

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Block: \_\_\_\_\_

### Circuit Lab

#### Purpose:

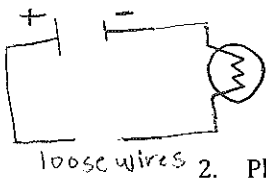
In this lab, you will make circuits using different configurations of switches and batteries to see how the voltage and current depend on them.

#### Materials:

- battery
- connecting wires
- switches
- ammeter
- voltmeter
- light bulbs

#### Procedure (record all results on this handout):

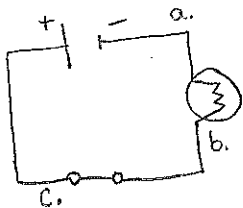
1. Using the materials provided, make the circuit in the diagram below. Using the two loose wires, test and list **five** conductors and **five** insulators. Record your results.



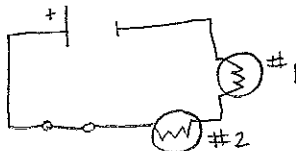
- |     |     |
|-----|-----|
| 1 - | 1 - |
| 2 - | 2 - |
| 3 - | 3 - |
| 4 - | 4 - |
| 5 - | 5 - |

2. Place an ammeter after each of the following components and take a reading of the current. Record your results.

- a. After battery =
- b. After light bulb =
- c. After switch =
- d. What do the readings all have in common?
- e. What can you say about the current in a circuit?



3. Adjust your circuit to the diagram below. Attach a voltmeter across the battery as well as each of the lamps to determine potential difference across each. Record your results.

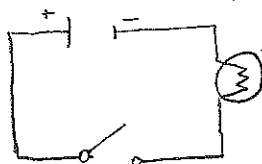


- a. Potential difference across the battery =
- b. Potential difference across light bulb #1 =
- c. Potential difference across light bulb #2 =
- d. Add the potential difference across light bulb #1 and light bulb #2 =

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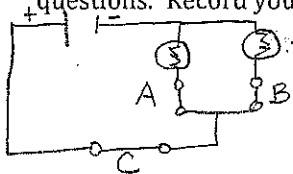
- e. Does your answer from part (a) equal your answer from part (d)?
- f. What can you say about potential difference in a circuit?

4. Construct the circuit from the schematic diagram below. List **five** reasons that it might not work. Record your reasons.

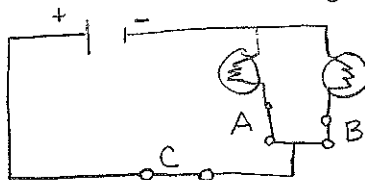


- 1-
- 2-
- 3-
- 4-
- 5-

5. Construct the parallel circuit from the schematic diagram below and answer the following questions. Record your results.



- a. What happens when you close Switch A?
  - b. What happens when you open Switch A?
  - c. What happens when you close Switch B?
  - d. What happens when you open Switch B?
  - e. What happens when you close both Switch A and Switch B at the same time?
  - f. What can you say about a parallel circuit?
6. Construct the circuit from the schematic diagram below and answer the following. Record your results.



- a. (Close A and B) What happens when you close Switch C?
- b. (Close A and B) What happens when you open Switch C?
- c. What type of switch is C?