Name: **Id#**

COE 205, Term 022

Computer Organization & Assembly Programming

Quiz# 2

Date: Sunday, March 16, 2003

Q1. Consider an 8-bit register that has the binary number 11100010. Determine the decimal value of the number if it represents:

    i.   An unsigned number.

    ii. A signed number in sign-magnitude representation.

    iii. A signed number in 1's complement representation.

    iv. A signed number in 2's complement representation.

Q2. Perform the following arithmetic operations assuming that numbers are represented using 8-bit 2's complement representation. Indicate in your answer when an _overflow_ occurs.

    i. 7F + 01

ii. FE – 7F

Q3. Fill the blanks in the following questions:

(i)   The binary number 01000100 represents character _____, and uses an _____ parity bit. Note that the ASCII code of character **A** is 41H and that of character **a** is 61H.

(ii) Assuming 7-bit 2`s complement representation, the smallest (negative) number is _____ in binary and _____ in decimal and the largest (positive) number is _____ in binary and _____ in decimal**.**

(iii) If you type the phrase Abc2 on your keyboard, the binary sequence sent to the computer using 8-bit ASCII code with the 8th bit being an even parity bit is
_____.
Note that the ASCII code for character 0 is 30H.