1. The balance factor for an AVL tree is either
(A) 0,1 or –1 (B) –2,–1 or 0
(C) 0,1 or 2 (D) All the above
Ans: (A)

2. In _____, the difference between the height of the left sub tree and height of the right
tree, for each node, is almost one.
(A) Binary search tree (B) AVL - tree
(C) Complete tree (D) Threaded binary tree
Ans: (B)

3. AVL trees have a faster _____
A. Insertion
B. Deletion
C. Updation
D. Retrival

Right Answer: D

4. An AVL Tree is constructed by inserting the elements in the following order 5,4,2,3,7,6 the elements which are in the leaf node are *

- 2,7,6
- 5,7
- 3,6
- 5,3,7

5. Which of the following is/are true
a)AVL Tree was the first self-balancing BST to be invented
b)The insertion of an element in an AVL tree takes O(log n) time in average case and O(nlogn) in worst case

c)The insertion of an element in an AVL tree takes O(log n) time in both average and worst case
d)The insertion of an element in AVL tree takes O(nlog n) time in both average and worst case *

- Only a is correct
- Only d is correct
- both a and b are correct
- both a and c are correct

6. The following insertions are made to an initially empty AVL Tree : 3,2,1,4,7,5,6 then the root of the right subtree of the AVL Tree is *

- 7
- 6
- 4
- 2

7. The maximum number of nodes with height h in an AVL Tree is given by (here N(h) represents the number of nodes in AVL tree with height h) *

- N(h)=N(h-1)+N(h-1)+1

- N(h)=N(h-1)+N(h-2)+1
- N(h)=N(h-1)+N(h-3)+1
- Cannot be determined

8..What is the approximate height of an AVL tree having 30 nodes *

- 8
- 10
- 7
- 6

9. The following steps were followed during the creation of particular AVL Tree, then what is the balance factor of the root node after the process -elements are inserted in the order 8,6,15,3,19,29 -The element 19 is removed -Then the element 6 is removed *

- 1
- -1

- 0
- 2

10. An AVL Tree is constructed by insertion of the following elements in the given order 10,7,8,5,3,4 then how many double rotations and single rotations were involved in the creation of this tree *

- 1,1
- 2,1
- 1,2
- No rotations were involved

11.Which of the following are true for an AVL Tree
a)All AVL Trees are Binary search trees(BST) but all BST's are not AVL Trees
b)All BST are AVL trees but all AVL Trees are not BST's
c)The minimum number of nodes in an AVL Tree of height h is N(h)=N(h-1)+N(h-2)+1
d)The relation h=O(log n) where h=height and n=number of nodes in an AVL tree is true *

- a and c are correct
- b and c are correct

- a and d are correct

- all a,c and d are correct

12.The balance factor of a node A was 0 and a node was inserted to the left of the node A then *

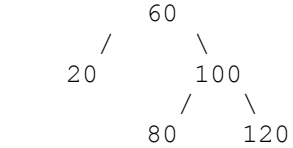
- then it is required to balance Node A

- then it is required to balance Parent of node A

- then it is required to balance Right child of A

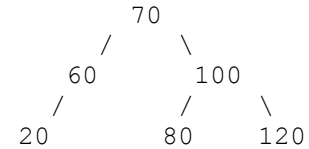
- Balancing may or may not be required for A

13
Consider the following AVL tree.

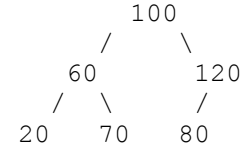


Which of the following is updated AVL tree after insertion of 70

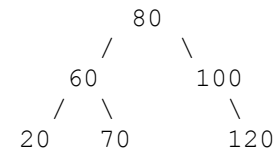
A



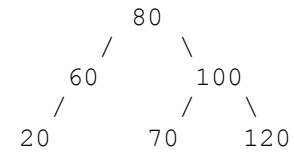
B



C



D



A
B
C
D

A
B
C
D