### 24 Lecture - CS301

### **Important Mcqs**

1. What is the time complexity of deleting a node in an AVL tree?

a) O(n)b) O(log n)

a) Single left rotationb) Single right rotationc) Double left rotationd) Double right rotation

Answer: b) Single right rotation

	c) O(h) d) O(h log n)  Answer: c) O(h)
2.	Which case is checked for rebalancing the AVL tree after a node is deleted?  a) Left-Left  b) Left-Right c) Right-Right d) Right-Left  Answer: d) Right-Left
3.	In an AVL tree, what is the maximum number of rotations needed to rebalance the tree after deleting a node?  a) 1 b) 2 c) 3 d) 4 Answer: b) 2
4.	Which of the following statements is true for the AVL tree?  a) AVL tree is a binary search tree b) AVL tree is a self-balancing binary search tree c) AVL tree is not a binary search tree d) AVL tree is a balanced binary search tree Answer: b) AVL tree is a self-balancing binary search tree
5.	What is the height of an AVL tree after deleting a node?  a) Remains the same b) Decreases by 1 c) Increases by 1 d) Cannot be determined Answer: a) Remains the same
6.	Which of the following rotations is performed when deleting a node in the Right-Right case?

# 7. Which of the following rotations is performed when deleting a node in the Left-Right case?

- a) Single left rotation
- b) Single right rotation
- c) Double left rotation
- d) Double right rotation

Answer: d) Double right rotation

#### 8. Which of the following is a disadvantage of using AVL trees?

- a) Faster insertion and deletion operations
- b) Slow search operation
- c) More memory space required
- d) Cannot be used to implement balanced search trees

Answer: c) More memory space required

#### 9. Which of the following is an advantage of using AVL trees?

- a) Lower time complexity for all operations
- b) Smaller tree height compared to other self-balancing trees
- c) Can handle unbalanced trees efficiently
- d) No need for tree balancing operations

Answer: b) Smaller tree height compared to other self-balancing trees

## 10. In which of the following cases is no rotation needed when deleting a node in an AVL tree?

- a) Left-Left case
- b) Left-Right case
- c) Right-Right case
- d) Right-Left case

Answer: c) Right-Right case