

Name: _____

Unit 6 Study Guide: Electrostatics and Electric Current

1. Know your science vocabulary for this unit! Charge, conductor, Coulomb's Law, coulomb, conservation of charge, electrostatics, induction, insulator, semiconductor, superconductor, polarization, alternating current, direct current, ohm, Ohm's Law, potential difference, ampere, and voltage.
2. Be able to use the following formulas to find voltage, current, and resistance in electric current problems.

$$V = IR$$

$$I = \frac{V}{R}$$

$$R = \frac{V}{I}$$

What does V stand for? What are the units?

What does R stand for? What are the units?

What does I stand for? What are the units?

What law relates these variables? What does the law state?

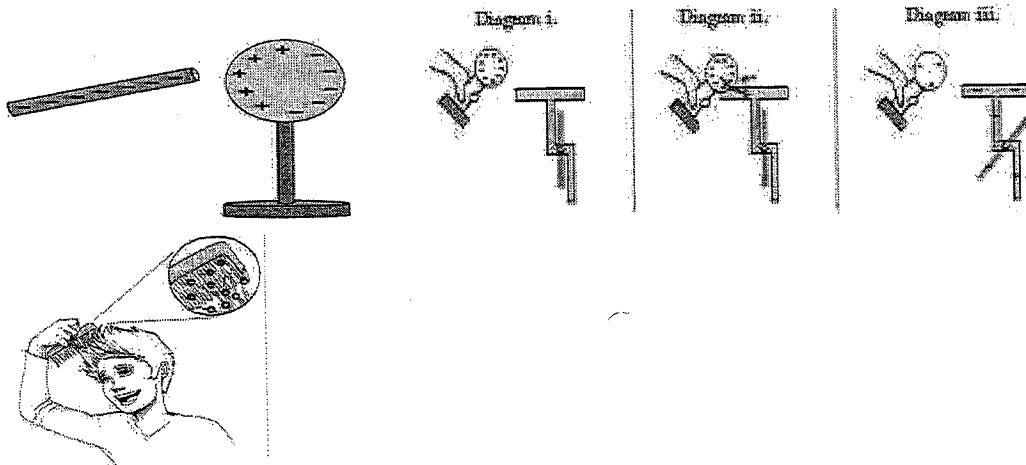
What is the resistance of a wire carrying 20 amperes of current in a 120 volt circuit?

A 110 volt wall outlet supplies power to a strobe light with a resistance of 2200 ohms. How much current is flowing through the strobe light?

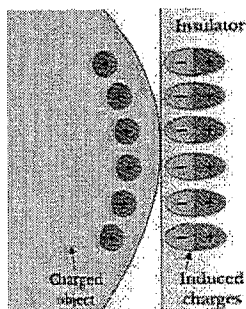
A CD player with a resistance of 40 ohms has a current of 0.1 amps flowing through it. Calculate how many volts supply the CD player?

3. State whether the charges attract or repel: + + _____
- + _____ - - _____

4. Label the pictures with the proper charge type:



5. What is being shown in the picture below?



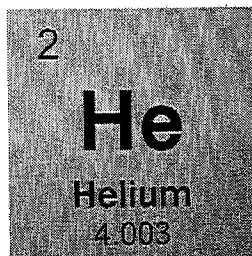
6. What are some examples of conductors? Insulators? Why do these materials behave the way they do?

7. What are the particles that make up an atom? What are their charges? Where in the atom are they found?

8. What impacts electrical resistance in a wire?

9. What is an electroscope?

10. Determine the atomic number, mass number, charge, number of protons, neutrons, and electrons for the following atoms/ions:



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