



Department of Electrical and Computing Engineering

UNIVERSITY OF CONNECTICUT

**ECE 3411 Microprocessor Application Lab: Fall 2015**

## Question IV

There are 3 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*

<b>Total (xx/10)</b>

**Name:**

**Student ID:**

1. In 'Normal Mode', when does the 8-bit Timer/Counter Timer0 overflow?
  - (a) When TCNT0 matches with OCR0A
  - (b) When TCNT0 matches with OCR0B
  - (c) When TCNT0 = 255
  - (d) None of the above
  
2. In 'Clear Timer on Compare Match' (CTC) mode, Timer0 resets itself automatically when it reaches the value that is stored in the register:
  - (a) OCR0A
  - (b) TCCR0A
  - (c) TIMSK0
  - (d) None of the above
  
3. Assume an MCU with crystal clock frequency 16MHz with Timer0 initialized as follows:

```
/* Normal mode (default), just counting */  
TCCR0B |= 0x01; /* Clock Pre-scaler @ 1 */
```

At what rate, the register TCNT0 is incremented?

### End of Question

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

**Initials:**