

## PH 102 Quiz 1: Mostly Current and Resistance

Note:  $\Omega$  is the symbol for Ohms, or Volts per Ampere.

- An electric current is:
  - The rate at which charge flows through a surface
  - The rate at which electric potential changes
  - The number of charges per unit volume
  - A flow of electrons
  
- Which of the following correctly states Ohm's law:
  - $\Delta V = I/R$
  - $\Delta V = IR$
  - $R = I/\Delta V$
  - $I = \Delta Q/\Delta t$
  
- An electric current of  $1 \mu\text{A}$  flows through a conductor, which results in a  $1.5 \text{ mV}$  potential difference. The resistance of the conductor is:
  - $1.5 \Omega$
  - $6.6 \times 10^{-4} \Omega$
  - $1.5 \times 10^{-9} \Omega$
  - $1500 \Omega$
  
- Which of the following does not obey Ohm's law? Check all that apply.
  - A resistor
  - A slab of Copper
  - A diode
  - An insulator
  - A capacitor
  
- Consider the positive and negative charges moving horizontally through the four regions below. Which one has the highest current? Consider the  $+x$  direction to be to the right.

- A
- B
- C
- D