

ECE 382 – Lesson 7 Miniquiz

Name: KEY Section: _____

1. (10 pts) How many registers does the MSP 430 have?

16 + 10

2. (10 pts) How many of these registers are considered special purpose registers?

4 + 10

3. (56 pts [i.e. 8 pts each line]) Given the following code, label which flags are set after each line of code. If the flag is set, insert a 1 in the box. If the flag is reset, insert a 0. If the instruction does not affect the flag bits, insert a '-' instead.

Leave no blanks if you want points.

	V	N	Z	C
mov.w #0x7fff, r5	—	—	—	—
add.w #1, r5	1	1	0	0
mov.b #0x80, r6	—	—	—	—
add.b #0x80, r6	1	0	1	1
mov.b #0x7f, r7	—	—	—	—
sub.b #0x80, r7	1	1	0	0
xor r3, r7	0	0	0	1

↙ +2 eq ↘

$$\begin{array}{r} 0x80 \\ + 0x80 \\ \hline 0x00 \end{array} \quad \begin{array}{l} - \\ - \\ +! \end{array}$$

$$\begin{array}{r} 0x7f \\ + 0x80 \\ \hline 0xff \end{array} \quad \begin{array}{l} + \\ + \\ -! \end{array}$$

4. (24 points[i.e. 8 pts each line]) What are the final values in each register after execution?

+8 r5 = 0x8000

+8 r6 = 0x0000

+8 r7 = 0x00ff