

Name _____

CM _____ Section _____

ME430 - Mechatronics

Examination I
September 24, 2013

Problem	Score
1	/ 10
2	/ 10
Total	/ 20

For the written portion of the exam, you may use only:

- Any paper notes (such as notes on the videos) you brought to the exam, so long as those notes were written by you or your lab partner.
- A pencil/pen.
- A calculator (optional).

For the computer portion of the exam, you may use only:

- Your computer
- Any paper notes (such as notes on the videos) you brought to the exam, so long as those notes were written by you or your lab partner.
- Any electronic notes or code residing on your local (C:) hard drive, so long as those notes/code were written by you or your lab partner.
- The course website. (This is the only approved use of the internet for this exam.)
- A calculator (optional).
- Email for code submission.

Anything not specifically allowed is prohibited. In particular, you may not use notes or code written by someone outside your lab group.

Problem 1 – Number Systems:

What is stored in **signed char X** in each of the following cases?

Write your answer in **binary**. (show all 8 bits)

Calculation**X value**`X = 0x12;``X = -11;``X = 3;``X = '3';``char name[] = "Clark";
X = name[1];`

Problem 2 – Variable Types and Operations:

What is stored in **unsigned char X** in each of the following cases?

Write your answer in **decimal**.

Calculation

X value

$X = (123 / 10) \% 10;$

$X = 11 \gg 2;$

$X = 6 * 1 / 3;$

$X = 10 / 3 * 6;$

$X = 0b0101 \wedge 0b0011;$