# 30 Lecture - CS301

## **Important Mcqs**

1.	In a min-heap, the root node always contains the element.  a) Maximum b) Minimum c) Median d) Random
Answer: b) Minimum	
2.	The worst-case time complexity for inserting an element in a min-heap is:  a) O(1) b) O(log n) c) O(n) d) O(n log n)
Answer: b) O(log n)	
3.	Which property of a min-heap ensures that the root node always contains the minimum element?  a) Complete binary tree property b) Heap order property c) Both (a) and (b) d) None of the above
Answer: b) Heap order property	
	To insert an element in a min-heap, we always add it to the:  a) Leftmost position at the deepest level b) Rightmost position at the deepest level c) Leftmost position at the second deepest level d) Rightmost position at the second deepest level
Answer: a) Leftmost position at the deepest level	
5.	If we insert the elements 8, 5, 3, 9, 1, 7, 6, 2 in a min-heap, what will be the root node?  a) 1  b) 2  c) 3  d) 5
Aı	nswer: a) 1

6. The height of a min-heap with n elements is:

a) log n

- b) n/2
- c) n-1
- d) n

## Answer: a) log n

- 7. Which of the following operations is NOT supported by a min-heap?
  - a) Insertion
  - b) Deletion
  - c) Search
  - d) All of the above

## Answer: c) Search

- 8. To maintain the heap order property after inserting an element, we perform:
  - a) Up-heap bubbling
  - b) Down-heap bubbling
  - c) Both (a) and (b)
  - d) None of the above

### Answer: a) Up-heap bubbling

- 9. If we insert an element in a min-heap, the new element will always be a:
  - a) Leaf node
  - b) Parent node
  - c) Child node
  - d) Sibling node

### Answer: a) Leaf node

- 10. The time complexity of building a min-heap from an array of n elements is:
  - a) O(1)
  - b) O(n)
  - c) O(n log n)
  - d) O(n^2)

### Answer: b) O(n)