

## Section 2/4: Electric Current and Voltage

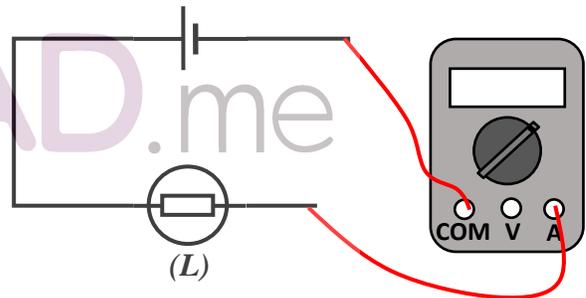
**T/F:** State whether each of the following statements is true or false. Correct the false ones.

- 1- **TRUE.**
- 2- **FALSE.** In a closed electric circuit, electrons flow from the **negative** of the generator to the **positive** pole.
- 3- **FALSE.** In an electric circuit, charge flow can consist of **conductive material only**.
- 4- **FALSE.** Electric current is **not consumed** as it moves through an electric load. For instance, the intensity of the current entering a light bulb is **equal to** that which exits it.
- 5- **FALSE.** A battery is used to power a flashlight circuit. When the battery no longer works, it is because it has run out of electric **voltage**.
- 6- **TRUE.** Electric voltage is expressed in units of volts.
- 7- **FALSE.** Voltage is a measure of electric energy supplied for each **coulomb (or charge unit)** moving in the circuit.
- 8- **TRUE.** The positive terminal (+) of a dry cell is a location with a higher electric potential than the negative terminal (–) of the battery.
- 9- **TRUE.** A 6-Volt battery would provide 12 Joules of energy to 2 Coulombs of charge as it circulates the circuit.
- 10- **TRUE.** The charges that flow through the wires in your home are already in the wires.

**Open Answers:** Answer the following questions.

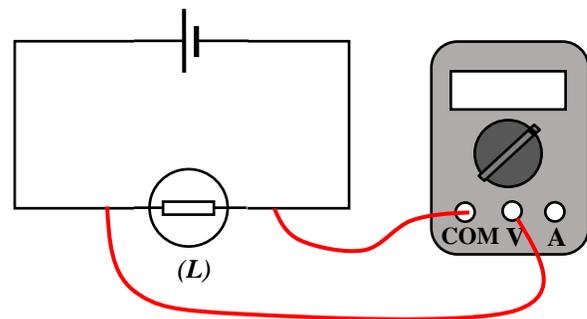
### Exercise 1:

The multimeter should be used as an ammeter (A-mode) where it is connected in series in the circuit with the com closer to the negative pole of the dry cell.



### Exercise 2:

The multimeter should be used as a voltmeter (V-mode) connected in parallel to the lamp with the com terminal closer to the negative pole of the dry cell.



### Exercise 3:

- 1- The most accurate reading is given by the range closest to the measured voltage and greater than its value.  
Hence, the range of 20V corresponds to 9.24V reading.  
The range of 200V corresponds to the 9V reading and the 1000V range gives the 10V reading which is the least accurate value.
- 2- Using the range 2000mV which is 2V results in the display of number 1. To the left side on the screen because the voltage measured is larger than the range.

**Exercise 4:**

In figure 1, the ammeter acts as a short circuit where no current is found through the lamp. Thus, the lamp does not light.

In figure 2, the voltmeter acts as an open switch thus not allowing current through the circuit. The lamp does not light.

