3 Lecture - CS301

Important Mcqs

1. **In a linked list, each node contains:**
   a. A value and a pointer to the previous node
   b. A value and a pointer to the next node
   c. A key and a value
   d. A key and a pointer to the next node
   Answer: b

2. **The first node in a linked list is called the:**
   a. Head
   b. Tail
   c. Root
   d. Leaf
   Answer: a

3. **In computer memory, each node in a linked list is typically represented as:**
   a. A block of memory that contains the value and a pointer to the previous node
   b. A block of memory that contains the value and a pointer to the next node
   c. A hash table that contains the key and the value
   d. An array that contains the key and a pointer to the next node
   Answer: b

4. **What is the time complexity of inserting a node at the beginning of a linked list?**
   a. O(1)
   b. O(n)
   c. O(log n)
   d. O(n log n)
   Answer: a

5. **What is the time complexity of inserting a node at the end of a linked list?**
   a. O(1)
   b. O(n)
   c. O(log n)
   d. O(n log n)
   Answer: b

6. **Deleting a node from a linked list requires updating the:**
   a. Previous node's pointer to the next node
   b. Next node's pointer to the previous node
   c. Current node's value to NULL
   d. None of the above
   Answer: a

7. **Traversing a linked list means:**
   a. Deleting a node from the list

b. Inserting a node into the list
c. Moving through the list from the head to the tail
d. Sorting the list in ascending order
Answer: c

8. **Which of the following is a disadvantage of linked lists compared to arrays?**
a. Linked lists allow for efficient insertion and deletion of nodes
b. Linked lists use memory flexibly
c. Linked lists can grow dynamically
d. Linked lists have slow access times for specific nodes
Answer: d

9. **Which of the following operations can be performed in constant time on a linked list?**
a. Finding the maximum value in the list
b. Inserting a node at the end of the list
c. Removing the head node from the list
d. Sorting the list in descending order
Answer: c

10. **What is the space complexity of a linked list?**
a. O(n)
b. O(log n)
c. O(1)
d. O(n log n)
Answer: a