Name: Id#

COE 202, Term 142

Digital Logic Design

Quiz# 1

Date: Tuesday, Feb. 10, 2015

# 

# **Q1.** Assume that we would like to transmit four different values v1, v2, v3 and v4 using a voltage range from **0 to 12 volts**. Determine the voltage values that will be used to represent these values with **maximum noise tolerance**. Determine the maximum noise tolerance achieved.

# **Q2.** Determine the **decimal** value of the following numbers:

## (11110001.101)2

## (3E.E)16

# 

# **Q3.** Represent the following numbers in **binary**. Use as many bits as needed, and approximate the fraction to **4 binary digits**:

## (416.4)10

## (C2.3)16

# **Q4.** Perform the following arithmetic operations:

## (01101111)2 + (00111001)2

## (EA)16 - (AF)16

## (4A)16 \* (32)16

Q5. Fill in the Spaces: (Show all work needed to obtain your answer)

1. The largest decimal value that can be expressed using 8 binary integer digits and 4 binary fractional digits is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. The number **128** is represented in **BCD** as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Given that an 8-bit register stores the ASCII code of a character in the least significant 7 bits and a parity bit in the most significant bit. Assuming that the register contains the hexadecimal value **E3** representing a character, the character stored in the register is \_\_\_\_\_\_\_ and the parity used is \_\_\_\_\_\_\_\_\_\_\_(i.e. even or odd parity). Note that the ASCII code of character ‘A’ is 41h and the ASCII code of character ‘a’ is 61h.