



Department of Electrical and Computing Engineering

UNIVERSITY OF CONNECTICUT

ECE 3411 Microprocessor Application Lab: Fall 2015

Question VIII Solution

There is 1 question 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

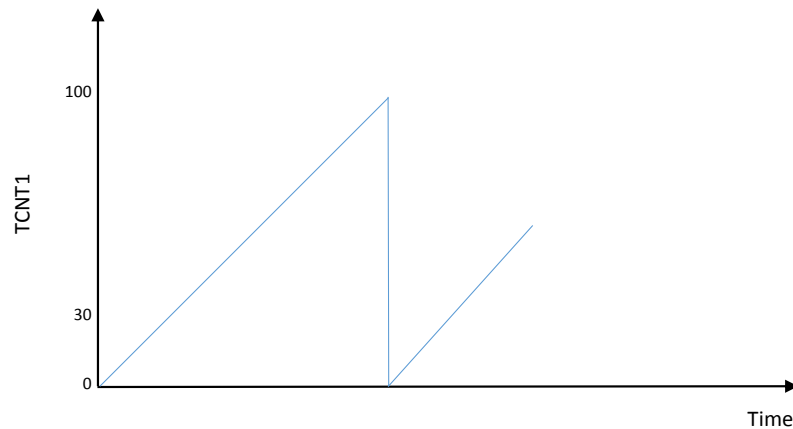
Total (xx/10)

Name:

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1. Given below is an Interrupt Service Routine called for Timer1 Compare Match A. Assume no prescaler is set for Timer 1 and OCR1A is initially set to 100.

```
ISR(TIMER1_COMPA_vect)
{
    OCR1A = 30;
}
```



a. Indicate in the time axis given above where the ISR is being called?

b. Indicate in the time axis when $OCR1A = 30$ in the ISR will be executed?

Answer: Since it takes approximately 75 cycles to go in and out of an ISR, the statement $OCR1A = 30$ will be executed sometime after TCNT1 becomes 30.

c. For what value of TCNT1 will the ISR be executed next?

Answer: ISR will be executed next when TCNT1 is equal to 30.

End of Question

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

Initials: