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Quiz Data structure

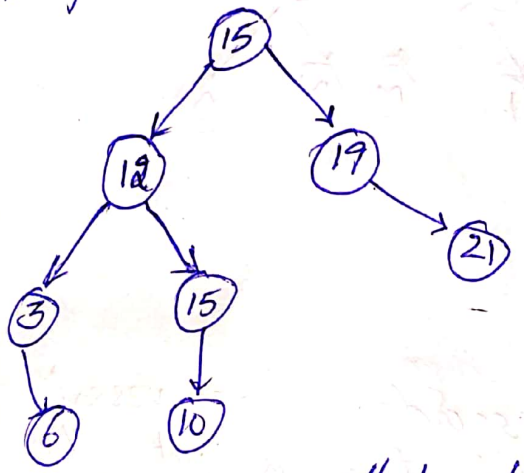
Q1) In Order: A K B J C L D E H G F I

Pre Order: L K A J B C I H E D F G

Post Order: A B C J K I D E F G H L

Breadth first Order: L K I H A J E F G B C D

Q2) The final tree will be



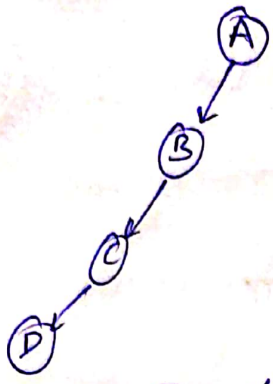
We can say that above tree is not AVL tree

Q3) Height = 3 = n

The smallest no of nodes = $2^{n-1} = 2^{3-1} = 4$

Largest no of nodes = $2^{n+1} - 1 = 2^{4} - 1 = 15$

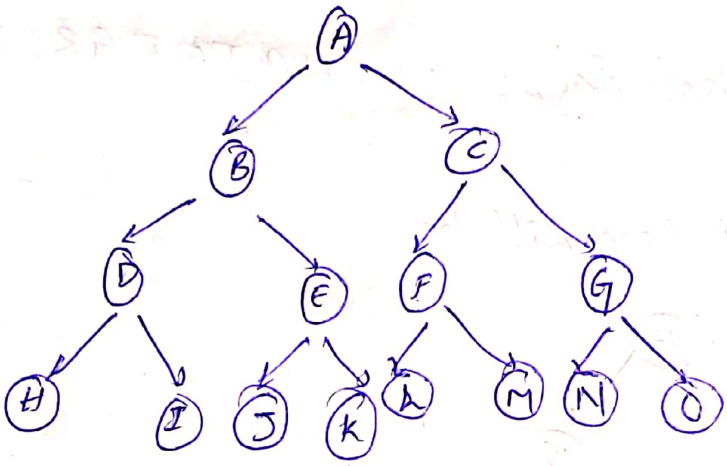
Tree will smallest no of nodes = 4



In this leaf node = D

Internal nodes → A, B, C

Tree with largest no of nodes



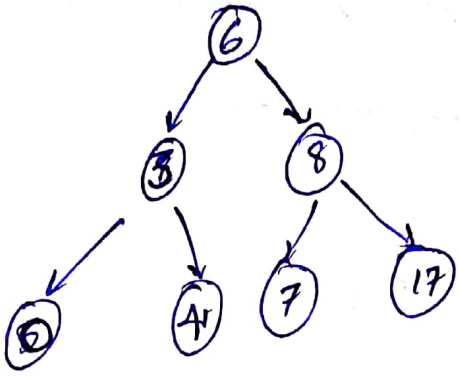
Q4) It is false

In any preOrder transversal, the first printed item is not the smallest one.

According to this in preOrder we first write root node, left & then right node

And in Binary search tree, the left child should be less than the root and right child

should be greater than the root node.



Here preOrder - 6 3 5 4 8 7 17

In the above example 3 is smaller than the root node '6' but it is not in first

Q5) The breadth first traversal of given number is

2	3	5	10	8	7	22	11	13	20	24	15

In the given tree the deletion and addition of elements is not possible since it is not a binary search tree.

Q6) The Post Order traversal sequence for binary search tree is given as

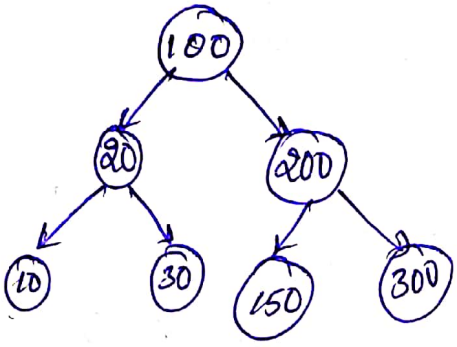
10, 30, 20, 150, 300, 200, 100

For Post Order

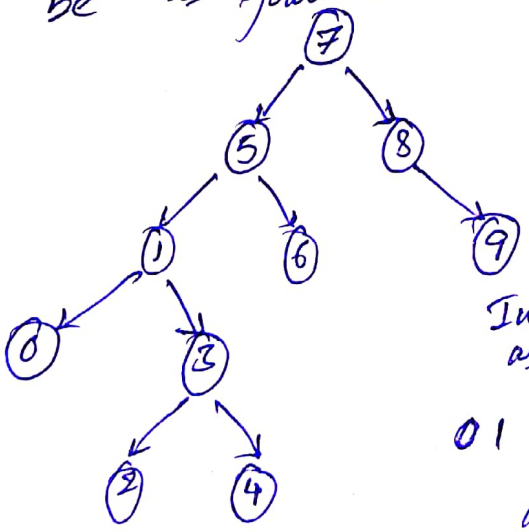
we follow the Sequence

1) Left node
2) Right Node
3) Root Node.

The final Binary tree can be drawn as



Q7) If the given numbers are inserted in Order the binary search tree will be as follows.



In Order traversal as follow

0 1 2 3 4 5 6 7 8 9

option ⟶ C