

ELT 101: Basic Electricity: AC/DC

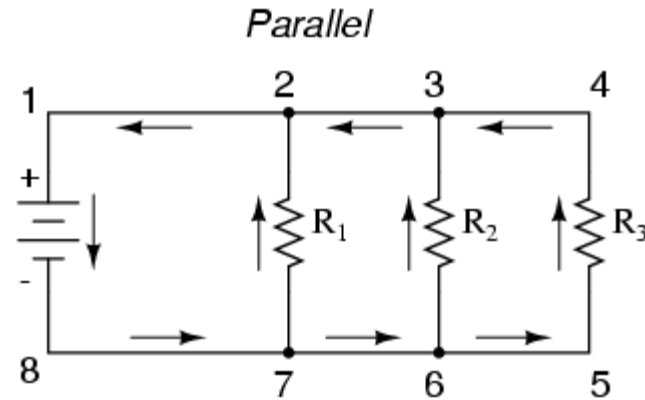
LAB 8-1: Parallel circuits

Objectives

- 1) Given an electrical trainer, build a functioning parallel circuit.
- 2) Calculate all circuit values of the parallel circuit to include E, I, R and P.
- 3) Measure circuit values to insure calculations were correct.

Equipment and materials

- 1) Safety glasses
- 2) Fluke 179 DMM
- 3) Electrical trainer
- 4) Jumper leads



Procedure 1: Build a parallel circuit

- 1) Using the components listed below and your jumper leads, build the circuit shown above on your trainer:

R₁ = 33 ohms

R₂ = 47 ohms

R₃ = 220 ohms

DC power = 5V

Procedure 2: Calculate circuit values

- 1) Calculate the circuit parameter s and record them in the table below.

	Calculated	Measured
RT		
IT		
IR1		
IR2		
IR3		
PR1		
PR2		
PR3		

Procedure 3: Measure circuit values

- 1) Complete the pre-use tests on the Fluke 179.
- 2) Set the Fluke 179 to read current.
- 3) With the power off to the protoboard, break the circuit, insert your meter set to read current , restore power and measure circuit current.

$I_T =$ _____

- 4) Turn off power, reinsert the meter in between resistors as needed to measure the current in each branch through R_1 , R_2 , and R_3 ; record your answers below.

$I_{R1} =$ _____ $I_{R2} =$ _____ $I_{R3} =$ _____

What does this tell you about current in a parallel circuit?

- 5) Set the meter to read voltage and measure the voltage drops across R_1 , R_2 , and R_3 and record your answers below.

$V_{R1} =$ _____ $V_{R2} =$ _____ $V_{R3} =$ _____

What does this tell you about voltage drops in a parallel circuit?

****** end of lab 8-1 ******