**ECE 241 Home Work 1 Spring 2016**

**Due Date: February 8, 2016 Points: 15**

**This assignment will have to be done as a pdf document and uploaded to the course webpage.**

**1)** Write the 8-bit-binary two's-complement representation of the following numbers. Show the steps of converting the number.

A) 10010 = (01100011100101 + 0010011100011010) = 010011100011010

B) -12810 = (1111111111111111111111111111111111111111111111100110111110110 + 100110111110110) = 11000000000001

C)  510 = (0000000111111110 + 0111111110) = 1111111000000010

D)  12810 = (0011001000001010 + 011001000001010) = 1100110111110110

**2)** Convert the following 16-bit Hexadecimal number to decimal, assuming they are unsigned numbers.

I recommend converting them to binary and then converting binary to decimal.

A) 0xffff = 65535

B)  125016 = 1200150

C)  0x0011 = 17

D)  55AA16 = 5614102

**3)** Write out the results of the following logical operations, assuming the variables are all int's (16-bit integers). Also assume that the variable "Port" is equal to 0x0055 for each line.

A) Port &= 0xfff0;          Port 85 = 65520

B) Port |= 15;     Port 85 = 15

C) Port = Port ^ 0x0005;          Port 85 = 85^5

D) Port = (( Port & ~(0x000f) ) | 0x0020 );          Port 85 =