

10 Lecture - CS301

Important Mcqs

1. **What is a queue data structure?**

- a) A data structure where the last element added is the first one to be removed.
- b) A data structure where the first element added is the first one to be removed.
- c) A data structure where the middle element is always removed first.
- d) None of the above.

Answer: b) A data structure where the first element added is the first one to be removed.

2. **Which operation adds an element to the queue?**

- a) Dequeue
- b) Enqueue
- c) Peek
- d) None of the above.

Answer: b) Enqueue

3. **Which operation removes an element from the queue?**

- a) Dequeue
- b) Enqueue
- c) Peek
- d) None of the above.

Answer: a) Dequeue

4. **Which operation returns the element at the front of the queue without removing it?**

- a) Dequeue
- b) Enqueue
- c) Peek
- d) None of the above.

Answer: c) Peek

5. **Which data structure is commonly used to implement a queue?**

- a) Array
- b) Linked list
- c) Both a and b
- d) None of the above.

Answer: c) Both a and b

6. **Which of the following is not a real-world application of queues?**

- a) Waiting lines at banks
- b) Amusement parks

- c) Airports
- d) None of the above.

Answer: d) None of the above.

7. **What is the time complexity of the enqueue operation in a queue implemented using an array?**
- a) $O(1)$
 - b) $O(n)$
 - c) $O(\log n)$
 - d) None of the above.

Answer: a) $O(1)$

8. **What is the time complexity of the dequeue operation in a queue implemented using a linked list?**
- a) $O(1)$
 - b) $O(n)$
 - c) $O(\log n)$
 - d) None of the above.

Answer: a) $O(1)$

9. **Which of the following is a disadvantage of using an array to implement a queue?**
- a) Insertion and deletion are faster than in a linked list.
 - b) The size of the array must be fixed.
 - c) It is more efficient in terms of memory usage.
 - d) None of the above.

Answer: b) The size of the array must be fixed.

10. **Which of the following is a disadvantage of using a linked list to implement a queue?**
- a) Insertion and deletion are slower than in an array.
 - b) The size of the linked list must be fixed.
 - c) It is less efficient in terms of memory usage.
 - d) None of the above.

Answer: a) Insertion and deletion are slower than in an array.