**CPEN 291 - Lab 3 Questions**

*Lab section: \_\_\_L2A\_ (example: L2A) Team (Bench) #: \_\_A\_T20\_\_\_ (example: A-T2)*

Answer the following questions. Submit the completed document (in word or pdf, one per team) to Canvas by the deadline.

Q1 – Teamwork: Explain in details the methods your team has used for the labs so far to communicate effectively among team members.

Q2 – Ultrasonic Sensor: Include the portion of your Python code for interfacing with the ultrasonic sensor here, and explain in plain English how it is implemented.

Q3 – Shift Register:

1. Explain what the RCLK signal is for.
2. Explain what the signal is for.
3. From the datasheet explain what values we can use for tw (used in slide 3-26)?

Q4 – DHT11: The DHT11 sends a sequence of 40 bits for the measurements. Refer to the datasheet and explain how we can differentiate between a 0 and a 1.

Q5: In your implementation explain and justify the followings:

1. How long does it take for your sonar to scan 0 to 180? State the default as well as the possible range.
2. How often do you read the DHT11 sensor? Why?
3. What are the servos steps (in degrees and/or dutyCycle)? (in other words, going from 0 to 180, how do you increase the servo position?)

Q6 – Challenges: Explain at least one aspect of the lab that was challenging for your team to make it work.