

Charging By Induction

1. An object can be charged by **friction**. If cotton comes in contact with wool, the wool _____ electrons and has a _____ charge. The cotton _____ electrons and has a _____ charge.
2. The easiest way to make an object neutral is to connect it to the _____ by a conductor called a _____.
3. If the object is negatively charged, the electrons flow from the _____ to the _____.
4. If the object is positively charged, the electrons flow from the _____ to the _____.
5. An object can also be charged by **contact**. If an object is touched by a positively charged object, the uncharged object _____ electrons and now becomes _____ charged.
6. Negative charges _____ (attract, repel) negative charges.
Negative charges _____ (attract, repel) positive charges.
7. If you approach an uncharged object with a positively charged object and ground the uncharged object, electrons will move _____ (toward, away from) the ground and the object will become _____ charged.
Charging by this method is called charging by _____.
8. Charging by induction occurs in nature. Thunderclouds have a _____ charge.
At the surface of the earth, there is a _____ charge.
Lightning moves from the _____ to the _____.

DATE:

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CHAPTER 10

Section 10.2 Review (Alternative Format)

CLASS:

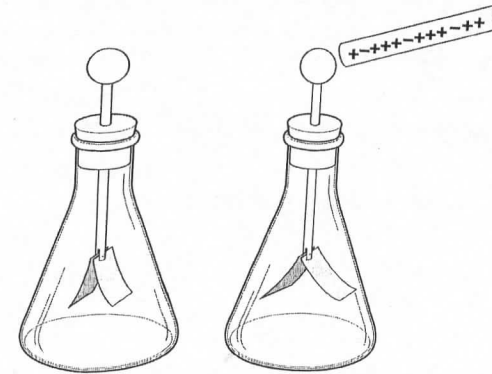
BLM 10-16

Goal • To review the concepts from Section 10.2.

1. Draw a line to match each term with its effect.

- | | |
|-------------------------|--|
| • charging by contact | • changes distribution of electrons on another object, but does not change the object's overall charge |
| • charging by friction | • generates opposite charges on the materials rubbed together |
| • charging by induction | • generates the same type of charge on the neutral object as the charged object |

2. A metal leaf electroscope is charged. A positively charged rod moves near the sphere.
a. Draw charges on the electroscope.

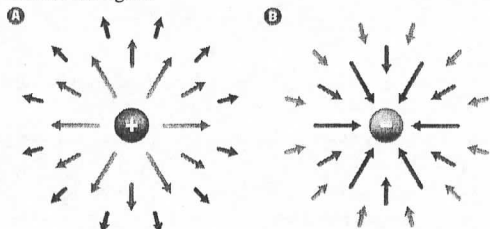


- b. The charge on the electroscope is _____ (positive / negative).
c. How would the diagram change if the sphere and rod were insulators?
A. The leaves would get closer together.
B. The leaves would move apart.
C. No change.

Explain how you know. _____

**Section 10.2 Review
(Alternative Format)**

3. Look at this figure.



The strength of an object's electric field _____ (increases / decreases) as distance increases.

4. You can charge a balloon by rubbing it against your clothing. Then you can stick the charged balloon to a wall.

a. The wall is charged by _____ (contact / friction / induction) because _____

b. The balloon eventually falls from the wall because _____

5. A negatively charged ebonite rod is held near a pith ball electroscope.

If the charge of the pith ball is positive, then the pith ball will _____.

If the charge of the pith ball is neutral, then the pith ball will _____.

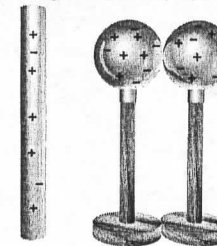
If the charge of the pith ball is negative, then the pith ball will _____.

6. You are given wool and material X. You have a pith ball electroscope.

How can you tell which material holds on to its electrons more strongly?

**Section 10.2 Review
(Alternative Format)**

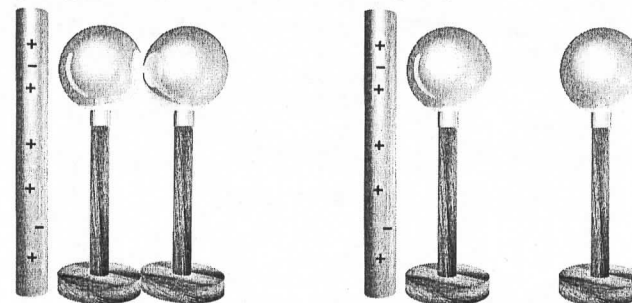
7. The diagram shows representative charges on a rod and two identical metal spheres.



a. What is the charge on the rod? _____

b. The rod is moved closer to the spheres. Draw the resulting charges.

c. One sphere is moved away. Draw the resulting charges.



d. The rod is moved away. Draw the charges on the spheres and the rod.

