

Lab 1. (42 points total)

1-1 Ohm's Law (5 points)

- 1 point for I on the y-axis, V on the x-axis
- 1 points for 1.5K line
- 1 points for 1.0K line
- 2 points for labeled axes

1-1 A Qualitative View (6 points)

- 1 point for "fixed" circuit diagram
- 1 point for ideal voltmeter internal resistance
- 1 point for ideal voltmeter explanation
- 1 point for ideal ammeter internal resistance
- 1 point for ideal ammeter explanation
- 1 point for accuracy of current measurement

1-1 A Quantitative View (3 points)

- 1 point for circuit diagram of the "alternative hookup"
- 2 points for error explanation (20K vs 20M)

1-2 An Incandescent Lamp (5 points)

- 1 point for I on the y-axis, V on the x-axis
- 1 point for enough points to reach nonlinear range
- 1 point for labeled axes
- 2 points for "resistance" of light bulb

1-3 The Diode (10 points)

- 1 point for linear plot
- 1 point for I on the y-axis, V on the x-axis
- 1 point for at least 4 points
- 1 point for labeled axes
  
- 1 point for log-linear plot
- 1 point for log I on the y-axis, V on the x-axis
- 1 point for at least 4 points
- 1 point for labeled axes
  
- 2 points for behavior of the diode

1-5 Oscilloscope (4 points)

- 1 point for the rise time
- 2 points for explanation for how TTL/CMOS (or Pulse) works
- 1 point on explanation for how the AC/DC selector works

1-6 Voltage Divider (9 points)

DC Source

1 point for V(open circuit) circuit diagram

1 point for V(open circuit) measurement

1 point for load resistor attached to V(out) circuit diagram

1 point for explanation

1 point for I(short circuit) circuit diagram

1 point for I(short circuit) measurement

2 points for Thevenin equivalent circuit

AC Source

1 point for explanation of high frequency output