

Daffodil International University
CSE228-Theory Of Computation
Quiz1
Spring-2026
Time: 45 Minutes
Section:67_A

1. Design DFA for the following language: [7 marks]
At Global Tech University, the student registration system uses a DFA to validate IDs: every valid ID must start with the fixed prefix **241-15-2** followed by a two-digit number from **01** up to **99**, so when a student types something like **241-15-223** into the registration form the DFA reads each character in order and accepts the input only if it matches the exact pattern and numeric range, ensuring that entries like **241-15-200** or upper than **241-15-299** are rejected before the form can be submitted.

2. Design DFA for the following language: [3 marks]
 $L = \{w \mid w \text{ contains a substring as } 1010\}$
3. Define the following terms:
 - (i)Alphabet set
 - (ii) Length of a string
 - (iii)Language

Suppose, an alphabet set contains 4 elements to construct some strings of any language. How many strings can be generated where each string length will be 5. [3+2 marks]