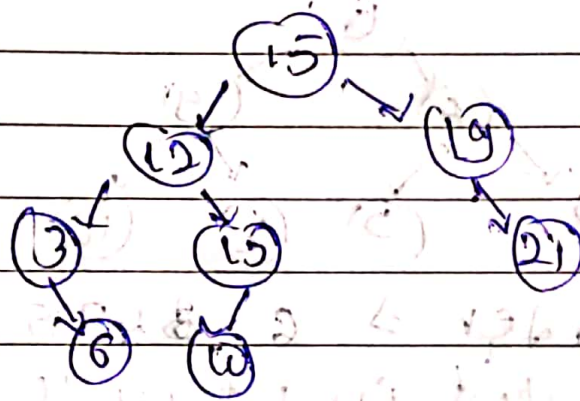


Sahana V A
19BEC037

- 1) Inorder - A B C L D E F H I
Preorder - L K A J B C I H E D F C
Post order - A B C J K I D E F C H L
Breadth 1st order - L K I H A J E F C B C D

2) Final tree will be

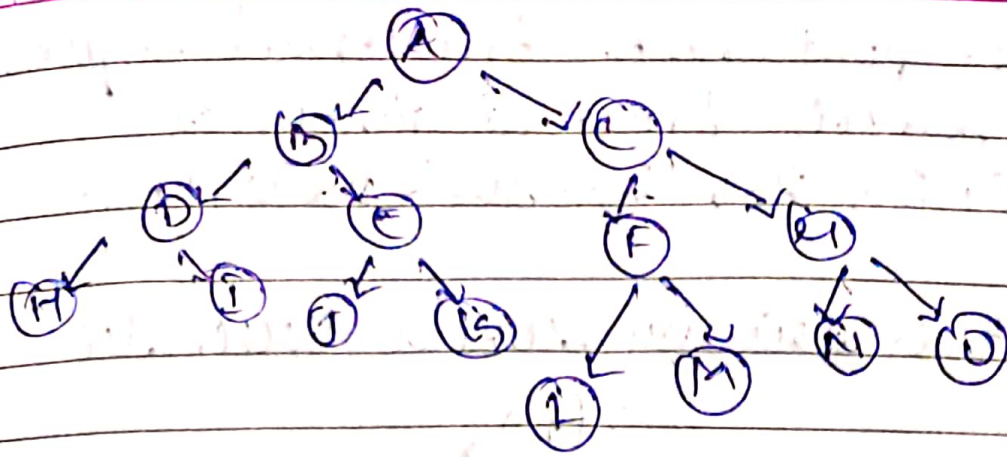


So, this is not an AVL tree

3) Height of the tree is 3

The largest no. of nodes $\rightarrow 2^{n+1} - 1 = 2^4 - 1 = 15$
Smallest no. of nodes $2^{n-1} = 2^{3-1} = 4$

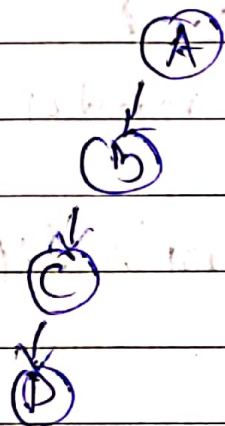
Tree with larger no. of nodes is 15



internal nodes $\rightarrow A, B, C, D, E, F, G$

leaf nodes $\rightarrow H, I, J, K, L, M, N, O$

Tree with smallest no. of nodes



internal nodes $\rightarrow A, B, C$

leaf nodes $\rightarrow D$

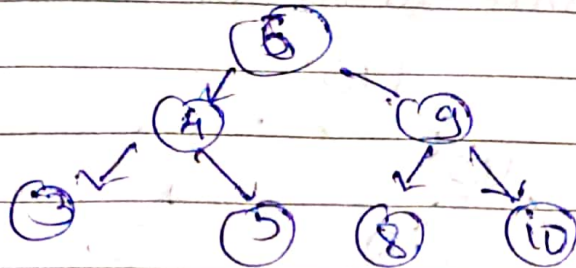
4) It's False

As pre-order traversal of tree

the 1st printed item is not smallest one

According to rule, in pre-order we visit root node then left child then right child. In which then left child is smallest & it's not at 1st place

Ex,



here, Pre-order \Rightarrow 6 4 3 5 9 8 10
It is smallest in 1st cycle but not at 1st place.

5) The level order traversal of given no. 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 | null

Deletion & addition operation is not possible in this tree because this is not binary search tree. This operations only exists for BST's.

c) The post order traversal sequence for binary search tree is given as
10, 30, 20, 150, 300, 200, 100

Let the binary search tree be



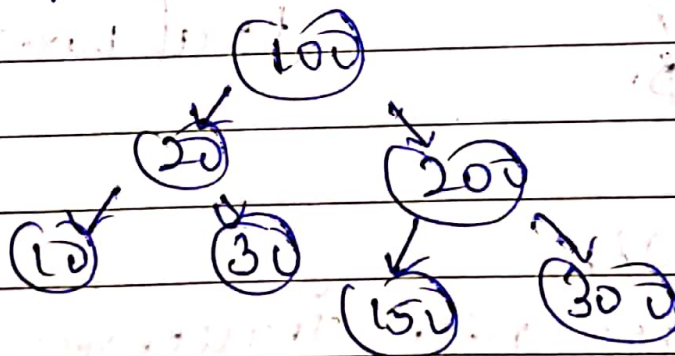
Post-traversal for this will be

D E B F G C A

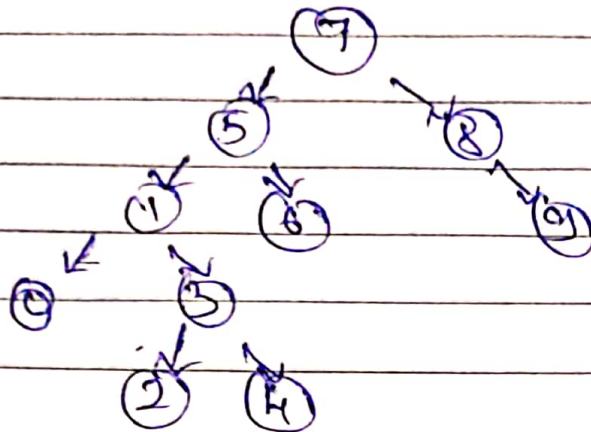
On comparing the nodes

A

The final tree will be



7) If the no.s 7, 5, 1, 8, 3, 6, 0, 9, 4, 2 are inserted in order, the BST will be



Inorder traversal of the above tree will be
0, 1, 2, 3, 4, 5, 6, 7, 8, 9

Ans: option 3/✓