EECE.3170: Microprocessor Systems Design I
Fall 2019

Homework 5
Due **Friday, 11/22/19**

Notes:
- All of your work should be submitted using the appropriate link in Blackboard.
- While typed solutions are preferred, handwritten solutions are acceptable. However, your handwritten work must be scanned and submitted electronically.
- Your submission must be in a single file. <u>Archive files will not be accepted—if you're scanning handwritten pages, combine all pages in a Word document or PDF file.</u>
- This assignment is worth 100 points.

Show the result of each PIC 16F1829 instruction in the sequences below. Be sure to show not only the state of updated registers, but also the carry (C) and zero (Z) bits. You should assume that the carry bit is initially 0 for each sequence.

Each sequence is worth 25 points.

1. cblock 0x20
        x
    endc

    movlw   0x05
    sublw   0x15
    clrf   x
    comf   x, F
    xorwf   x, F
    swapf   x, W
    btfsc   x, 7
    bsf   x, 0

2. cblock   0x20
        A
        B
    endc

    clrf   A
    movlw   0x11
    movwf   B
    addlw   0x34
    subwf   A, F
    comf   A, W
    swapf   A, F

3. cblock 0x40
        var1
    endc

    movlw   0x1E
    movwf   var1
    rrf   var1, F
    xorwf   var1, W
    btfss   var1, 4
    iorlw   0x06
    andwf   var1, F
    bcf   var1, 0

4. cblock 0x70
        num1, num2
    endc

    movlw   0xAA
    andlw   0x0F
    movwf   num1
    xorlw   0xFF
    movwf   num2
    asrf   num2, F
    lslf   num1, W
    xorwf   num2, F
    comf   num2, W