

### **Exp. No. 03**

**Name of Experiment:** Verification of KVL for dc circuits.

#### **Theory:**

Kirchhoff's law states that the algebraic sum of all voltages around a closed path is equal to zero. Mathematically it states that,  $\sum V_m = 0$  in a loop.

It can be said in another way, the applied voltage of a series circuit equals the sum of the voltage drop across the series elements.

$$\sum V_{\text{rise}} = \sum V_{\text{drop}}$$

#### **Equipments:**

- |                           |                  |
|---------------------------|------------------|
| 1. Resistance. (3 pieces) | 4. Ammeter.      |
| 2. Connecting wires.      | 5. Project board |
| 3. DC Voltage source.     | 6. Multi-meter.  |

#### **Circuit diagram:**

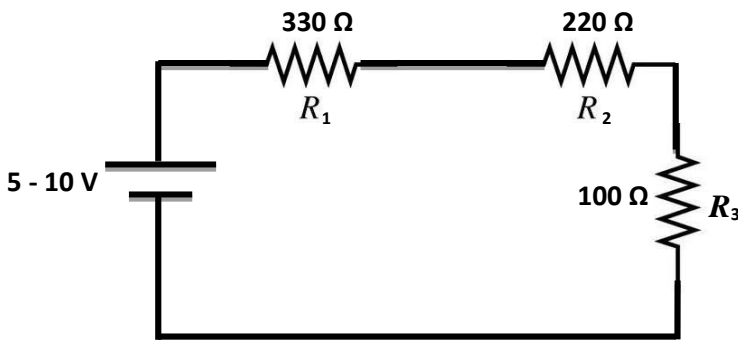


Figure: 1

#### **Procedure:**

- (1) According to the circuit diagram that shown in figure: 1, connect the elements properly.
- (2) Measure the voltage drop  $V_1$ ,  $V_2$ ,  $V_3$  across  $R_1$ ,  $R_2$ ,  $R_3$  respectively.
- (3) Complete the calculation and find the percentage of error.

**Experimental Data:**

SL No.	Supply Voltage $V_s$ (v)	Voltage drop across $R_1$ , $V_1$ (v)	Voltage drop across $R_2$ , $V_2$ (v)	Voltage drop across $R_3$ , $V_3$ (v)	Total Voltage drop $V = V_1 + V_2 + V_3$ (v)	Percentage of error = $(V_s - V) / V_s \times 100 \%$
1.						
2.						
3.						
4.						
5.						

**Discussion:** Write yourself.