

1a) why is the term “static” electricity used? the term static is used to tell a person if something is STAYING PUT, as electric charge

1b) Describe a situation involving static electricity to explain your answer. when you use a comb to brush your hair it makes static from all the electrons that comb has gathered. (electrons to or from the comb)

Pg. 273 question 2

a). The law of electric charges, like charges repel one another, and unlike charges attract one another.

b). When two objects are negative charge they repel each other. When you rub a balloon on your head (if you have hair) the balloon becomes negatively charged and your hair becomes positively charged and they attract. (hair stands up, ‘tries’ to touch the balloon)

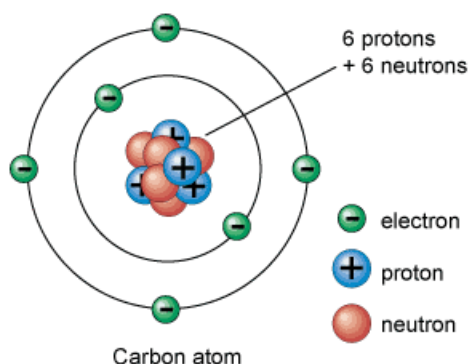
c) it's NOT PROVED (two oppositely charged objects) because of neutrality (Fig. 2, page 273); repulsion occurs even if no charge is present

CHARGED OBJECTS ATTRACT BOTH NEUTRAL AND UNLIKE CHARGES, BUT ONLY REPEL LIKE CHARGES

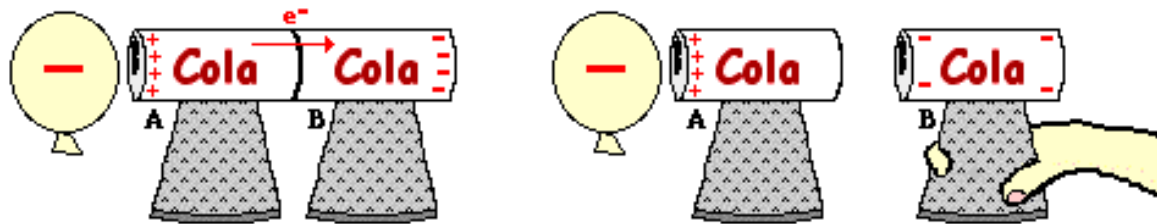
pg.273 question positive object is put near a negatively charged object they attract. So Positive attracts and Negative repels, but when a positive charged and negative charged object are brought near to each other they stick together. THE AMOUNT OF CHARGE IS THE SAME FOR A POSITIVE CHARGE (absence of an electron) OR A NEGATIVE CHARGE (an extra electron)

pg.273 #4

Draw a labeled diagram showing the structure of the atom. Indicate the kind of charge on each of the particles that make up the atom.



pg275 question 1a



The negatively charged balloon induces movement of electrons within the two pop cans. With electrons moving from Can A to Can B, the two-can system becomes polarized. Once the two cans are separated using the insulating handle, Can A has a + charge and Can B has a - charge.

when a negatively charged balloon is brought close to a positively charged can the can becomes negative.

pg. 275 question 1b- the two factors that affect the amount of static charge produced when you rub two different substances together are **touching**, because it allows only a small amount of both kinds of molecules to come close enough to transfer electrons. The other one is **rubbing**, because it brings many more molecules of one substance into contact with the molecules of another substance allowing the transfer of significantly more electrons. (DURATION OF CONTACT AND MATERIAL)

question 2) when charging by friction occurs, the substance higher in the list (for ex, acetate) always loses electrons and becomes positively charged, while the substances lower in the list (for ex, silk) gains those same electrons and becomes negatively charged.

pg. 275 question 3a) i) the charge will be negative (ACETATE BECOMES NEGATIVE BY RECEIVING ELECTRONS FROM THE FUR). ii) the charge will also be negative. (RUBBER IS NEGATIVE, COTTON BECOMES POSITIVE)

Pg. 275- question- 3b) Explain your answer in terms of the electrical model for matter.

- scientists believe that all matter is made up of atoms containing particles that possess electrical charges. (: (ELECTRONS ARE THE ONLY SUB-ATOMIC PARTICLES THAT CAN MOVE)

Pg. 279 question 1

What happens when a negatively charged object touches an uncharged pith ball on an electroscope? Use a diagram to explain your answer.

When a negative charged object touches a charged object the charged object turns neutral.

Pg.279 question 4-if a cat was combed with an ebonite comb and someone else touched the cat, what charge would that person receive from the cat's fur? The person would receive a negative charge.

Pg.279 question 6- what makes grain elevators and flour mills among the most dangerous places to work? What precautions are taken?

These are dangerous places to work because grain and grain dust are very flammable, the same is for flour. So if grain or flour catches from a spark, then, the whole elevator or mill could catch fire. Precautions that are taken to prevent that are wearing boots and shoes and clothing that don't give off sparks.

pg.. 279 2) when an object is charged by contact , what kind of charge does the object have compared with that on the object giving the charge?

Explain in terms of the model for the electrical nature of matter.

It has a negative charge . the electrons jump.

Pg.279 question 3.

Why does a spark occur when a person who is charged touches an uncharged object? Would moving the hand to the doorknob very fast prevent the spark from occurring ?

The extra electrons on your body transfer to it.

Pg 279 8-What special precautions must astronauts take to guard against static electric shocks

a) while inside the spacecraft?

make sure the oxygen supply is far away from where the people are as well as anything flammable

b) on returning to the spacecraft after a walk in space?

the static electric shocks while not affecting the astronauts could be brought in from outside the spacecraft and mess up the machinery

pg.281 question 1

explain

pg.279 question 5. when you and something else are both charged negative and they touch a shock is made. when there's a spark at a gas station, lightning, when you touch a computer when you negatively charged.