Data Structure Quiz

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SECTION : B

1) Inorder transversal :-

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

Pre-order transversal :-

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

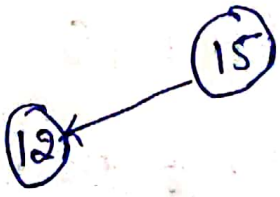
Post-order transversal :-

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

Breadth first Order transversal :-

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

2) After deletion and addition the final trees is



∴ The tree is not an AVL tree.

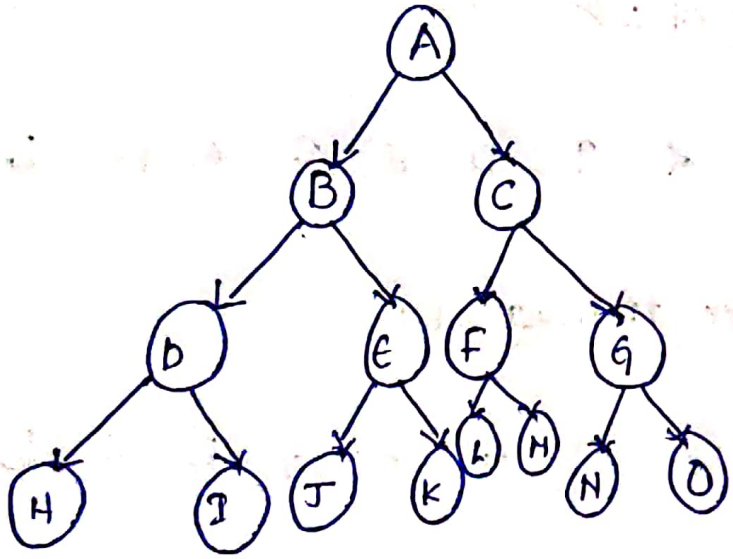
3) Height of the tree is 3.

→ The largest no. of nodes = $2^{h+1} - 1$

$= 2^4 - 1 = 15$

→ The smallest no. of nodes = $2^h = 2^3 = 8$

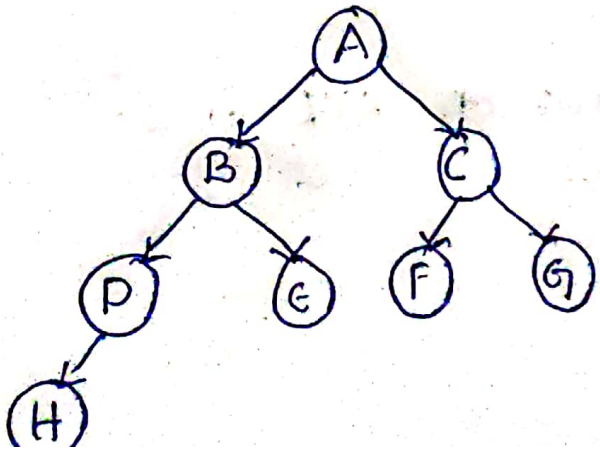
→ The tree with largest no. of nodes is 15



Internal nodes = A, B, C, D, E, F, G

Leaf nodes = H, I, J, K, L, M, N, O

→ The tree with smallest no. of nodes 8

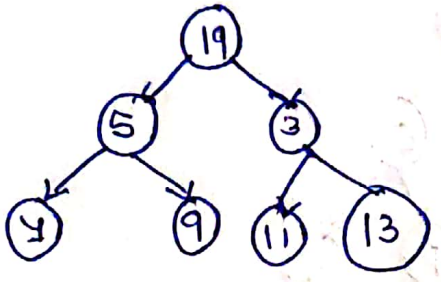


Internal nodes → A, B, C, D

Leaf nodes → E, F, G, H

4) false, An pre order transversal of tree the first printed node is not the smallest. According to rule in pre-order we first put root node next left child and right child. An the tree left child is the smallest and it is not placed at first

Ex:-



the pre order is 19 5 4 9 3 11 13

∴ 5 is the in first cycle but it is not placed at first place.

6) The breath first transversal of given no is

2, 3, 5, 10, 8, 4, 22, 11, 13, 20, 24, 16

2	3	5	10	8	4	22	11	13	20	24	16	NULL	NULL

The deletion and Ansertion is not possible in this tree because it is not a binary search tree.:

And deletion and Ansertion will exist only for a binary search tree.

6) The postorder traversal sequence for binary search tree is given as

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

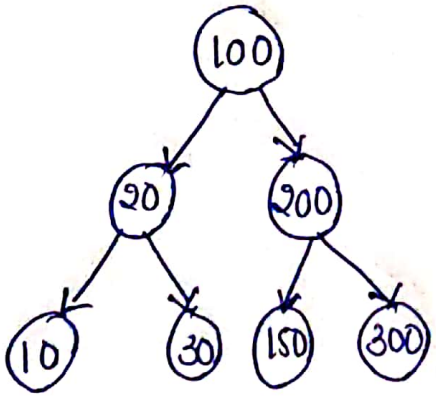
for post order :- We follow the sequence

→ Left node

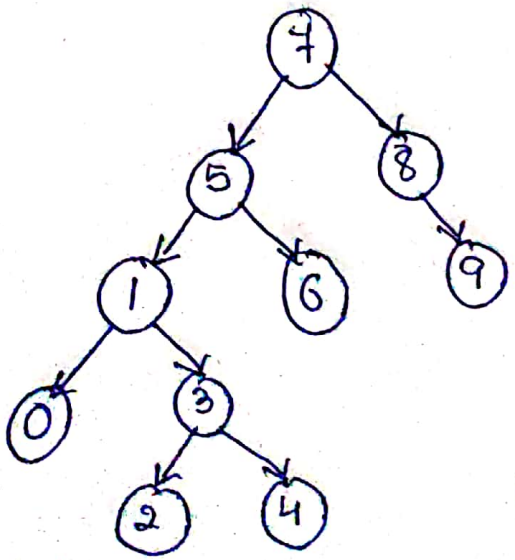
→ Right node

→ Root node

∴ The final binary tree can be drawn as



7) If the given numbers are inserted in order, the binary search tree will be as follows.



∴ The inorder traversal will be

0 1 2 3 4 5 6 7 8 9

i.e., ⇒ option - 3