**SYSC 3203: Fall 2019**

**Lab 1 Report**

Submit this page to the lab instructor.

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student ID:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student ID:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2: Mouse**

2.1: Explain your plan for modifying the mouse:

Verified: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date/Time:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.2: Show the modified mouse is operating properly:

Verified: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date/Time:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3: Relay**

3.1: Using a labelled diagram, briefly explain how the protection diode in the relay works:

3.2: Calculate the resistor value:

3.3: Find another relay on Digikey that you think could be a suitable relay for this project. Compare three specifications (ex. size, cost, operating temperature) of your relay with the SIL03-1A72-71D relay. Briefly discuss how these specifications would make your relay more or less suitable for this project.

Relay name:

Specification 1:

Specification 2:

Specification 3:

**4: Optoisolator**

4.1: What is the rated isolation voltage of the optoisolator and why is it important for the isolation voltage to be this high for biomedical applications?

4.2: Explain how to calculate the resistor value for the optoisolator:

4.3: Show the complete isolated mouse interface is operating properly:

Verified: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date/Time:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_