Digital Logic Design
Quiz 01
2024/03/05

姓名: 學號: 系級:

1. Convert the following numbers with the indicated bases to binary: (30%)
   (a) $(14.6875)_{10}$ **1110.1011**
   (b) $(C5A.D)_{16}$ **1100_0101_1010.1101**

2. Obtain the 1's and 2's complements of the following binary numbers: (30%)
   (a) 01101010
   (b) 11010100

	1's	2's
01101010	**10010101**	**10010110**
11010100	**00101011**	**00101100**

3. Given the two binary numbers X and Y, perform the subtraction (X - Y) by using 2's complements. Where the result should be negative, find its 2's complements and affix a minus sign. 須附上算式。(40%)
   (a) X = 11010110; Y = 101100 **10101010**
   X + (Y 的 2 補數)
   11010110 + 11010100 = 110101010
   去掉溢位 => 10101010

   (b) X = 01001110; Y = 11000110 **-01111000**
   X + (Y 的 2 補數)
   01001110 + 00111010 = 10001000
   無 end carry => 為負數，要取 2 補數 => -01111000