Name: M.Anupama

Roll No: 19BECO26

QUIZ [DATA STRUCTURES].
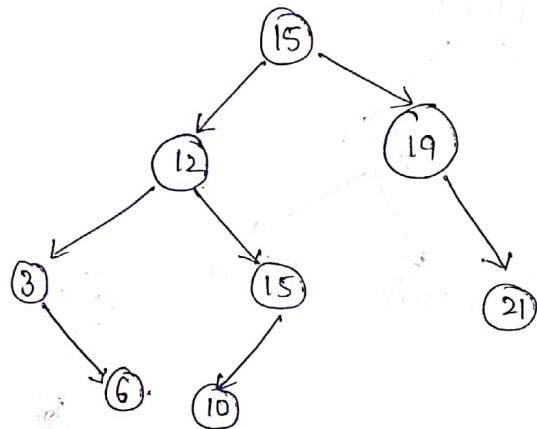
Q1) Inorder: A K B J C L D E H G F I

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.
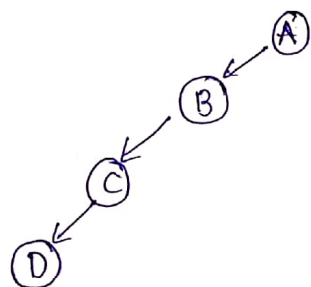
Q2: The final tree will be,

we can say that above tree is not an ~~e~~ AVL tree.

Q3) Height = 3

The smallest No. of Nodes = $2^{n-1} = 2^{3-1} = 4$
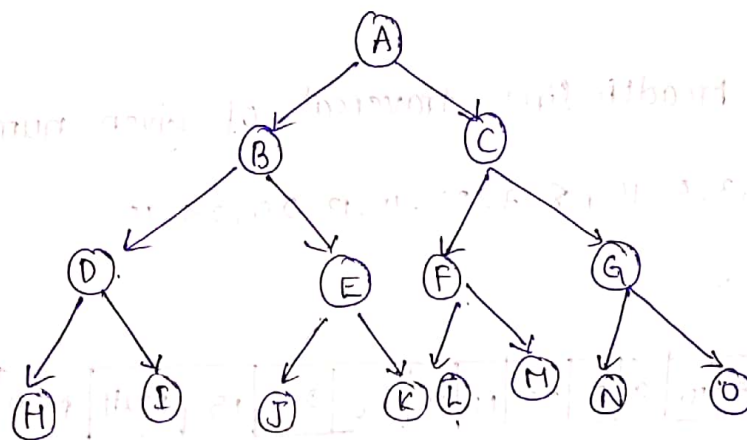
largest no. of Nodes = $2^{n+1} - 1 = 2^4 - 1 = 15$

→ Tree with smallest No. of nodes ie, 4

In this, lead Nodes → D

Internal Nodes → A, B, C.

Tree with largest No. of Nodes i.e., 15.

Internal Nodes → A, B, C, D, E, F, G.

leaf Nodes → H, I, J, K, L, M, N, O.
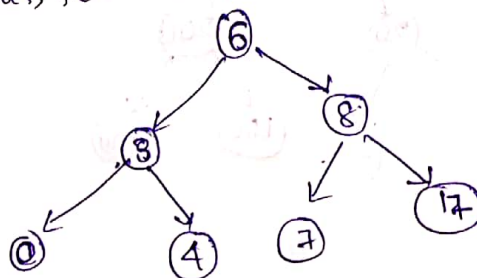
Q4) (It is _false_)

Reason:

In any pre order traversal, the first printed item is not the smallest one.

According to this, in pre-order we first write root-Node, left node & then right node.

And in Binary search tree, the left child should be less than the root & right child should be greater than the root node.

~~So thus, for~~

so thus, for example,

Here,

pre order becomes 6 30 4 8 7 17

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

Q5) · The breadth-first traversal of given number is

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

Array :-

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

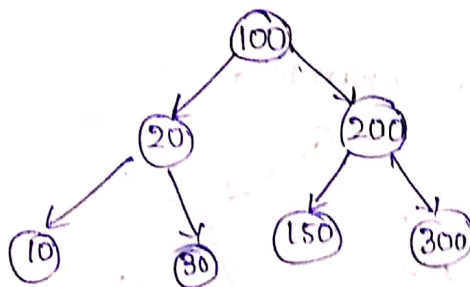In the given tree, the deletion & addition of elements does not possible since it is not a binary search tree.

Q6) The post order traversal sequence for binary search tree is given as
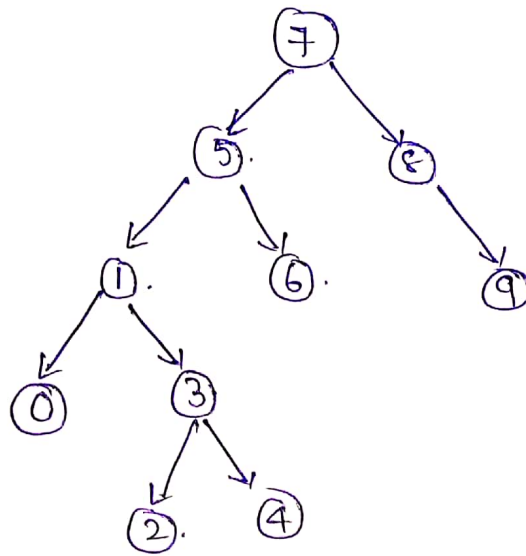
10, 30, 20, 150, 300, 200, 100.

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.

The inorder transversal will be as follow:-

0 1 2 3 4 5 6 7 8 9

⇒ Option - C