

Data Structure Quiz

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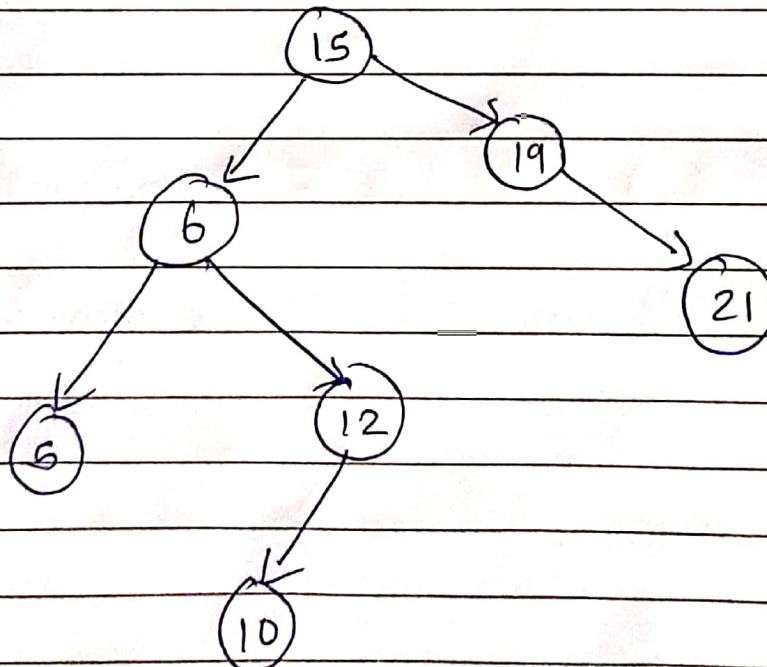
Class : 1st year (2nd Sem), Section :- B

Roll No. :- 19BEC040

4Ans = False, The first node printed out in a preorder traversal is the root, which is greater than the nodes in the left subtree.

1Ans = The given traversal does not exist because we cannot do these traversal for a generic tree. They are only meant for the binary tree.

2Ans = The final tree after addition & deletion is



The tree is not a AVL Tree.

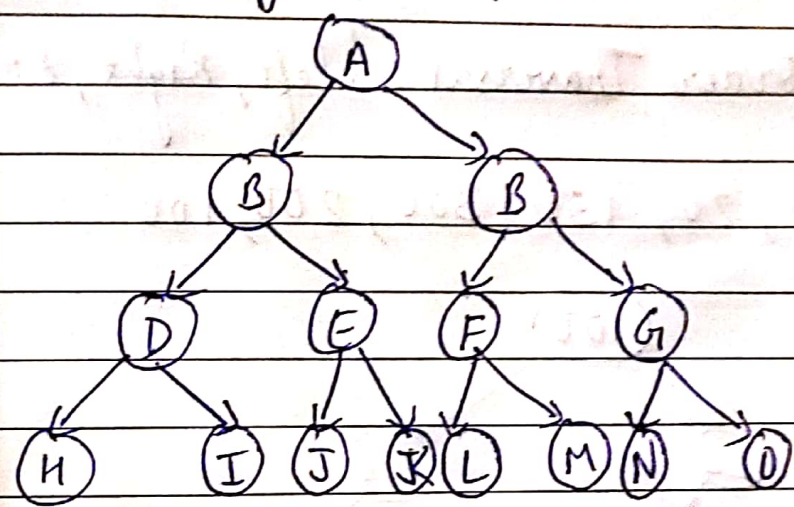
Ans =

Height of the tree is 3

$$\begin{aligned}\text{The largest no. of nodes} &= 2^{n+1} - 1 \\ &= 2^4 - 1 \\ &= 15\end{aligned}$$

$$\begin{aligned}\text{The smallest no. of nodes} &= 2^n \\ &= 2^3 \\ &= 8\end{aligned}$$

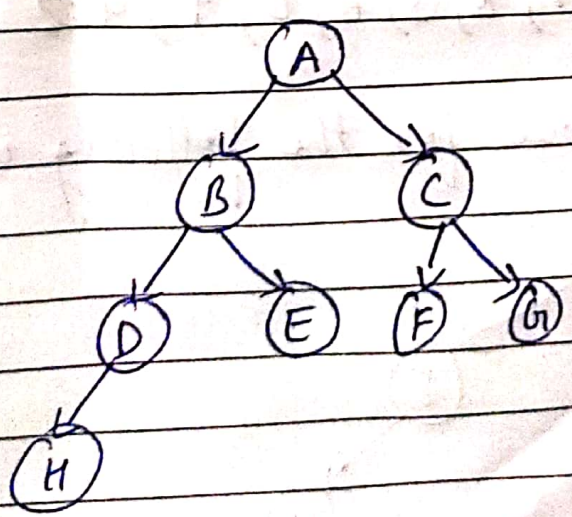
Tree with largest no. of nodes is



Internal Nodes :- A, B, C, D, E, F, G, H

Leaf Nodes :- H, I, J, K, L, M, N, O

Tree with smallest no. of nodes 8



Internal Node = A, B, C, D

Leaf Node = E, F, G, H

5Ans = The Breadth first Traversal is :

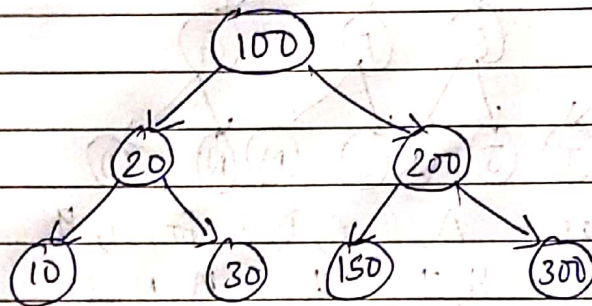
2, 3, 5, 10, 8, 7, 22, 11, 13, 20, 24, 16

2	3	5	10	8	7	22	11	13	20	24	16	Null	Null	Null
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→ And, the deletion & addition operation is not possible in this tree because this is not a binary search tree. These operations only exist for the binary search trees.

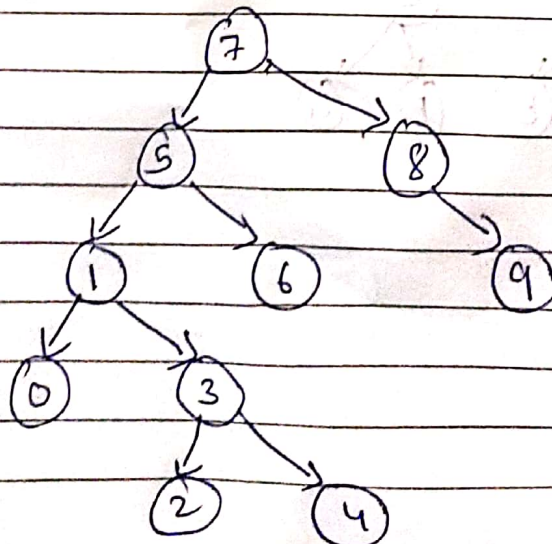
6Ans = The Post Order Traversal: (Left, Right, Root)

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



7Ans = The Numbers - 7, 5, 1, 8, 3, 6, 0, 9, 4, 2

The Binary Search tree for the following is



The inorder traversal of the following tree will be

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