

Name:

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COE 200, Term 041
Fundamentals of Computer Engineering

Quiz# 1

Date: Monday, Oct 4 (8:00-9:00AM)

Q1. Represent the following numbers in **binary** and **hexadecimal**. Use as many bits as needed, and approximate the fraction to **4 binary digits**:

i. $(120.3)_{10}$

ii. $(32.3)_5$

Q2. Assume that an 8-bit register contains the following number 11010100. Determine the content of the register assuming that it represents:

i. an unsigned number.

ii. a 2's complement signed number.

Q3. Perform the following operations assuming that numbers are represented using 8-bits assuming **r's complement** representation, and determine if there is an overflow or not:

i. $11110000 + 11111101$

ii. $6A - F0$

Q4. Determine, in **binary** and **decimal**, the *smallest (negative)* number and the *largest (positive)* number that can be stored using the 2's complement notation, assuming **6-bit** representation.