39 Lecture - CS301

Important Mcqs

1. **What is the time complexity of binary search algorithm?**
   a) O(1)
   b) O(n)
   c) O(log n)
   d) O(n^2)
   Answer: c) O(log n)

2. **In which type of array is binary search the most efficient?**
   a) Sorted array
   b) Unsorted array
   c) Randomly sorted array
   d) None of the above
   Answer: a) Sorted array

3. **Binary search algorithm can be used for:**
   a) Array
   b) Linked list
   c) Both A and B
   d) None of the above
   Answer: a) Array

4. **Binary search algorithm can be applied to:**
   a) Characters
   b) Integers
   c) Floats
   d) All of the above
   Answer: d) All of the above

5. **Which of the following is not a step in binary search algorithm?**
   a) Check if the middle element is equal to the target element
   b) If the target element is greater than the middle element, search the left half of the array
   c) If the target element is less than the middle element, search the right half of the array
   d) Return the index of the target element
   Answer: d) Return the index of the target element

6. **What is the worst-case time complexity of binary search algorithm?**
   a) O(1)
   b) O(n)
   c) O(log n)
   d) O(n^2)
   Answer: c) O(log n)

7. **Which of the following is not a requirement for binary search algorithm to work?**
   a) The array must be sorted

b) The array must be in ascending order
c) The array must be in descending order
d) The array must be homogeneous
Answer: c) The array must be in descending order

8. **What is the middle element in an array of size 10?**
   a) 4
   b) 5
   c) 9
   d) 10
   Answer: b) 5

9. **How many elements are left in the array after the first iteration of binary search on an array of size 16?**
   a) 8
   b) 4
   c) 2
   d) 1
   Answer: a) 8

10. **What is the index of the target element in the array [1, 3, 5, 7, 9] when using binary search to find 7?**
    a) 2
    b) 3
    c) 4
    d) 5
    Answer: b) 3