

EXPERIMENT 2

SERIES AND PARALLEL CIRCUITS

OBJECTIVE

Comprehending series and parallel circuits.

EQUIPMENT NEEDED

- Digital Multimeter (DMM)
- DC Power Supply
- Resistors

PRELIMINARY WORK

P1 Calculate R_T , V_1 , V_2 , V_3 and i_T for *Figure 2.1*.

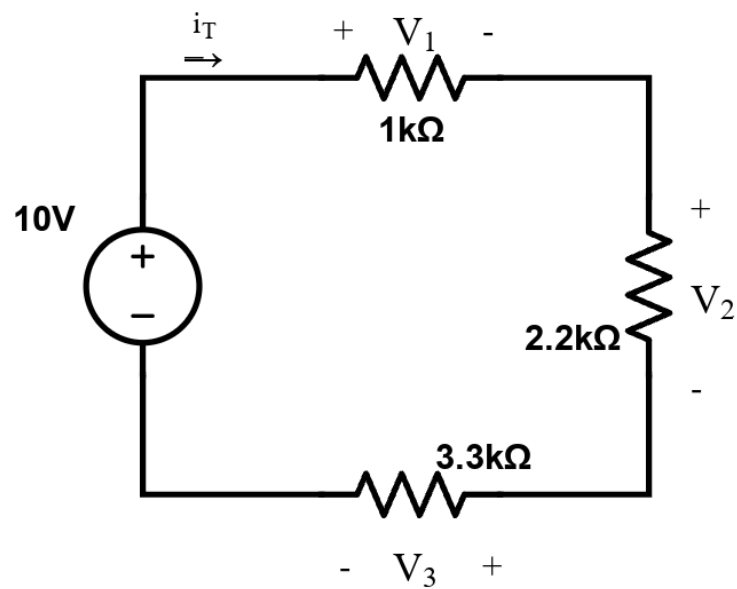


Figure 2.1

Table 2.1

	R_T	V_1	V_2	V_3	i_T
Calculated					

P2 Calculate R_T , V_1 , V_2 , V_3 , i_1 , i_2 and i_3 for *Figure 2.2*.

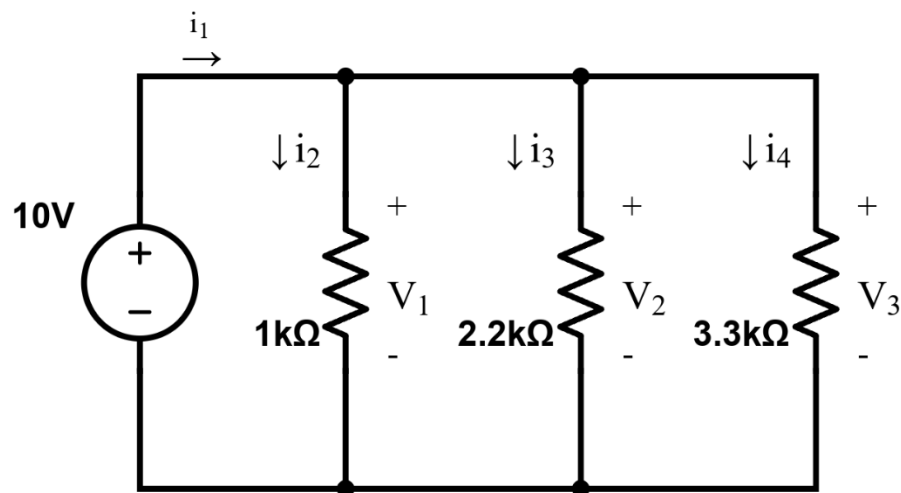


Figure 2.2

Table 2.2

	R_T	V_1	V_2	V_3	i_1	i_2	i_3	i_4
Calculated								

P3 For the circuit of *Figure 2.3* calculate the resistance between nodes:

- A and B
- A and C
- C and D

Hint: Part c cannot immediately be reduced using series and parallel combinations.

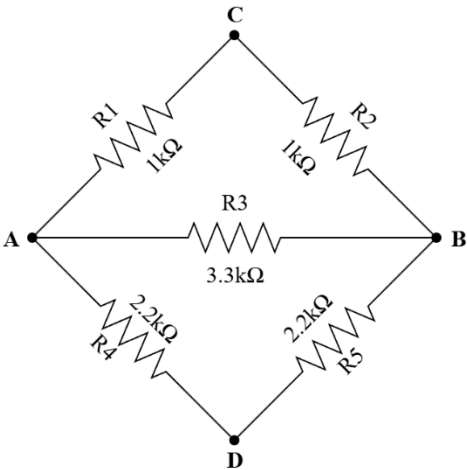


Figure 2.3

	R_{A-B}	R_{A-C}	R_{C-D}
Calculated			

EXPERIMENTAL WORK

E1 Setup the circuit given in Figure 2.1. Verify the theoretical values found in preliminary work.

Table 2.3

	R_T	V_{Source}	V_1	V_2	V_3	i_T
Theoretical						
Measured						
Percent Error						

E2 Setup the circuit given in Figure 2.2. Verify the theoretical values found in preliminary work.

Table 2.4

	R_T	V_{Source}	V_1	V_2	V_3	i_1	i_2	i_3	i_4
Theoretical									
Measured									
Percent Error									

E3 Setup the circuit given in Figure 2.3. Verify the theoretical values found in preliminary work.

Table 2.5

Resistance	Calculated	Measured	Percent Error
R_{A-B}			
R_{A-C}			
R_{C-D}			