

1. **AIM:** To determine the value of an unknown resistor in a circuit using Ohm's law.

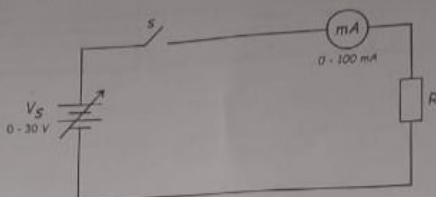


Figure 1

- Connect the circuit as shown in Figure 1.
- Ask the supervisor to check the circuit connection.
- You are provided with Table 1.

Table 1

$V_S (V)$	$I (mA)$
0.0	
2.0	
4.0	
6.0	
8.0	
10.0	

- Adjust the power supply, V_S to 0 V.
- Close the switch S .
- Read and record in Table 1, the milliammeter reading, $I (mA)$.
- Open the switch S .
- Repeat steps 1 (e) to 1 (g) for other values of V_S shown in Table 1.
- Plot the graph of voltage, V_S on the vertical axis against current, I on the horizontal axis.
- Determine the slope, K of the graph.
- What does the slope, K represent?

2. **AIM:** To verify Ohm's law in a series-parallel circuit.

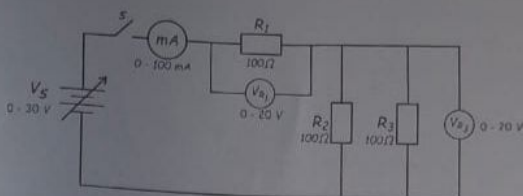


Figure 2

- (a) Connect the circuit as shown in Figure 2.
 (b) Ask the supervisor to check the circuit connection.
 (c) You are provided with Table 2.

Table 2

$V_s (V)$	$I (mA)$	$V_{s1} (V)$	$V_{s2} (V)$
0.0			
3.0			
6.0			
9.0			
12.0			
15.0			

- (d) Adjust the power supply, V_s to 0 V.
 (e) Close the switch S.
 (f) Read and record in Table 2, the milliammeter reading, I and voltmeter readings, V_{s1} and V_{s2} .
 (g) Open the switch S.
 (h) Repeat steps 2 (e) to 2 (g) for other values of V_s shown in Table 2.
 (i) Plot the graph of voltage, V_s on the vertical axis against current, I on the horizontal axis.
 (j) Determine the slope, K of the graph.
 (k) What does the slope, K of the graph represent?
 (l) At $V_s = 3$ V, evaluate the product of the slope, K and current, I .
 (m) How does the result in 2(l) satisfy Ohm's law?

END OF PAPER