YILDIRIM BEYAZIT UNIVERSITY
CENG 205 LABORATORY
EXPERIMENT 1

Objectives:

1) To learn the resistor values reading using colors.
2) To learn Ohm's Law

Laboratory Exercises:

1) Fill the table 1 according to results you obtain from parts A) and B).

    A) You are given some resistors. Record their color codes. Using these color codes find their nominal resistance values and tolerance values.

B) Using your multimeter, measure the resistances of each resistor.

Calculated (Nominal±Tolerance)	Measured

Table 1

Question 1: Are calculated and measured values different from each other? If they are, explain the reason briefly.

2) You are also given POT resistors. Using your multimeter measure POT resistors' both extreme resistance values (i.e. potentiometer knob is set at most clockwise and counter clockwise positions). Record these values to table 2.

POT-1	POT-2

Table 2

Question 2: Explain the working principle of the POT. Also, give the properties of each knob. Why we have 3 knobs on the POTs?

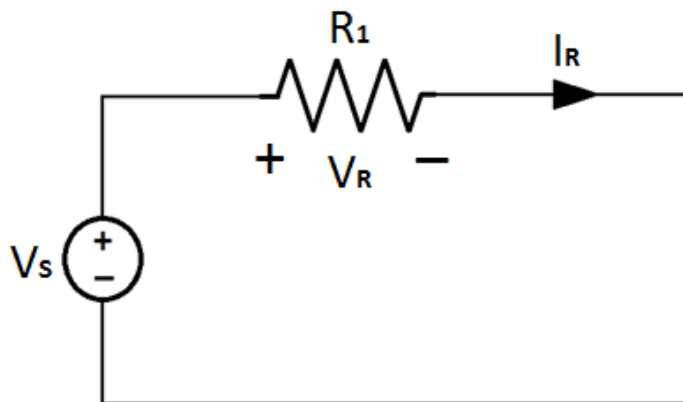**3)** Choose one of your resistors and setup the circuit in Figure 1 on your breadboard.

Figure 1

Here Vs is a DC source. Select at least 4 different DC voltage levels 1 V, 2 V, 3.5 V and 5 V. With your DC power supply, apply these voltage levels to your circuit. For each source voltage level, you will record voltage seen on and current passing the resistor R1 using your voltmeter to table 3.
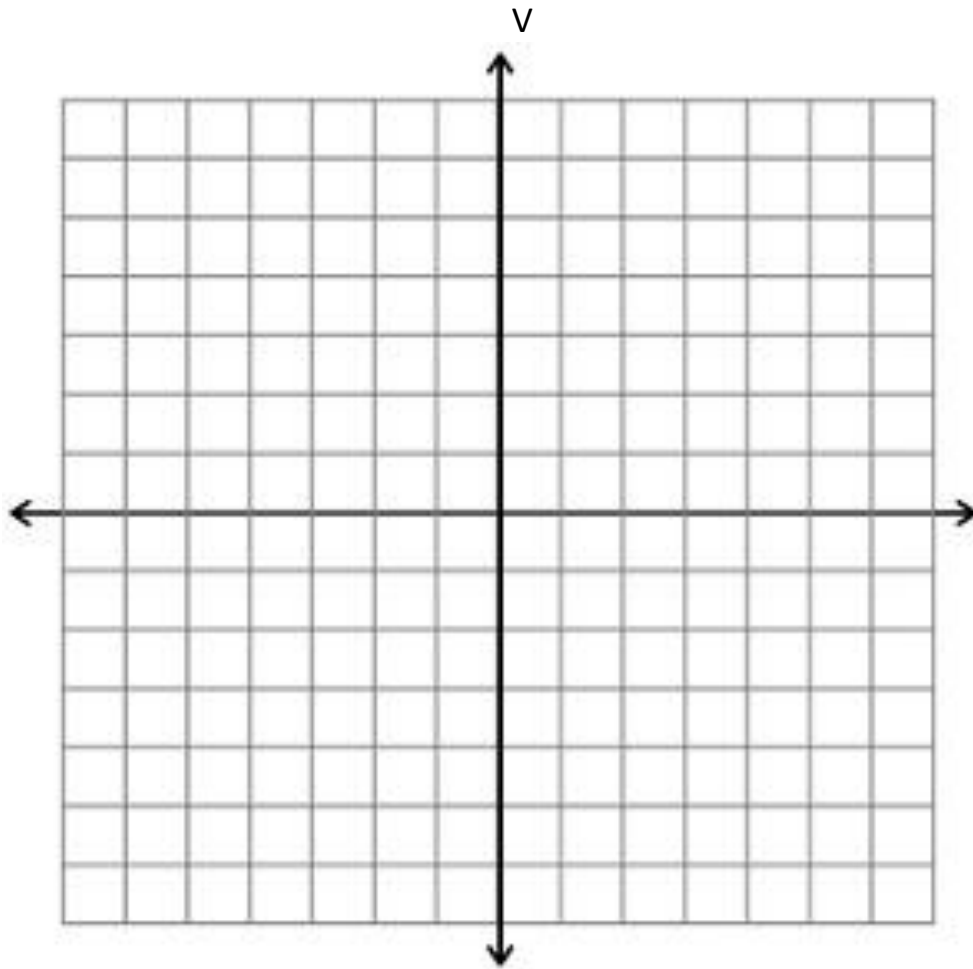
Voltage	Current

Table 3

With your recorded data, draw the I-V graph for R1. Comment on the behavior of this graph.

Question 3: Explain the theory behind this experiment (part 3). What is the slope of this graph?

Graph :

V

*** y axis must be voltage (V), x axis must be current (i)