

UNC Charlotte, Department of Electrical and Computer Engineering

ECGR3/5/6090, Fall 2003, Homework #10, Due: 11/19/03, at the beginning of class (20 points)

1. Read the article Reentrancy by Jack Ganssle. In 4 lines of correct English, describe why Mr. Ganssle thinks you may find “60 Minutes” knocking on your door. (3 points)
2. According to the article Introduction to PWM by Michael Barr, what are two advantages of using digital circuits with PWM over analog circuits in controlling analog circuits? (2 points)
3. You are working for a local television company and your ultra creative reality show producer comes up with this great reality show bit where each contestant holds their breath as long as they can and whoever holds their breath the longest wins. To time how long they hold their breath, the contestants press an active low switch while they’re holding their breath. When they pass out due to lack of oxygen, they inadvertently relinquish the button. Assuming that you connect to the switch to one of the input pins on our SKP-30262 board, design a polling-based timer system that will measure how long the signal on the input pin remains low, and then displays the time they had held their breath on the LCD in seconds. Write the main() function and relevant initialization functions in C. All included header files (sfr262.h etc.) should be clearly stated. (15 points)