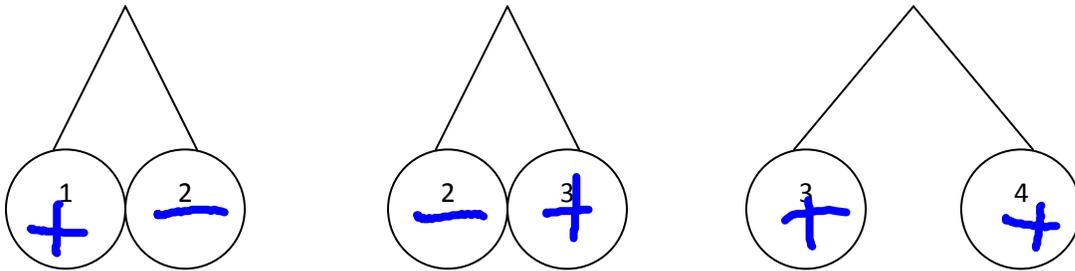
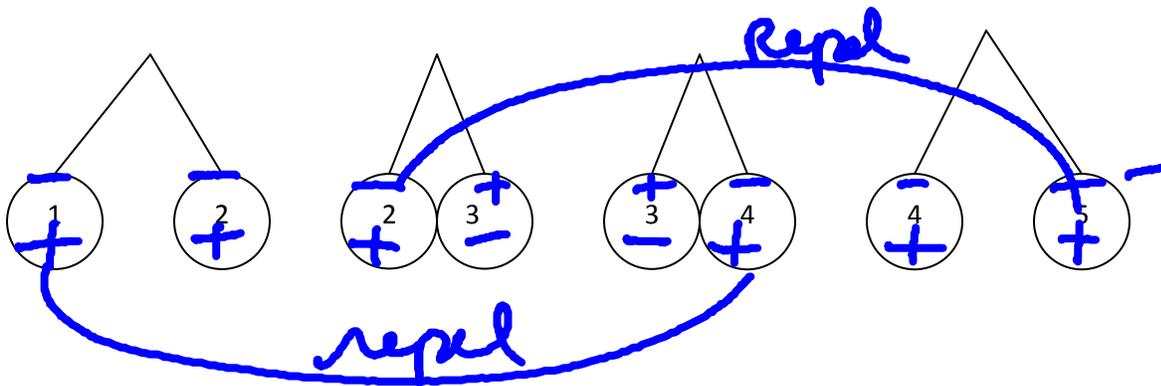


Static Electricity Class Practice

1. You are given 4 spheres that are electrically charged. If sphere 3 is positively charged, what are the charges of the other objects?



2. You have five spheres which are each electrically charged. Determine what will occur when sphere 1 and sphere 4 come into contact and when sphere 2 and 5 come into contact.



3. Three conducting spheres M, N and P are used for an experiment in static electricity. The following observations are made :

Sphere M is repelled by a glass rod which was rubbed with silk.

Spheres M and N attract each other.

Spheres N and P attract each other.

What electrical charges are there on the three spheres?

A) Positive for sphere M, negative for sphere N, negative for sphere P

B) Negative for sphere M, positive for sphere N, positive for sphere P

C) Positive for sphere M, negative for sphere N, positive for sphere P

D) Negative for sphere M, positive for sphere N, neutral for sphere P

4. When we rub a glass rod with silk, the rod becomes electrically charged. What happens during the rubbing process?

A) The glass picks up protons from the silk.

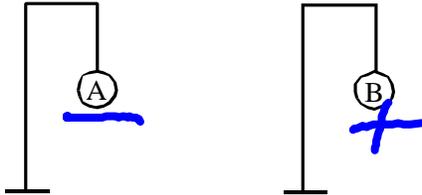
B) The glass picks up electrons from the silk.

C) The silk picks up protons from the glass.

D) The silk picks up electrons from the glass.

