LAB 10 QUESTIONS

Group: ____ Names: _____ _____

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(1) Rewrite "onint.bas" from the previous Lab using polling instead of interrupts.

(2) For the original counter design in Section 10.2, when the 'up' button is held down awhile the PIC will continue to count up. Explain why.

(3) For the original counter design in Section 10.2, explain what happens when the 'up' and 'down' buttons are held down together. Why does this happen?

(4) For the alternative counter design in Section 10.3, why is the 555 and D flip-flop hardware no longer required?

(5) Explain how switch bounce could possibly have a negative impact with the alternative design in Section 10.3 if the 0.01 sec software pause were not included.

(6) Explain why debounce software is not required for the reset button in the alternative design in Section 10.3.

(7) For the original counter design in Section 10.2 that was demonstrated by the TA (i.e., not the alternative design in Section 10.3 that you built), how would you create the functionality in the Updatepins subroutine for updating the PORTA and PORTB registers using multiple individual bit references (e.g., PORTA.0 = pins[I].4, PORTA.1 = pins[I].5, ...) instead of single-line assignment statements (e.g., PORTA = ... and PORTB = ...)?
Hint: The comments above the assignment statements in the code explain what is being done.
Hint: The comments below the 7-segment-display illustration in the "counter.bas" program involving the "bit numbers" and "segments" can be helpful.