Name: **Id#**

COE 202, Term 112
Digital Logic Design

Quiz# 4

Date: Saturday, April 7

Q1.

i. Determine the decimal value of the 8-bit binary number (11010100) when interpreted as:

An unsigned number	A signed-magnitude number	A signed-1's complement number	A signed-2's complement number

ii. Represent the decimal value (- 40) in binary using a total of 8 bits in the following notations:

A signed-magnitude number	A signed-1's complement number	A signed-2's complement number

iii. Perform the following signed-2's complement arithmetic operations in binary using 5 bits. All numbers given are represented in the signed-2's complement notation. Indicate clearly the carry values from the last two stages. For each of the three operations, check and indicate whether overflow occurred or not.

	a. 01001 +10111	b. 01000 - 10010	c. 11010 - 01101
Overflow Occurred? (Yes/No)			

Q2. Design a combinational circuit that receives a 4-bit unsigned number **I= $I_3I_2I_1I_0$** as input and generates the remainder of dividing this number by 3.