5. A student was given the following materials:

- a wool cloth **+**
- a vinyl ruler **-**
- two Styrofoam balls (A and B) suspended from ring stands



Using these materials, she performed a laboratory experiment consisting of five steps.

The table below lists the five steps and the results of the first three steps.

Step	Result
1. Rub the ruler with the wool cloth.	1. The wool cloth and the ruler acquire opposite charges.
2. Touch ball A with the ruler.	2. Ball A and the ruler have the same charge.
3. Touch ball B with the wool cloth.	3. Ball B and the wool cloth have the same charge.
4. Bring the ruler close to ball A, but without touching it.	4. ? Repel
5. Bring the ruler close to ball B, but without touching it.	5. ? attract

What were the results of steps 4 and 5?

- A) Result of Step 4: the ruler and ball A repelled each other.
Result of Step 5: the ruler and ball B attracted each other.
- B) Result of Step 4: the ruler and ball A repelled each other.
Result of Step 5: the ruler and ball B repelled each other.
- C) Result of Step 4: the ruler and ball A attracted each other.
Result of Step 5: the ruler and ball B repelled each other.
- D) Result of Step 4: the ruler and ball A attracted each other.
Result of Step 5: the ruler and ball B attracted each other.

6. In the laboratory, a student was given the following substances :

1. ebonite -
 2. cotton -
 3. silk +
 4. glass +
-) Repel
) attract

The student was told that when two substances from the above list are rubbed together, the one higher up in the list becomes negatively charged and the other becomes positively charged.

The student did the following :

- Rubbed the ebonite and the silk together.
- Rubbed the glass and the cotton together.
- Brought the cotton close to the ebonite.
- Brought the cotton close to the silk.

Which one of the following statements is TRUE?

A) Ebonite and cotton repel each other; silk and cotton repel each other.

B) Ebonite and cotton repel each other; silk and cotton attract each other.

C) Ebonite and cotton attract each other; silk and cotton repel each other.

D) Ebonite and cotton attract each other; silk and cotton attract each other.

7. After being rubbed on hair, a rubber balloon acquires an electrical charge. When a piece of positively charged cotton is brought close to the balloon, the two objects will attract each other. What will happen to this balloon if it is brought close to a negatively charged plastic rod and why?

A) The balloon will be repelled because it is positively charged.

B) The balloon will be repelled because it is negatively charged.

C) The balloon will be attracted because it is positively charged.

D) The balloon will be neither attracted nor repelled because it is neutral

8. The table below shows what happens when an electrically charged ruler is brought close to the following three objects: a cathode ray tube which is **negatively charged**, charged sphere 1 and charged sphere 2.

Combination	Result
Ruler is brought close to cathode ray tube.	The ray is repelled.
Ruler is brought close to sphere 1.	Sphere 1 is repelled.
Ruler is brought close to sphere 2.	Sphere 2 is attracted.

What is the electric charge on each sphere?

- A) Sphere 1 is positively charged and sphere 2 is negatively charged
- B) Sphere 1 is negatively charged and sphere 2 is negatively charged
- C) Sphere 1 is positively charged and sphere 2 is positively charged
- D) Sphere 1 is negatively charged and sphere 2 is positively charged

9. The list below arranges different substances in increasing order of their tendency to acquire electrons. When two of these substances are rubbed together, the one situated lower on the list attracts electrons from the substance above and becomes negatively charged.

Electrostatic Series Chart

Acetate	
Weak hold on electrons	→
Glass	
Ebonite	
Plastic	
Rubber	Strong
hold on electrons	

In the laboratory, a student rubs a cotton cloth with each of the following materials: ebonite, plastic, acetate and glass. He then brings the different materials together:

1. Ebonite and plastic
2. Plastic and acetate
3. Acetate and glass
4. Glass and ebonite

In which of the situations do the materials repel each other?

- A) 1 and 2 B) 1 and 3 C) 2 and 4 **D) 3 and 4**