Data Structures and Algorithms

Time: 90 Minutes | Sessional 2 – Dec 28 | Total Marks: 50

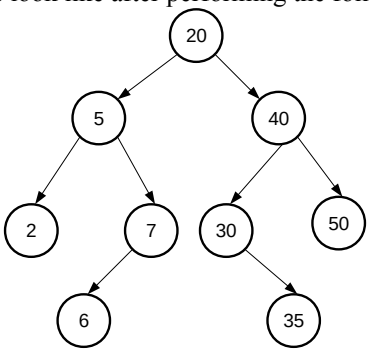
Q1: Write a function (client code) which takes two stack objects A and B as parameters. The function should copy the elements of stack A into stack B. At the end of the function, both the stack objects should contain the same elements. {10}

Q2: Write a function (client code) which takes two queue objects A and B as parameters. The function should copy every second element of queue A into queue B. Queue A should not be empty at the end of the function. {10}

Q3: Write a recursive function to create a copy of a binary search tree (BST). `void CopyTree(Node *src, Node *&dest)` {10}

Q4: Create a BST by inserting the following values in the given order: 50, 20, 70, 40, 60, 55, 30, 65, 25, 62, 35 {5}

Q5: Given the following BST, what would the tree look like after performing the following operations? {10}



a. Insert(32)
b. Insert(4)
c. Delete(20)
d. Delete(5)
e. Delete(40)

Q6: Given the BST in Q5 (before performing the operations): {5}

a. Write the output of visiting the tree using in-order traversal
a. Write the output of visiting the tree using pre-order traversal
b. Write the output of visiting the tree using post-order traversal