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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: **Item** / **Weight (kg)** / **Profit ($)** 1 / 2 / 20 2 / 3 / 30 3 / 4 / 40 4 / 5 / 50 Construct the Dynamic Programming table for the **0/1 Knapsack Problem** to determine the maximum profit that can be obtained.	5
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