

EECE.3170: Microprocessor Systems Design I

Spring 2016

Homework 6

Due **1:00 PM, Monday, 3/28/16**—NO LATE SUBMISSIONS

Notes:

- No late submissions will be accepted for this assignment, as the solution will be posted on Monday to allow you time to study it before Exam 2.
- While typed solutions are preferred, handwritten solutions are acceptable
- All solutions must be legible and contained in one file. Archive files are not acceptable.
- Electronic submissions should be e-mailed to Dr. Geiger at Michael_Geiger@uml.edu. Please include your name as part of your filename (for example, mgeiger_hw6.pdf).
- 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
```