Name: Student ID:

Lab Section: Date:

# **Prelab**

1. Why is it important to include offset in a program counter?
2. This circuit utilizes debouncing. Where should it be included?
3. What is the purpose of the SN74HCT273N (Register) chip in the breadboard implementation?
4. Create a Diagram of the CD74HCT283E (Adder) chip and have the students give the pin assignments.

 TA Initials:

#

# **Lab**

**4.1**  **Place the Chips, LEDs, and Connectors**

Verify that you placed your chips, LEDs, bus connectors, power and ground wires correctly. Show your progress on the breadboard implementation to the TA before you proceed. (25 pts)

 TA Initials:

**4.3** **Connect the Offset Bus and the PC Bus to the Adders**

Verify that you connected the inputs to adders correctly. Also, verify that you connected your adders and MUXs correctly. Show your progress on the breadboard implementation to the TA. (25 pts)

 TA Initials:

**4.6** **Finish the Circuit**

Verify that you connected the outputs from the MUXs to the inputs of the register correctly. Also, verify that the output of the Register is connected to the PC bus and LEDs. Additionally verify that the signal, clock and clear lines are added. Show your completed implementation to the TA. (25 pts)

 TA Initials:

**5.2** **Functionality Tests**

Power on your circuit. Run the tests outlined in the lab document. (25 pts)

 TA Initials: