

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