## 33 Lecture - CS301

### **Important Mcqs**

1. What is a priority queue using a heap?

D) Queue Answer: A

A) Heap sizeB) Heap capacityC) Heap orderD) Heap property

Answer: D

top?

	<ul> <li>A) A queue where elements are arranged in the order they are inserted</li> <li>B) A queue where elements are arranged in ascending order</li> <li>C) A queue where elements are arranged based on their priority</li> <li>D) A queue where elements are arranged in descending order</li> <li>Answer: C</li> </ul>
2.	Which operation(s) can be performed on a priority queue?  A) Insertion B) Deletion C) Retrieval of the highest priority element D) All of the above  Answer: D
3.	What is the time complexity of insertion in a priority queue using a heap?  A) O(1) B) O(log n) C) O(n) D) O(n^2) Answer: B
4.	What is the time complexity of retrieval of the highest priority element in a priority queue using a heap? A) $O(1)$ B) $O(\log n)$ C) $O(n)$ D) $O(n^2)$ Answer: A
5.	Which data structure is used to implement a priority queue using a heap?  A) Array  B) Linked list  C) Stack

6. What is the property of a heap that ensures the highest priority element is always at the

#### 7. Which type of heap is used to implement a priority queue?

- A) Max heap
- B) Min heap
- C) Both A and B
- D) Neither A nor B

Answer: A

#### 8. What happens when a new element is inserted into a priority queue using a heap?

- A) The element is added to the end of the heap
- B) The element is added to the beginning of the heap
- C) The element is added to the correct position based on its priority
- D) None of the above

Answer: C

# 9. What happens when the highest priority element is removed from a priority queue using a heap?

- A) The last element is removed
- B) The first element is removed
- C) The element in the correct position is removed
- D) None of the above

**Answer: C** 

#### 10. Which of the following statements is true about a priority queue using a heap?

- A) The elements are arranged in ascending order
- B) The time complexity of insertion is O(n)
- C) The highest priority element is always at the top
- D) All elements have the same priority

Answer: C