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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 | w 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]**