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