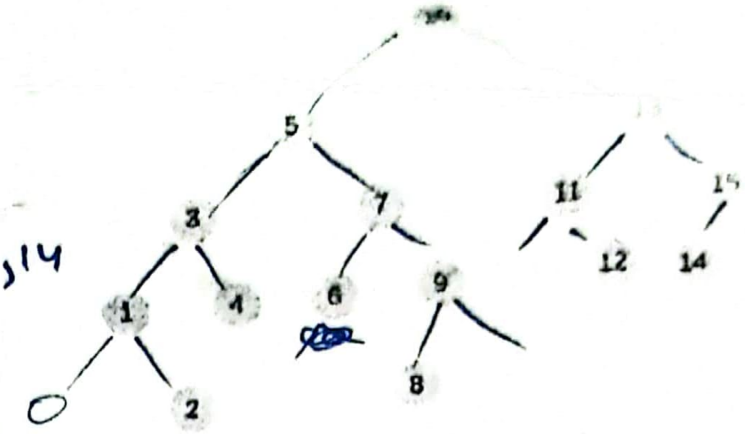
FAST - NUCES
Quiz : 4
Max Marks 10

CS2001 - Data Structure
Fall 2023
Duration 25 minutes

Note: Attempt all questions on question paper in given solution space.
Roll#. 22I-5033 Section BS

Question 01: Use the following BST.



Write Postorder traversal of the tree.

1,2,4,3,6,8,9,7,5,11,12,14,15,13,10

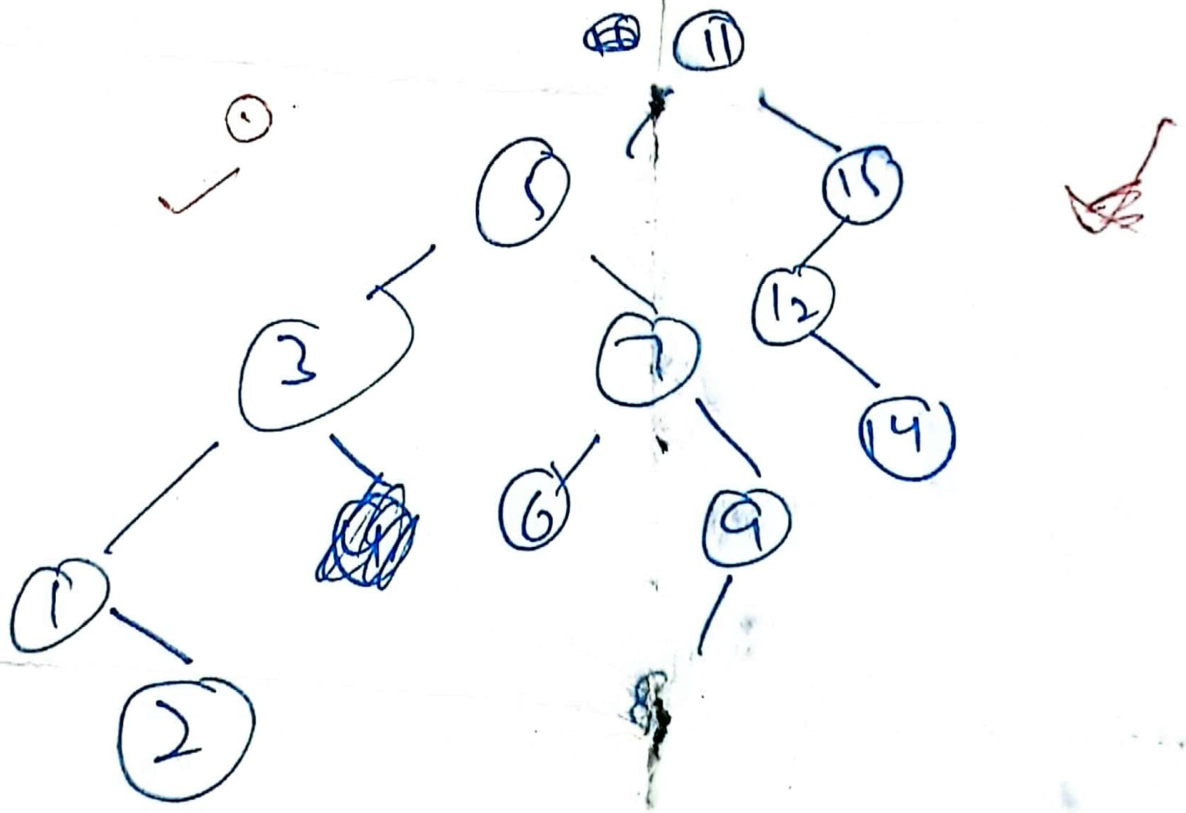
Write PreOrder traversal of the tree.

10,1,2,4,5,7,6,9,8,13,11,12,15,14

Write InOrder traversal of the tree.

1,2,3,4,5,7,9,8,10,11,12,13,15,14

Show how the tree will look after the deletion of 10,13,4.



Question 02:

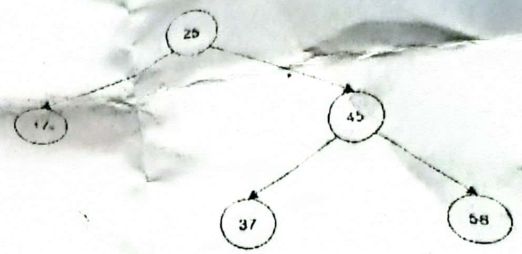
a. What is the maximum height of any AVL-tree with 8 nodes ? 4

b. Minimum number of nodes required to construct AVL tree of height 5 = ? 10

Question 03:

For the AVL Tree below:

1. Insert the element 29 and 75.
2. After inserting, find the height for each of the nodes in the tree.
3. Identify the lowest point of imbalance: what is its balance factor?



Based on the lowest point and its balance factor, and the balance factor of its child node, what is the type or rotation that needs to be used to rebalance the tree? Rotation Type: RL, RR

Draw the final AVL tree.