

**Lab 6:** *Resistive Sensors and RC Transients*

**Report Due:** 10/3-4/06

**Assignment:** Perform Lab 6 from the course text, *A First Lab in Circuits and Electronics*, Tsividis. All questions must be answered in your report. **Required** ( $\geq 28$  points).

**TekBot™ Challenge:** For above average (B) or excellent (A) grades on this assignment, modify your TekBot™ to “go to sleep” (cease operation) five seconds after the lights in the lab are turned off. When the lights are turned back on, the TekBot™ will resume its normal bump-bot operation after five seconds.

**B** ( $\geq 32$  points): Design an electrical circuit using a photo-resistor, a capacitor and a comparator to interface to your motor control board.

**A** ( $\geq 36$  points): In addition to B, design the necessary circuitry to interface and program your TekBot™ AVR microcontroller to display on the LCD screen “Good Night” when the lab lights go out and “Good Morning” when the lab lights are on.

**Report:** Use the format discussed in the “FORMAL REPORTS” section of the syllabus. Include copies of your lab notebook pages with execution times and verification signatures. Each page must have your name and the date of your lab work execution.

‘B’ requirement verification:

**Lab Instructor's Initials** \_\_\_\_\_

**Date:** \_\_\_\_\_

A requirement verification:

**Lab Instructor's Initials** \_\_\_\_\_

**Date:** \_\_\_\_\_