Department of Electrical and Computing Engineering

UNIVERSITY OF CONNECTICUT

ECE 3411 Microprocessor Application Lab: Fall 2015

Question III

There are 4 short questions in this quiz. There are 2 pages in this quiz booklet. Answer each question according to the instructions given.

You have **5 minutes** to answer the questions.

If you find a question ambiguous, be sure to write down any assumptions you make.
Be neat and legible. If we can't understand your answer, we can't give you credit!

Write your name in the space below. Write your initials at the bottom of each page.

THIS IS A CLOSED BOOK, CLOSED NOTES QUIZ.
PLEASE TURN YOUR NETWORK DEVICES OFF.

Any form of communication with other students is considered cheating and will merit an F as final grade in the course.

Do not write in the box below

Total (xx/10)

Name:

Student ID:

1. Which one of the following systems may potentially waste and/or inefficiently utilize the useful CPU cycles?

(a) Interrupt Based System

(b) Polling Based System

(c) Both (a) and (b)

(d) None of the above

2. The following code shows a typical polling based system.

```c
int main(void){
    // Event Loop
    while(1){
        if (Button1_Pressed()) Task_1();
        if (Button2_Pressed()) Task_2();
    }
}
```

Which statement is correct about this system?

(a) `Task_1()` has higher priority than `Task_2()`.

(b) `Task_2()` has higher priority than `Task_1()`.

(c) Both `Task_1()` and `Task_2()` have the same priority.

(d) None of the above

Hint: `Task_1()` is said to have higher priority than `Task_2()` if, while in the middle of executing `Task_2()`, the AVR is ready to stop executing `Task_2()` and execute `Task_1()` immediately if it needs to react to a change coming in from the outside world.

3. What is the return value of `ISR()` function?

4. Can a **user defined** variable be passed to an `ISR()`? If not, how can a variable be made accessible inside an `ISR()`?

End of Question

Please double check that you wrote your name on the front of the question.

Initials: