

Easy

Q1. Which of the following is the worst-case time complexity of Quicksort? [1]

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

Q2. What is the best-case time complexity of Quicksort? [1]

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

Q3. Which of the following cases represents the worst-case time complexity for Quick Sort? [1]

- b) When all elements are identical
- c) When the array is already sorted
- d) When the pivot is always the smallest element
- e) When the pivot is always the middle element

Q4. In Quick Sort, when will the recursion terminate? [1]

- a) When the entire array is sorted
- b) When the size of the sub-array is 1 or 0
- c) After a fixed number of iterations
- d) When the pivot element is the largest

Q5. What are the three steps involved in the Quick Sort paradigm? [1]

- a) Divide, conquer, combine
- b) Conquer, divide, combine
- c) Combine, divide, conquer
- d) Divide, combine, conquer

Q6. Which of the following methods is the most effective for picking the pivot element? [1]

- a) first element
- b) last element
- c) median-of-three partitioning
- d) random element

Q8. Find the pivot element from the given input using median-of-three partitioning method. [1]

8, 1, 4, 9, 6, 3; 5, 2, 7, 0.

- a) 8
- b) 7
- c) 9
- d) 6

$$\frac{9+0}{2} = 4.5$$

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Data Structures and Algorithms

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Section: B

Quiz 7

Roll number: _____

Q7. Perform a dry run of Quicksort using the middle element as the pivot?

[3]

$arr = [7, 11, 9, 6, 3, 12]$

$$\frac{5}{2} = 2$$

