Time Complexity

1.
The complexity of linear search algorithm is

A. O(n)
B. O(log n)
C. O(n2)
D. O(n log n)

Answer: A

2. The complexity of merge sort algorithm is

A. O(n)
B. O(log n)
C. O(n2)
D. O(n log n)

Answer: D

3.
What is the time complexity of following code

```
int a = 0;
for (i = 0; i < N; i++)
{
    for (j = N; j > i; j--)
    {
      a = a + i + j;
    }
}
```

A. O(N)
B. O(N*log(N))
C. O(N * Sqrt(N))
D. O(N*N)

Answer: D

4.
What is recurrence for worst case of QuickSort and what is the time complexity in Worst case?

A. Recurrence is T(n) = T(n-2) + O(n) and time complexity is O(n^2)
B. Recurrence is T(n) = T(n-1) + O(n) and time complexity is O(n^2)
C. Recurrence is T(n) = 2T(n/2) + O(n) and time complexity is O(nLogn)
D. Recurrence is T(n) = T(n/10) + T(9n/10) + O(n) and time complexity is O(nLogn)

Answer: B

5.
What is the time complexity of pre-order traversal in the iterative fashion?

A. O(n)
B. O(1)
C. O(logn)
D. O(nlogn)

Answer: A

6.
The time complexity of heap sort in worst case is

A. O(logn)
B. O(n)
C. O(n2)
D. O(nlogn)

Answer: D

7.
Time complexity of bubble sort in best case is

A. θ (n)
B. θ (nlogn)
C. θ (n2)
D. θ (n(logn) 2)

Answer: A

8.
Which of the following algorithms has lowest worst case time complexity?

A. Insertion sort
B. Selection sort
C. Quick sort
D. Heap sort

Answer: D

9.
Out of following asymptotic notation which is the worst among all?

A. O(n+9378)
B. O(n3)
C. nO(1)
D. 2O(n)

Answer: B

10.
In conversion from prefix to postfix using stack data-structure, if operators and operands are pushed and popped exactly once, then the run-time complexity is −

A. O(n)
B. O(1)
C. O(log n)
D. O(n2)
Answer : A

11.
What is the time complexity Floyd Warshall Algorithm ?
A. O(V*V)
B. O(E*V)
C. O(V*V*V)
D. O(E*E)
Answer: C