

Daffodil International University
Faculty of Science & Information Technology
Department of Software Engineering
QUIZ-2(missing), Summer 2026
Course Code: SE214; Course Title: Algorithm Design & Analysis
Sections: 44 & Teacher: AS

Time: 30 Minutes

Marks: 15

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1. A cashier has an unlimited supply of coins with denominations {1, 2, 5, 10}. Using Dynamic Programming, construct the DP table to determine the minimum number of coins required to make an amount of 12.	5															
2. A thief is planning to steal items from a store. The knapsack can carry a maximum weight of 10 kg. The available items are: <table><tr><td>Item</td><td>Weight (kg)</td><td>Profit (\$)</td></tr><tr><td>1</td><td>2</td><td>20</td></tr><tr><td>2</td><td>3</td><td>30</td></tr><tr><td>3</td><td>4</td><td>40</td></tr><tr><td>4</td><td>5</td><td>50</td></tr></table> Construct the Dynamic Programming table for the 0/1 Knapsack Problem to determine the maximum profit that can be obtained.	Item	Weight (kg)	Profit (\$)	1	2	20	2	3	30	3	4	40	4	5	50	5
Item	Weight (kg)	Profit (\$)														
1	2	20														
2	3	30														
3	4	40														
4	5	50														
3. Consider the two sequences: S1 = "XYZXYZ" and S2 = "XYZZX" a. Construct the Dynamic Programming table to find the length of the Longest Common Subsequence (LCS). b. Trace back the table and write one LCS.	5															