EE361 Microcomputer-Based Digital Design

Quiz 2

Open book, open notes.

Name: _____
Section: _____
Date: 6 October 2008

There is another problem on the back of this sheet.

1. Consider the schematic drawing in Figure 1. If the LED drops 1.4 V when it is conducting and if the supply voltage is $V_{\mathrm{DD}} = 3.5$ V, what value of 5%-accurate resistor R should you choose in order to limit the current to not more than 10 mA? The values of 5%-accurate resistors are multiples of 1, 11, 12, 13, 15, 16, 18, 2, 22, 24, 27, 3, 33, 36, 39, 43, 47, 51, 56, 62, 68, 75, 82, and 91.

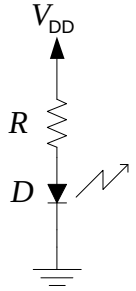

Figure 1: Problem 1

2. This table shows the contents of three registers in the PIC16F884:

Address	**Contents**
0x0E	135_{10}
0x0F	254_{10}
0x10	165_{10}

How long will it be before Timer 1 is cleared (becomes zero again) if the PIC is being driven by an oscillator with frequency $f_{\text{osc}} = 15\,\text{MHz}$?