

**SYNERGY INSTITUTE OF ENGINEERING AND TECHNOLOGY, DHENKANAL**

Near NH-55, Banamali Prasad – 759001

**Quiz-III**

**Full Marks-05**

**Duration-05 Min**

**Subject with Code:** DAA\_LAB (CSPC2206)

**Year & Semester:** 2nd & 4th

**Course & Branch**: B. Tech. & CSE

**Name: Registration No-**

**Roll No-**

Answer All Questions

**Tick the Correct Answer/Answers**

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| **Course Outcome** | **Total Marks** | **Marks Secured** | **Signature of Evaluator** |
| **CO1** | **05** |  |  |

**1.What is the worst-case time complexity of Merge Sort? [0.5 Mark][CO1][L3]**  
a) O(n)  
b) O(n²)  
c) O(n log n)  
d) O(log n)

**2.Which of the following techniques does Merge Sort use? [0.5 Mark][CO1][L3]**  
a) Dynamic Programming  
b) Divide and Conquer  
c) Greedy Algorithm  
d) Backtracking

**3.What is the best-case time complexity of Merge Sort? [0.5 Mark][CO1][L3]**  
a) O(n)  
b) O(n log n)  
c) O(n²)  
d) O(log n)

**4.What is the space complexity of Merge Sort? [0.5 Mark][CO1][L3]**  
a) O(1)  
b) O(log n)  
c) O(n)  
d) O(n log n)

**5.Why is Merge Sort preferred over Quick Sort for linked lists?[0.5 Mark][CO1][L3]**  
a) Merge Sort has a better worst-case complexity  
b) Merge Sort requires less memory  
c) Merge Sort does not use recursion  
d) Merge Sort works better with sequential access in linked lists

**6.Which of the following sorting algorithms has the same worst-case time complexity as Merge Sort? [0.5 Mark][CO1][L3]**  
a) Quick Sort  
b) Heap Sort  
c) Bubble Sort  
d) Selection Sort

**7.What is the time complexity of Merge Sort in the worst, average, and best case? [0.5 Mark][CO1][L3]**  
a) O(n²)  
b) O(n)  
c) O(n log n)  
d) O(log n)

**8.Merge Sort is an example of which type of sorting algorithm? [0.5 Mark][CO1][L3]**  
a) In-place sorting  
b) External sorting  
c) Greedy sorting  
d) None of the above

**9.Which of the following statements is true about Merge Sort? [0.5 Mark][CO1][L3]**  
a) It is not stable  
b) It is an in-place sorting algorithm  
c) It is a recursive sorting algorithm  
d) It has a worst-case complexity of O(n²)

**10.What is the main disadvantage of Merge Sort? [0.5 Mark][CO1][L3]**  
a) It is not suitable for large datasets  
b) It requires extra space proportional to the input size  
c) It has O(n²) complexity in the worst case  
d) It is slower than Bubble Sort