# **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