George Mason University **Physics 311**

Voltage Divider and Thevenin theorem

Goals and Learning outcomes

By the end of this lab, you should be able to-

- Design and build a voltage divider circuit to suit your application
- Apply the Thevenin theorem to calculate output parameters of a complex circuit
- Understand what a load is

Assignment 1: Perform a load analysis (calculation only)

Apply the Thevenin theorem and analyze how a load variation between 1K and 5k (minimum and maximum) load resistance will affect the output voltage of the circuit. Is the voltage divider stable?

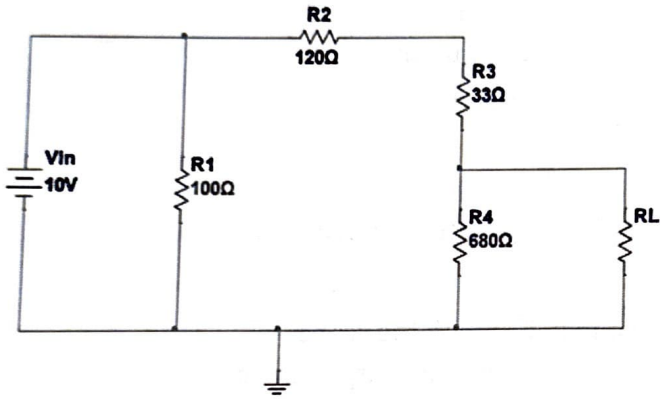

Figure 1: Variable Load Circuit

Assignment 2: DC Voltage Divider

- Build the following circuit on your breadboard.

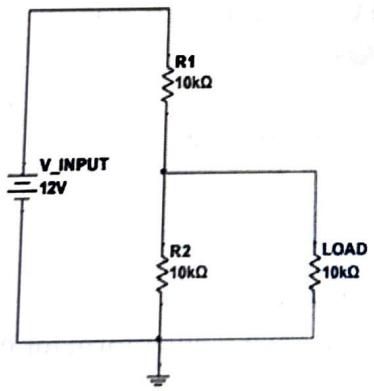

Figure 2: Voltage Divider

- Without the load resistor attached and an input voltage of 12 V, **predict** the no load output voltage $\mathbf{V_{out}}$.
- For the same input voltage measure the no load output voltage $\mathbf{V_{out}}$.