20 Lecture - CS301

Important Mcqs

1. **What is AVL Tree?**
   a) Binary Tree
   b) Self-balancing Binary Search Tree
   c) Hash Tree
   d) None of the above

Answer: b) Self-balancing Binary Search Tree

2. **In AVL Tree, what is the maximum difference between the height of the left and right subtrees?**
   a) 1
   b) 2
   c) 3
   d) 4

Answer: a) 1

3. **What is the time complexity of search operation in AVL Tree?**
   a) O(log n)
   b) O(n)
   c) O(n log n)
   d) O(1)

Answer: a) O(log n)

4. **In AVL Tree, what operation is performed to balance the tree?**
   a) Rotation
   b) Inversion
   c) Deletion
   d) None of the above

Answer: a) Rotation

5. **What is the worst-case time complexity of insertion operation in AVL Tree?**
   a) O(log n)
   b) O(n)
   c) O(n log n)
   d) O(1)

Answer: a) O(log n)

6. **What is the height of an AVL Tree with n nodes in the worst-case scenario?**
   a) log(n)

b) log(n) + 1
c) 2log(n)
d) 2log(n) + 1

Answer: b) log(n) + 1

7. **Which of the following statements is true about AVL Tree?**
   a) AVL Tree is a balanced binary search tree
   b) AVL Tree is an unbalanced binary search tree
   c) AVL Tree is a type of heap data structure
   d) AVL Tree is a type of graph data structure

Answer: a) AVL Tree is a balanced binary search tree

8. **What is the time complexity of deletion operation in AVL Tree?**
   a) O(log n)
   b) O(n)
   c) O(n log n)
   d) O(1)

Answer: a) O(log n)

9. **Which of the following is not a balancing rule in AVL Tree?**
   a) Right-Right (RR)
   b) Left-Right (LR)
   c) Left-Left (LL)
   d) Right-Left (RL)

Answer: d) Right-Left (RL)

10. **Can AVL Tree have duplicate keys?**
    a) Yes
    b) No

Answer: b) No