

### Class Test-02

Time: 40 minutes

Set-04

Full Marks:15 (3×5)

Suppose, you are given a set of activities with their start and finish times. Only one activity can be performed at a time. Your goal is to select the maximum number of non-overlapping activities. Based on the information, answer the following questions:

1. Using the greedy strategy, write an algorithm to select the maximum number of non-overlapping activities. Make sure to define your expected input and output for the algorithm. (Marks: 06)
2. Write a program to implement your answer for question no 01. Make sure, your program contains adequate user interactive prompts. (Marks: 06)
3. Prepare three input and output test case for your written code in the answer to question no 2. One test case for best case, one for average case and one for worst case. (Marks: 03)

### Class Test-02

Time: 40 minutes

Set-05

Full Marks:15 (3×5)

A partial DNA sequence was lifted from a water bottle found near a campsite, suspected to belong to a missing teenager. Two families have come forward, each providing the DNA sequence of their missing child.

Scene DNA	<i>AGGCTA</i>
Child 1 DNA	<i>AGCGTA</i>
Child 2 DNA	<i>AGTCGA</i>

1. Calculate the LCS lengths to identify which child's DNA is the closest match to the scene DNA. Provide justification. (6 marks)
2. Write a program to print the LCS length. (5 marks)
3. Write a program to print the LCS string. (4 marks)