

Question:

Is the resistance of a light bulb constant, or does it depend upon the operating voltage?

Lab:

To determine the relationship between the resistance of a light bulb and the voltage applied.

Plan:

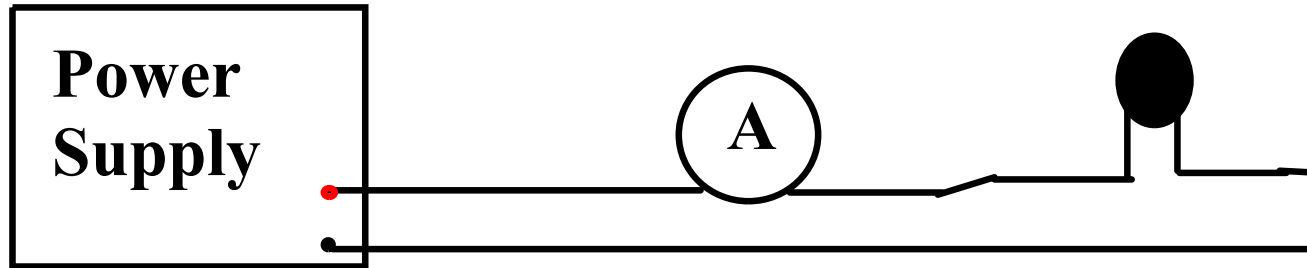
- 1. Wire up a light bulb to a power supply, voltmeter, and ammeter.**
- 2. Increase the voltage across the bulb from 0 volts to 5.0 volts at intervals of 0.25 volts and record the voltage and current each time.**
- 3. For each trial, calculate the resistance.**
- 4. Plot a graph of resistance (y-axis) as a function of voltage (x-axis).**

Obtain the following:

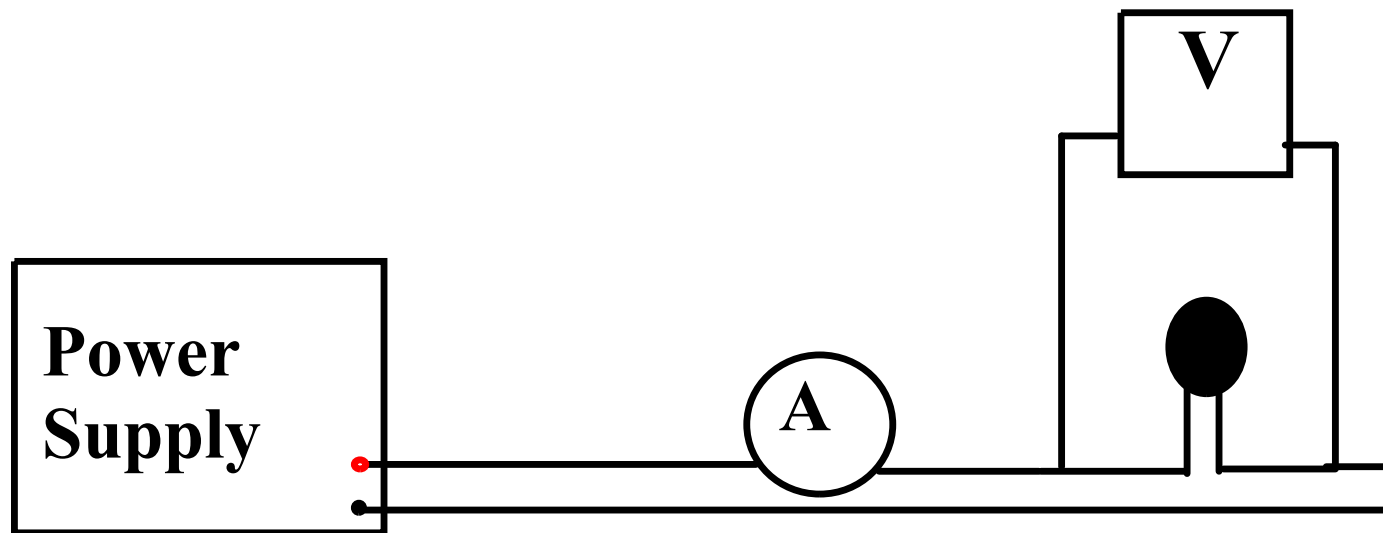
- 1. Power Supply**
- 2. Direct Current Ammeter**
- 3. Direct Current Voltmeter**
- 4. Light Bulb with socket**
- 5. TWO Banana ->Alligator jumpers**
- 6. ONE Banana ->Banana jumper.**

Do NOT connect anything. Wait for further instructions.

Series Circuit:



1. Ammeter must be wired in series and with proper polarity.
2. Polarity does not matter to the bulb.
3. **DO NOT CONNECT POWER UNTIL INSTRUCTOR APPROVES THE CIRCUIT!**



Use two banana-alligator jumpers to connect the voltmeter.

Voltmeter must be wired in parallel, and with proper polarity.

When the circuit has been approved, begin making your measurements.

Your writeup should contain

Title, Date, Your Name

Schematic Diagram

Procedure

Data Table

Trial | Voltage | Current | Resistance

Graph

Conclusion

