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.