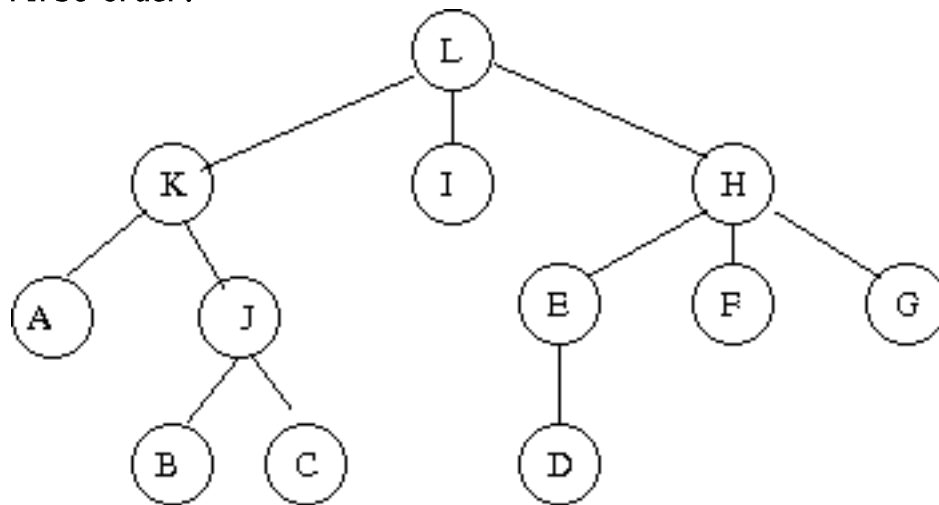Question 1

List the nodes of the tree below in INORDER, PREORDER and POSTORDER and breadth-first order?


Question 2 (Read the Note and try this)

1. In the binary search tree below, carry out the following operations in sequence and rearrange the TREE. Add 6, add 15, delete 23, delete 9. Show the Final TREE

2. **Check whether this TREE is AVL (Heighted Balanced Tree)?**

Note:
1. What is Binary Search Tree : LEFT Child value is always less than ROOT Node and Right Child Value is always Greater than the ROOT Node.
2. Values are sorted in Binary Search Tree
3. Moe than one option is available
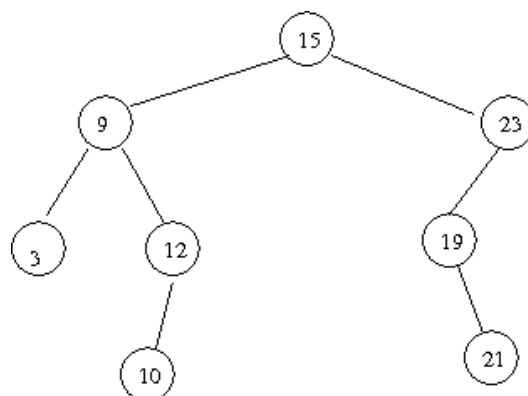
Question 3

T is a complete binary tree of height 3. What is the largest number of nodes and smallest number of Nodes in the Tree T? Draw the Tree.

And Identify all the Internal Nodes and the leaf nodes.

Note:
Tree Height : Total number of edges that lies on the **longest path from any leaf node to a particular node.**
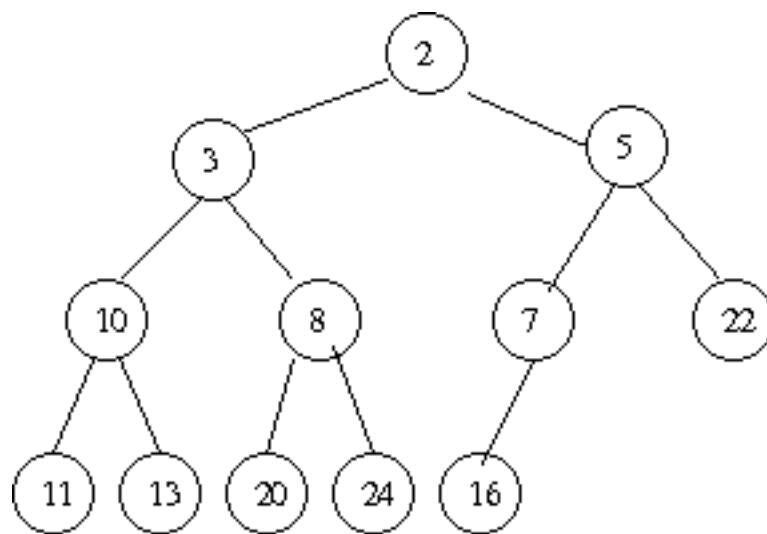
Question 4

In a preorder traversal of a binary search tree, the first item printed out is always the smallest one. If true, explain why; if false, give an example where it is false.

Note: Preorder (Root, Left, Right)

Question 5

Use the **Breadth First or Level Order Traversal for the TREE and** show how it is stored in an array? Show the final array & the TREE after of executing del(8) and add(4) operations ?

Question 6 : Post traversal sequences for the binary search tree is shown below. Draw the Binary Search Tree for this sequence.
POSTORDER Traversal : 10,30,20,150,300,200,100

Questions 7: Consider the numbers 7 , 5 , 1 , 8 , 3 , 6 , 0 , 9 , 4 , 2 are inserted into an empty binary search tree. Create a binary search Tree. What is the inorder traversal sequence of the resultant tree?

    1. 7 , 5 , 1 , 0 , 3 , 2 , 4 , 6 , 8 , 9

    2. 0 , 2 , 4 , 3 , 1 , 6 , 5 , 9 , 8 , 7

    3. 0 , 1 , 2 , 3 , 4 , 5 , 6 , 7 , 8 , 9

    4. 9 , 8 , 6 , 4 , 2 , 3 , 0 , 1 , 5 , 7