

22 Lecture - CS301

Important Mcqs

1. Which of the following is not a type of rotation in a binary search tree?

- A. Left rotation
- B. Right rotation
- C. Upward rotation
- D. Double rotation

Answer: C

2. When is a single left rotation used in a binary search tree?

- A. When the imbalance occurs in the immediate left child
- B. When the imbalance occurs in the immediate right child
- C. When the imbalance occurs in the grandchild of the left child
- D. When the imbalance occurs in the grandchild of the right child

Answer: A

3. Which of the following is a case of double rotation in a binary search tree?

- A. Left-Left case
- B. Left-Right case
- C. Right-Left case
- D. Right-Right case

Answer: B

4. In a left-right double rotation, what is the first step performed?

- A. A single left rotation on the right child
- B. A single right rotation on the left child
- C. A double right rotation on the left child
- D. A double left rotation on the right child

Answer: B

5. Which of the following is not a benefit of rotations in a binary search tree?

- A. Maintaining balance
- B. Ensuring efficient search operations
- C. Reducing the height of the tree
- D. Increasing the height of the tree

Answer: D

6. What is the maximum number of rotations required to balance a node in a binary search tree?

- A. 1
- B. 2
- C. 3
- D. 4

Answer: B

7. **When is a single right rotation used in a binary search tree?**
- A. When the imbalance occurs in the immediate left child
 - B. When the imbalance occurs in the immediate right child
 - C. When the imbalance occurs in the grandchild of the left child
 - D. When the imbalance occurs in the grandchild of the right child

Answer: B

8. **Which of the following is a case of single rotation in a binary search tree?**
- A. Left-Left case
 - B. Left-Right case
 - C. Right-Left case
 - D. Right-Right case

Answer: A

9. **In a left-left single rotation, what is the new root of the subtree?**
- A. The left child of the original root
 - B. The right child of the original root
 - C. The parent of the original root
 - D. The original root itself

Answer: A

10. **Which of the following is a disadvantage of using rotations in a binary search tree?**
- A. Increased tree height
 - B. Reduced search efficiency
 - C. Increased complexity
 - D. None of the above

Answer: D