



United International University

Department of Computer Science and Engineering

CSE 2217/CSI 227 (A): Algorithms/Data Structure and Algorithms II

Trimester: Summer 2022

Class Test 2, Total Marks: 20, Total Time: 30 minutes

Question 1: How many subarrays can be built from the following array? Find the maximum sum subarray using the **divide and conquer** approach. You need to show the recursion tree and clearly mention the left, right, and crossing sum for each tree node. **[1+8]**

-4	-3	-2	-1	1	2	3	4
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Question 2: Using the **Recursion Tree Method**, show the time complexity of the **Merge Sort** algorithm. **[5]**

Question 3: You are given the start and finish time of 8 tasks. You can do only one task at a time and you will get \$100 for completing each task. What is the **maximum** number of tasks you can complete while maintaining the given conditions? You also need to show the tasks that you can complete. Show step-by-step simulation. **[6]**

Task	T1	T2	T3	T4	T5	T6	T7	T8
Start	1	0	1	4	2	5	3	4
Finish	3	4	2	6	9	8	5	5