ITS323 – Quiz 3

Name: _____

ID: _____ Mark: _____ (out of 10)

Question 1 [4 marks]

Assuming free-space propagation, what is the path loss between source and destination if both antenna's have gain 10dBi, the source transmits with power -14dBW and the received power is -90dBm?

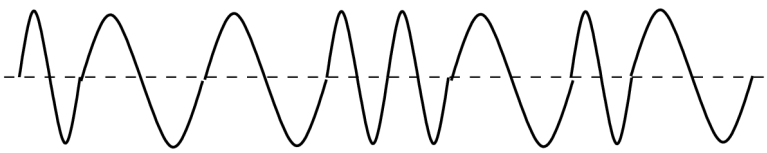
Question 2 [3 marks]

Consider the following received signal which uses two levels to represent data.

a) The first received bit is given. Completing the remaining bits. [2 marks]

1 ___ ___ ___ ___ ___ ___ ___

b) What is the name of this encoding scheme? [1 mark]



Question 3 [3 marks]

a) A transmitter adds a 1-bit even parity bit to the front (left-most position) of the 8-bits of data 01101010. If the first bit (left-most position) is in error, what does the receiver do? (e.g. is an error detected – why? Or not detected – why?) [2 marks]

b) Using this error-detection scheme and assuming no errors, what is the throughput for a link with data rate 1.8Mb/s? [1 mark]