Data Structures QUIZ

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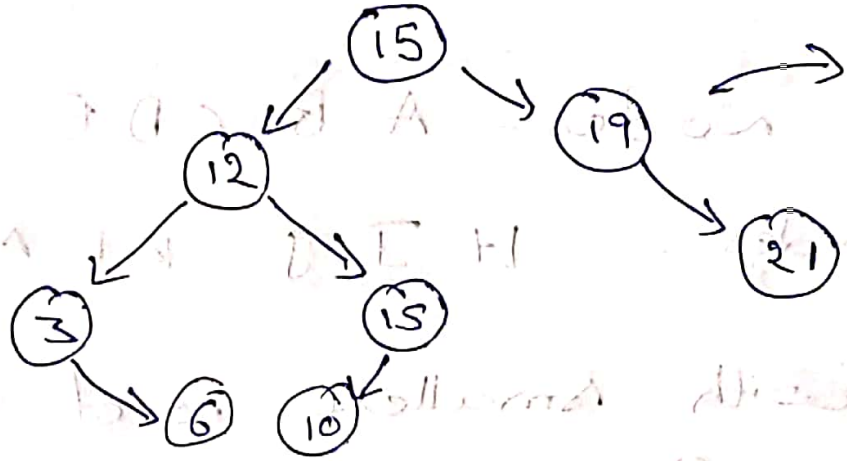
1) Inorder :- A K B J C L D E H G F I
Preorder :- L K A J B C I H E D F G
POSTORDER :- A B C J K I D E F G H L
Breadth First order:-
L K I H A J E F G B C D

2) The final tree is



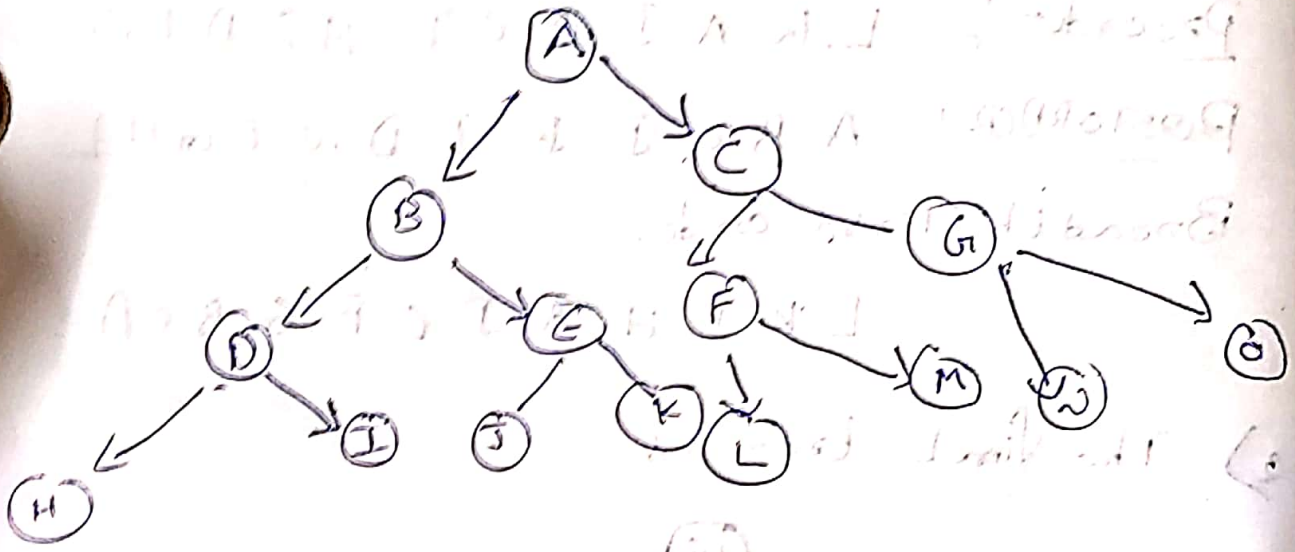
→ not an AVL Tree:

2) Height of tree is 3.

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

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

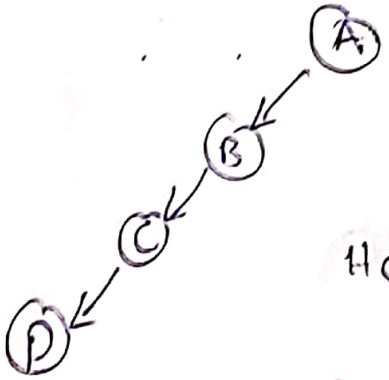
Tree with Largest number of nodes is



Internal Nodes - A B C D E F G

Leaf Nodes - H I J K L M N O

Tree with smallest no of nodes 4



Here,

Internal Nodes - A B C

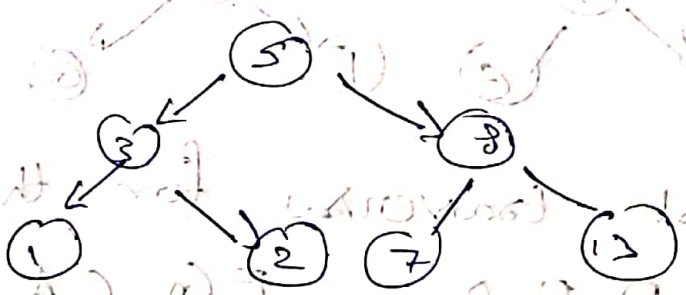
Leaf Nodes - D

4) False

In pre-order of a tree, the first is not smallest

According to rule, in pre-order we first put root-node then left child and then right child. In blw them left child is smallest and it is not at first place.

ex:-



Here, preorder becomes 5 3 1 2 8 7 13

Here 2 is smallest in first cycle but not at first place.

3) The breath first traversal of given is

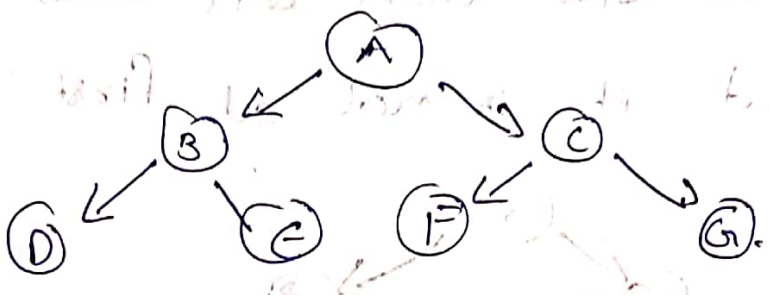
2 3 5 10 8 7 22 11 13 20 24 16

2	3	5	10	8	7	22	11	13	20	24	16	null

Deletion and addition operation is not possible in this tree because this is not binary search tree. this operation only exist for b.s.t.

6) The post order traversal sequence for Binary search tree is given as 10, 30, 20, 150, 300, 200, 200

Let us Consider the Binary search tree as:



The post-traversal for this tree will be D E B F G C A

Compare the nodes to given values

A → 100
B → 20
C → 200
D = 20
E = 30
F = 150
G → 300