

27 Lecture - CS301

Important Mcqs

1. **Which of the following statements is true about a binary tree?**

- A. Each node has exactly two children
- B. Each node has at most two children
- C. Each node has at least two children
- D. Each node has exactly one child

Answer: B

2. **In a binary tree, a node is said to be a leaf node if:**

- A. It has no children
- B. It has exactly one child
- C. It has at least one child
- D. It has two children

Answer: A

3. **A binary tree is said to be a complete binary tree if:**

- A. All the nodes in the tree have the same value
- B. Each node has at most two children
- C. Each level of the tree is completely filled
- D. The tree is balanced

Answer: C

4. **Which of the following traversal methods visits the left subtree, then the root, and finally the right subtree?**

- A. Preorder
- B. Inorder
- C. Postorder
- D. Level order

Answer: B

5. **A binary tree is said to be balanced if:**

- A. All the nodes have the same value
- B. Each node has at most two children
- C. The height of the left and right subtrees of any node differ by at most 1
- D. The tree is complete

Answer: C

6. **In a binary tree, the maximum number of nodes at level k is:**

- A. 2^k

- B. k^2
- C. $2k$
- D. $2^{(k-1)}$

Answer: A

7. The number of edges in a full binary tree with n nodes is:

- A. $n-1$
- B. n
- C. $2n-1$
- D. $2n$

Answer: C

8. Which of the following statements is true about a binary search tree?

- A. Each node has at most two children
- B. The left subtree of a node contains only nodes with values less than the node's value
- C. The right subtree of a node contains only nodes with values greater than the node's value
- D. All of the above

Answer: D

9. A binary tree in which every non-leaf node has non-empty left and right subtrees is called a:

- A. Full binary tree
- B. Complete binary tree
- C. Balanced binary tree
- D. None of the above

Answer: A

10. In a binary tree, the height is defined as:

- A. The number of nodes in the tree
- B. The number of edges from the root to the farthest leaf node
- C. The number of levels in the tree
- D. The number of subtrees in the tree

Answer: B