19-12-2021   **Full Marks : 40**

Note :

- Documentation of Algorithm and Flowchart is required
- Program must adhere to the algorithm and flowchart
- Program is using only the required number of variables /conditions/ loops/ pointers etc and is optimal
- The program produces desired output for a given input
- The program handles all valid and invalid inputs
- The program has meaningful variable/function names
- The program is commented properly (At least 20% of the code should be commented)

Write programs for any two of the following, Question 1 is compulsory.

1. Create a Single Linked List and perform the following operations

    a. Add a node at end position.

    b. Delete a node from front.

    c. Search an element

    d. Traverse the Linked List.

2. Create a circular Linked List and traverse the elements.

3. Write a Program for Binary Search

4. Write a program to implement Bubble Sort on an array of Integers.

5. Find factorial of a number using recursion

6. Write a program to implement a binary search tree and perform the following operations on it:

   - Create()

   - Tree traversals - Breadth First Search and Postorder()