

MIDTERM EXAM 2
11:30 AM – 12:20 PM
October 30, 2019

This exam has two (2) questions on one (1) pages. The marks for each question are as indicated. There are a total of ten (10) marks. Answer all questions. Write your answers and all rough work in this paper and nowhere else. Show your work. Draw a box around your final answer. Numerical answers must include units. Books and notes are allowed. No electronic devices other than calculators are allowed. Show your work.

This exam paper is for:

Sample Exam 1 A00000000

Each exam is equally difficult.

Answer your own exam.

Do not start until you are told to do so.

Name: _____

BCIT ID: _____

Signature: _____

Question	Mark	Max.
1		6
2		4
Total		10

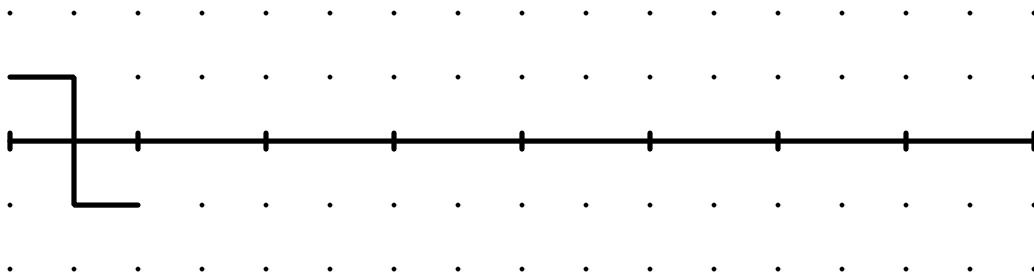
Question 1

6 marks

The following waveform shows the start of a sequence of bits transmitted using a *differential* Manchester line code. Draw the rest of the waveform if the subsequently-transmitted bits are:

0, 1, 0, 0, 1, 1

Use the coding convention described in the lecture notes.



Question 2

4 marks

A channel adds zero-mean Gaussian noise with a variance (σ^2) of 28 mV^2 to a signal. The receiver makes errors whenever the level of the noise exceeds $+0.4 \text{ V}$. What is the error rate?

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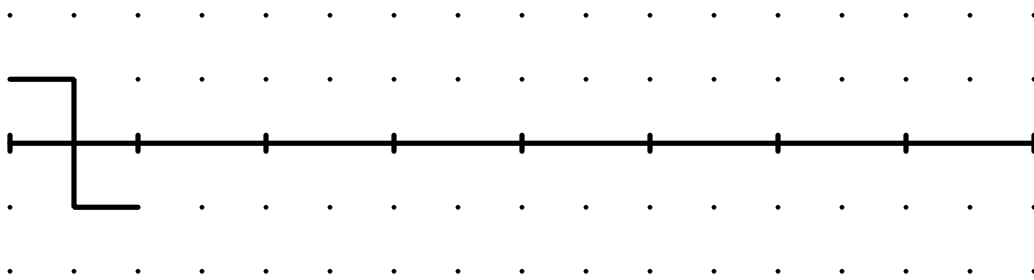
Question 1

6 marks

The following waveform shows the start of a sequence of bits transmitted using a *differential* Manchester line code. Draw the rest of the waveform if the subsequently-transmitted bits are:

1, 0, 1, 1, 0, 0

Use the coding convention described in the lecture notes.



Question 2

4 marks

A channel adds zero-mean Gaussian noise with a variance (σ^2) of 63 mV^2 to a signal. The receiver makes errors whenever the level of the noise exceeds $+0.6 \text{ V}$. What is the error rate?