ECE 2054 Lab 02 Procedure Fall 2012

Submit this completed worksheet to scholar!

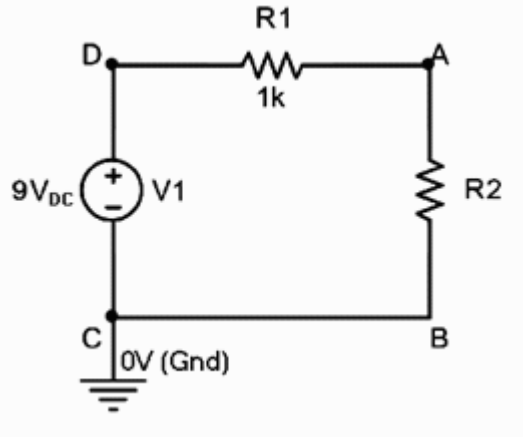
Include the units for all of your measurements.

Name:

NOTE: Your name is required! No Name = 0, no credit!

A. Use Pspice to build and simulate the circuit from Experiment 01

Construct the circuit below in Pspice



Resistor R2 (Red-Violet-Red-Gold) = 2700Ω:

1. Use Pspice schematic to place the parts, wire the circuit (see the Lab Lecture 02 notes for details of how to build and wire the circuit, and run the simulations).

2. Use the Pspice Bias Simulation display to determine the voltage across R2, and the current flowing through R2.

   V_{R2} = _____, I_{R2} = _____

3. Place a Pspice voltage probe to measure V_{R2}, a current probe to measure I_{R2}, and a differential voltage probe pair to measure V_{R1}.

4. Add a text that says "*your name*, ECE2054 - Lab 02," to the schematic below your circuit.

5. Run a Pspice transient simulation from 0ns to 1000ns. You may set the step ceiling to 100ns for a faster simulation. **Save your schematic** (will save the simulation settings) for upload to scholar.

6. Use the cursor and marker to measure V_{R1}, V_{R2}, and I_{R2} at t = 200ns.

   V_{R1} = _____ V_{R2} =_____ I_{R2} =_____

7. Submit your worksheet AND the pspice schematic (.sch file) to scholar. Each file is worth 50 points.

After you have completed the Lab procedure,

1. **Go to the "Tests and Quizzes" on Scholar, and answer the questions in the Lab Quiz**. The questions cover Pspice concepts.

2. **Take your computer with to the OpEL and Validate** your Lab before the due date and time.

ECE 2054 Lab 02 Validation Procedure – Fall 2012 **Name _____**

Validation must be completed by the deadline

2054 Lab 02

1. When the GTA calls your name: (25 points)
   a. Your computer is on.
   b. Your Pspice schematic is loaded with V and I Bias Displays turned on
   c. Your Pspice transient simulation has been run
   d. Your simulation values for V_{R1}, V_{R2}, and I_{R2} are labeled at t = 0.200µs.

2. The GTA will look at your schematic and check your **wiring and component values**, and check for the required text (***your name,* ECE2054 - Lab 02**). (25 points)

3. The GTA will check your simulated bias voltages and currents for accuracy. (25 points)

V_{R2} = _____, I_{R2} = _____

4. The GTA will check your transient simulation values of the measurements for V_{R1}, V_{R2}, and I_{R2}. (25 points)

V_{R1} = _____ V_{R2} =_____ I_{R2} =_____

5. **IMPORTANT:** The GTA will swipe your hokie passport and enter your grade into the data base.

Before you leave the lab, check your email for the card swipe confirmation and the accuracy of your grade.

Do not leave the lab until you have verified that your grade was submitted correctly.

If there is an email delay and you cannot wait for your confirmation, have the GTA complete and give to you a grade slip (from the GTA table in 222).

Save the confirmation email until your grade appears correctly in scholar.