

# Quiz 2

(February 7<sup>th</sup> @ 5:30 pm)

## PROBLEM 1 (40 PTS)

- Complete the following table:

REPRESENTATION			
Decimal	Sign-and-magnitude	1's complement	2's complement
		1111	
		01101	
			100
-9			

- Convert the following decimal number to its 2's complement representation: -10.25 (5 pts)

## PROBLEM 2 (25 PTS)

- The figure shows two 8-bit operands represented in 2's complement. Perform the signed (2C) 8-bit addition operation, i.e., complete all the carries and the summation bits. Also, indicate the corresponding decimal numbers for the 8-bit operands and the 8-bit result.

Does this 8-bit operation incur in overflow?      Yes      No

Value of the overflow bit:            

Value of carry out bit:            

Decimal values	$c_8$	$c_7$	$c_6$	$c_5$	$c_4$	$c_3$	$c_2$	$c_1$	$c_0$
									0

## PROBLEM 3 (35 PTS)

- Complete the timing diagram of the circuit shown below:  $y = y_3y_2y_1y_0$ ,  $x = x_1x_0$

