# 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<sup>k</sup>

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