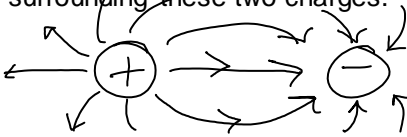


Practice Test!!! (Chapters 22 & 23) Part 1

Wednesday, February 10, 2010
2:05 PM

1. What is electric charge?
 - a. Electric charge produces electric force
2. Draw a positive charge at some distance r from a negative charge, and draw the electric field lines surrounding these two charges.



3. Compare the mass and charge of protons and electrons.
 - a. Mass_{electron} \ll Mass_{proton}
 - b. Charge_{electron} = - Charge_{proton}
4. How many electrons are in 1C?
 - a. $1\text{C} / 1.6 \times 10^{-19} \text{C/electron} = 6 \times 10^{18}$ electrons
5. Voltage is also known as....
 - a. Electric potential (or potential difference)
6. Describe the difference between a conductor and an insulator.
 - a. Conductor allows transmission of electrons easily
 - b. Insulators prevent transmission of electrons
7. What is a semiconductor? Superconductor?
 - a. Semiconductors can be made into conductors or insulators when given certain conditions such as light, temp, ratio of one atom to another, current
 - b. Superconductor has very low (nearly 0) resistance near 0K or at higher temperatures (depends on the material)
8. What does it mean to have a net positive or negative charge?
 - a. Have an excess or shortage of electrons
9. What are the units of the electric field?
 - a. Newtons/Coulomb (force/charge)
10. Describe the electric field inside a conductor (like inside a hollow metal sphere).
 - a. Electric field inside is equal to zero (no matter what the shape!)