Name: **Id#**

COE 205, Term 992

Computer Organization & Assembly Programming
Quiz# 1

Date: Saturday, Feb. 5

(I) Consider the following two numbers A=-44 and B=-84

(1) Express the two numbers in both sign-magnitude and 2`s complement notations, assuming 8-bit representation.

(2) Perform the operation A-B twice, once for sign-magnitude notation and once for 2`s complement notation. Indicate in your answer when an overflow occurs.

(3) 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 8-bit representation.

(II) Briefly describe the following:

(1) The ISA (instruction set architecture) of a computer.

(2) The main functionality of the program counter register (PC).

(3) The main functionality of the instruction register (IR).

(4) The fetch-execute process in a computer.