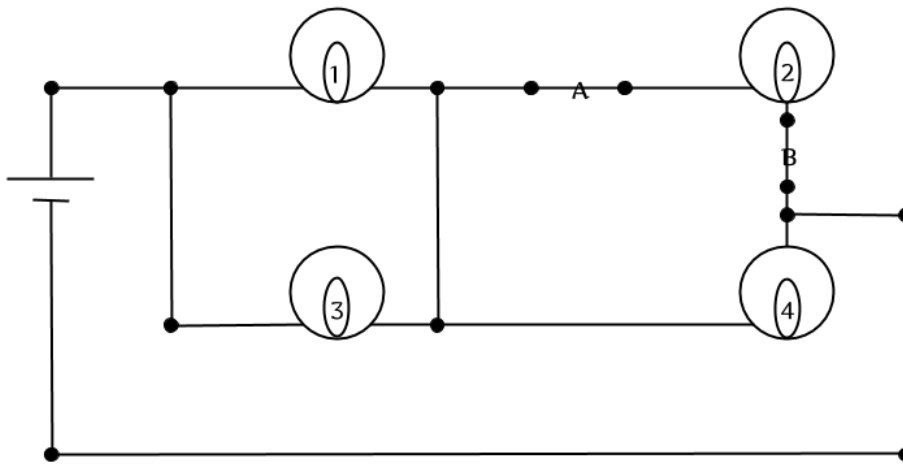


Team Name: _____

Participants: _____

Part I: students given circuit drawings and they shall answer questions based on them

Circuit Analysis #1: Using the circuit below, answer the questions that follow. Lightbulbs are labeled as 1, 2, 3, and 4, and switches are labeled A and B.



1. Circle the battery, and label the positive and negative ends.
2. When switch A is open and B is closed, which light bulbs switch off?
3. When both A and B are open, which light bulbs remain on?
4. If light bulb 4 burns out and switch B is opened, which light bulbs remain on?
5. How many crossed conductors are present?

Part II: Build your “continuity tester” with the provided materials.
When it is complete, call of an event supervisor and they will have
you test it on 5 different circuits. The event supervisor will mark your
results below:

For EVENT SUPERVISOR ONLY:

Circuit 1: YES NO

Circuit 2: YES NO

Circuit 3: Letter 1: _____ Letter 2: _____

Circuit 4: Letter 1: _____ Letter 2: _____

Circuit 5: Connection 1: _____ and _____

Connection 2: _____ and _____

Part III: Below are written instructions for three different circuits.

Choose ONE and complete the following:

1. Draw the circuit in the space below. Make sure you use all the correct symbols in your drawing.

2. Answer questions (a-d) about the circuit you chose in the space below your drawing.

1. Using 4 resistors (2 ohms each) and one battery source(10 V), draw a circuit with 2 open switches and a parallel pathway.
 - a. Will removing one resistor (2 ohms) short-circuit the whole circuit?
 - b. What will adding another resistor (2 ohms) on the circuit?
 - c. What will happen if a light bulb with an internal resistance of 2 ohms was added?
2. Using 2 resistors (2 ohms each) and 2 battery sources (10 V each), draw a circuit that does not short-circuit
 - a. Will removing one resistor (2 ohms) short-circuit the whole circuit?
 - b. What will adding another resistor (2 ohms) on the circuit?
 - c. What current is running through the circuit right now?
3. Using 1 (2 ohms) resistor and one battery source (10 V), draw a circuit that does not short-circuit
 - a. Will removing the resistor short-circuit the whole circuit?
 - b. What will adding another resistor (2 ohms) on the circuit?
 - c. What current is running through the circuit right now?

Circuit I chose _____

Drawing:

a) _____

b) _____

c) _____