

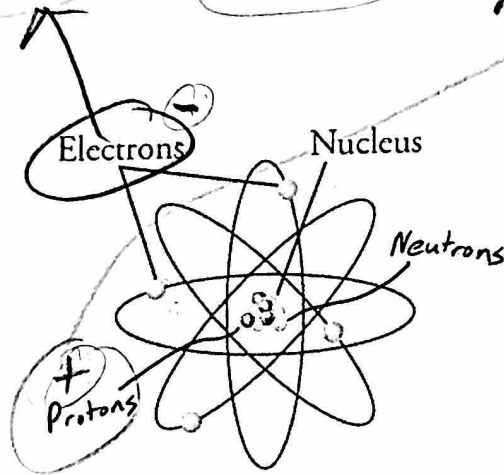
Unit 2: Electricity

Notes, part 1: Textbook Chapter 18.1 Electrical Charge, Conservation of Charge, Transfer of Charge

1. What are the two types of charges? Positive + Negative

2. Like charges repel and unlike charges attract.

3. In atoms, electrons carry negative charge and protons carry positive charge.



4. The strengths of a proton's charge and an electron's charge are

the same (though they are opposite)

5. "Net charge" is what you get when you add up all of the positive and negative charges inside something. What is the "net charge" of an object with....

a. 3 protons $\Rightarrow +3$

b. 4 electrons $\Rightarrow -4$

c. +2 protons and 1 electron $\Rightarrow +1$

d. 5 electrons and 3 protons $\Rightarrow -2$

d. 7 protons and 7 electrons $\Rightarrow 0$

6. When materials are rubbed together, charges can be separated, particularly if one material has a greater affinity for electrons than another.

how much it "likes" electrons.

7. Rabbit fur has a Weak affinity for electrons, while PVC has a Strong affinity for electrons.

8. Suppose we have a rabbit fur that has zero net charge, and we also have a PVC pipe that has zero net charge. What can we say about the number of protons and electrons in each object?

of protons = # of electrons

9. If we rub a PVC pipe with rabbit fur, what effects might we observe? Why?

They should attract. PVC steals electrons from fur. PVC becomes negative (gains electrons). Fur becomes positive. Opposites attract.

10. During this experiment, what has happened to the total number of positive and negative charges (if we add up all the positive and negative charges on the two objects)? Has the total increased, decreased, or stayed the same. Explain.

No charges are ~~made~~ created or destroyed. They just trade places.

11. Law of Conservation of Charge:

Net charge of a system remains constant (doesn't change)

12. In the winter, people often talk about static electricity. What does the "static" part of "static electricity" mean? Why is it called "static electricity?"

Static = not changing (not moving)

In static electricity, there is no current (no flow of charge)