

3 Lecture - CS301

Important Mcqs

- In a linked list, each node contains:**
 - A value and a pointer to the previous node
 - A value and a pointer to the next node
 - A key and a value
 - A key and a pointer to the next node**Answer: b**
- The first node in a linked list is called the:**
 - Head
 - Tail
 - Root
 - Leaf**Answer: a**
- In computer memory, each node in a linked list is typically represented as:**
 - A block of memory that contains the value and a pointer to the previous node
 - A block of memory that contains the value and a pointer to the next node
 - A hash table that contains the key and the value
 - An array that contains the key and a pointer to the next node**Answer: b**
- What is the time complexity of inserting a node at the beginning of a linked list?**
 - $O(1)$
 - $O(n)$
 - $O(\log n)$
 - $O(n \log n)$**Answer: a**
- What is the time complexity of inserting a node at the end of a linked list?**
 - $O(1)$
 - $O(n)$
 - $O(\log n)$
 - $O(n \log n)$**Answer: b**
- Deleting a node from a linked list requires updating the:**
 - Previous node's pointer to the next node
 - Next node's pointer to the previous node
 - Current node's value to NULL
 - None of the above**Answer: a**
- Traversing a linked list means:**
 - 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