

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