

NAME:	Q1 (1)	Q2 (1)	Q3 (1)	Q4 (1)	Q5 (1)	TOTAL (5)
ID:						
SIGNATURE:						

October 16, 2018

BLG 337E - PRINCIPLES OF COMPUTER COMMUNICATIONS

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QUIZ-2

Q1- (1 point)

What is the minimum bandwidth needed to achieve a data rate of B bits/sec if the signal is transmitted using NRZ and Manchester encoding? Explain your answer.

ANSWER: In NRZ, the signal completes a cycle at most every 2 bits (alternating 1s and 0s). So, the minimum bandwidth need to achieve B bits/sec data rate is $B/2$ Hz. In Manchester encoding, the signal completes a cycle in every bit, thus requiring at least B Hz to achieve B bits/sec data rate.

Q2- (1 point)

What is the difference, if any, between the demodulator part of a modem and the coder part of a codec? (After all, both convert analog signals to digital ones.)

ANSWER: A coder accepts an arbitrary analog signal and generates a digital signal from it. A demodulator accepts a modulated sine wave only and generates a digital signal.

Q3- (1 point)

Why it is difficult to achieve the upper limit of bit rate in the real world?

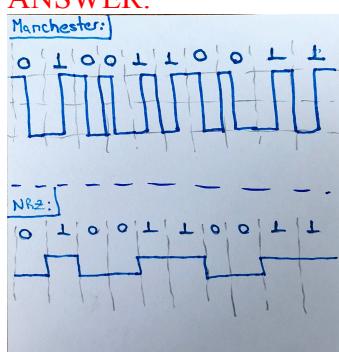
ANSWER: See Slide 31 in 09102018.

Q4- (0.50x2=1 point)

Draw the a) Manchester and b) NRZ line codes for the following bit stream

0 1 0 0 1 1 0 0 1 1

ANSWER:



Q5- (1 point)

What are the types of digital to analog modulation?

ANSWER: See Slide 12 in 02102018.

DURATION: 30min