

Midterm 2

ECE 275

Nov 12th, 2021

(1) Your name:

Student ID:

About the exam

1. There are total 4 problems.
2. Problem 1 and Problem 2 are mandatory. You have the option of doing any one of Problem 3 and Problem 4. If you do both, you will receive the best of the two.

Problem description

Design a Mealy sequential circuit which investigates an input sequence X and which will produce an output of $Z = 1$ for any input sequence ending in 1010 provided that the sequence 001 has never occurred.

Example:

$$X = 10101001010$$
$$Z = 00010100000$$

Notice that the circuit does not reset to the start state when an output of $Z = 1$ occurs.