# 12 Lecture - CS301

## Important Mcqs

1. **What is the height of a binary tree with only one node?**
   a) 0
   b) 1
   c) 2
   d) Undefined

Answer: a) 0

2. **Which traversal method visits the nodes in the order left subtree, root, right subtree?**
   a) Pre-order traversal
   b) In-order traversal
   c) Post-order traversal
   d) Level-order traversal

Answer: b) In-order traversal

3. **Which traversal method visits the nodes in the order root, left subtree, right subtree?**
   a) Pre-order traversal
   b) In-order traversal
   c) Post-order traversal
   d) Level-order traversal

Answer: a) Pre-order traversal

4. **What is the time complexity of searching for a node in a Binary Tree?**
   a) O(1)
   b) O(log n)
   c) O(n)
   d) It depends on the implementation

Answer: c) O(n)

5. **What is the maximum number of nodes at level k in a Binary Tree?**
   a) 2^k
   b) k^2
   c) k+1
   d) None of the above

Answer: a) 2^k

6. **Which of the following is a way to delete a node in a Binary Tree?**
   a) Deleting the node and its children
   b) Replacing the node with its left child

c) Replacing the node with its right child
d) All of the above

Answer: d) All of the above

7. **What is the time complexity of finding the height of a Binary Tree?**
   a) O(1)
   b) O(log n)
   c) O(n)
   d) It depends on the implementation

Answer: c) O(n)

8. **What is the maximum number of nodes in a Binary Tree with height h?**
   a) 2^h
   b) h^2
   c) h+1
   d) None of the above

Answer: a) 2^h - 1

9. **Which of the following is a way to insert a node in a Binary Tree?**
   a) As the left child of a leaf node
   b) As the right child of a leaf node
   c) As the left child of a non-leaf node
   d) All of the above

Answer: d) All of the above

10. **Which of the following is an advantage of using a Binary Tree over a linked list?**
    a) Binary Tree can be searched faster than a linked list
    b) Binary Tree can be sorted faster than a linked list
    c) Binary Tree can store data in a hierarchical structure
    d) All of the above

Answer: d) All of the above