Quiz 3

(November 11th @ 5:30 pm)

PROBLEM 1 (20 PTS)

- Mark the correct option:
  - ✓ The address where the Interrupt Vector is located is called: Vector Address Return Address
  - ✓ The Real-Time Interrupt is a: Maskable Interrupt Non-maskable Interrupt
- Complete:
  - ✓ The Starting address of an Interrupt Service Routine is called _____
- HCS12 Timer: Briefly describe the following functions:
  - ✓ Input Capture Function:
  - ✓ Output Compare Function:

PROBLEM 2 (50 PTS)

- To create a delay using the Output Compare Channel 2, we add a number of cycles (DCYCLES) to `TC2` and then wait until `TCNT` is equal to `TC2`. This happens when `TLFG1(2)=1`. Assuming an E-clock of 24 MHz, complete the following table in order to generate the given delays. Maximize the pre-scale factor and minimize DYCLES (5 < DYCYCLES < 65536).

DCYCLES	Pre-scale Factor	Timer Clock Frequency	Delay
			200 us
			4 ms

PROBLEM 3 (30 PTS)

- Provide the pre-scale factor, HCYCLES, and LCYCLES (in number of cycles) in order to generate an active high 4-kHz digital waveform using the Output Compare function of the HCS12D Timer. Assume E-clock=24 MHz.