Quiz 1
Total marks: 10
Student ID: _____ **Duration: 25 minutes** CSE331

You have to use the designated spaces for your answers. No extra pages will be provided.

Problem 1: Regular Languages and DFAs (10 points)

Let $\Sigma = \{0, 1\}$. Consider the following languages over Σ.

$$L_1 = \{w : \text{every second letter of } w \text{ is } 0\}$$
$$L_2 = \{w : \text{every third letter of } w \text{ is } 1\}$$

(a) Write down a length 5 string that is in $L_1 \cap L_2$. (1 point) _____.

(b) Give the state diagram for a DFA that recognizes L_1. (3 points)

(c) Give the state diagram for a DFA that recognizes L_2. (3 points)

(d) Give the state diagram for a DFA that recognizes $L_1 \cap L_2$. (3 points)

Intentionally left blank. Feel free to use this space to do scratch work.