32 Lecture - CS301

Important Mcqs

- 1. What is the purpose of the percolateDown method in a heap data structure?
 - A. To insert an element into the heap.
 - B. To maintain the heap property after removing the root element.
 - C. To sort the elements in the heap.
 - D. None of the above.

Answer: B

2. What is the time complexity of the percolateDown method?

A. O(n) B. O(log n) C. O(n log n) D. O(1)

Answer: B

- 3. Which element is swapped with the root element in the percolateDown method?
 - A. The smallest child element
 - B. The largest child element
 - C. The first element in the heap
 - D. None of the above

Answer: B

4. What happens if the root element has no children in the percolateDown method?

- A. The root element is removed from the heap.
- B. The heap is left unchanged.
- C. An error is thrown.
- D. None of the above.

Answer: B

- 5. Is the percolateDown method used in HeapSort algorithm?
 - A. Yes
 - B. No

Answer: A

6. Which type of heap data structure is percolateDown method used for?

- A. Max heap
- B. Min heap
- C. Both
- D. Neither

Answer: C

- 7. Does the percolateDown method modify the size of the heap data structure?
 - A. Yes
 - B. No

Answer: A

- 8. How many elements are swapped at most in the percolateDown method?
 - A. One
 - B. Two
 - C. Three
 - D. Four

Answer: B

- 9. Is the percolateDown method a recursive algorithm?
 - A. Yes
 - B. No

Answer: A

10. What is the worst-case time complexity of the percolateDown method?

- A. O(n)
- B. O(log n)
- C. O(n log n)
- D. O(1)

Answer: B