**Question 6**

Which of the following case does not exist in complexity theory?

1. Best case
2. Worst case
3. Average case
4. Null case

The null case does not exist in complexity theory.

**Question 7**

The worst-case occurs in quick sort when

1. Pivot is the median of the array
2. Pivot is the smallest element
3. Pivot is the middle element
4. None of the mentioned

This happens when the pivot is the smallest (or the largest) element. Then one of the partitions is empty, and we repeat recursively the procedure for N-1 elements.

**Question 8**

The worst-case complexity of quicksort is

1. O(n)
2. O(log n)
3. O(n2)
4. O(n log n)

The worst-case complexity of quicksort is O(n2).

**Question 9**

The complexity of merge sort algorithm is

1. O(n)
2. O(log n)
3. O(n2)
4. O(n log n)

The worst case complexity for merge sort is O(nlogn)

**Question 10**

The worst-case complexity for insertion sort is

O(n)

O(log n)

O(n2)

O(n log n)