Quiz 1 Section 1
Total marks: 10
Student ID: _____ **Duration: 30 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 $\Sigma = \{0, 1\}$.

$$L_1 = \{w \in \Sigma^* : w \text{ starts with odd number of 1's}\}$$

$$L_2 = \{w \in \Sigma^* : w \text{ starts and ends with same character}\}$$

(a) Write down all strings in L_2 which are of length 3. (2 points)

(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 $L_1 \cap L_2$. (2 points)

(a)

(b)

(c)

(d)