

# 44 Lecture - CS301

## Important Mcqs

1. What is the time complexity of selection sort?

- a)  $O(n)$
- b)  $O(n \log n)$
- c)  $O(n^2)$
- d)  $O(2^n)$

Answer: c)  $O(n^2)$

2. Which of the following is true about selection sort?

- a) It is an in-place sorting algorithm
- b) It is a stable sorting algorithm
- c) It is a divide-and-conquer sorting algorithm
- d) It is a comparison-based sorting algorithm

Answer: d) It is a comparison-based sorting algorithm

3. Which of the following is the best case time complexity of selection sort?

- a)  $O(n)$
- b)  $O(n \log n)$
- c)  $O(n^2)$
- d)  $O(2^n)$

Answer: c)  $O(n^2)$

4. Which of the following data structures is commonly used to implement selection sort?

- a) Array
- b) Linked List
- c) Stack
- d) Queue

Answer: a) Array

5. Which of the following is the space complexity of selection sort?

- a)  $O(n)$
- b)  $O(\log n)$
- c)  $O(1)$
- d)  $O(n \log n)$

Answer: c)  $O(1)$

6. Which of the following is the first step in selection sort?

- a) Compare the first two elements
- b) Find the smallest element in the array
- c) Compare the last two elements
- d) Swap the first two elements

Answer: b) Find the smallest element in the array

7. Which of the following is the worst case time complexity of selection sort?

- a)  $O(n)$

- b)  $O(n \log n)$
- c)  $O(n^2)$
- d)  $O(2^n)$

Answer: c)  $O(n^2)$

8. Which of the following is the average case time complexity of selection sort?

- a)  $O(n)$
- b)  $O(n \log n)$
- c)  $O(n^2)$
- d)  $O(2^n)$

Answer: c)  $O(n^2)$

9. Which of the following is the last step in selection sort?

- a) Swap the last two elements
- b) Swap the first two elements
- c) Find the smallest element in the array
- d) Compare the last two elements

Answer: a) Swap the last two elements

10. Which of the following is a disadvantage of selection sort?

- a) It is a very slow algorithm
- b) It is not stable
- c) It requires additional memory space
- d) It cannot handle large datasets

Answer: a) It is a very slow algorithm