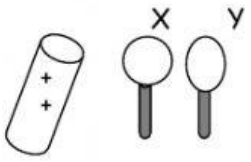
CHAPTER 24 STATIC ELECTRICITY

Activity 24.1 Multiple Choice

1. Two insulated and uncharged metal spheres X and Y are touching. When a positively charged rod is near X, the spheres are moved apart. After this action, X has a negative charge. What will be the charged on Y ?
   A. negative and smaller than that on X.
   B. negative and the same size as that on X.
   C. positive and smaller than that on X.
   D. positive and the same size as that on X.



2. An electro statically charged object will pick up small pieces of paper. Which of the following will not pick up small pieces of paper?
   A. An earth metal rod rubbed with a duster.
   B. A plastic comb pulled through dry hair.
   C. A polythene rod rubbed with a woolen cloth.
   D. A rubber balloon rubbed on a nylon shirt.

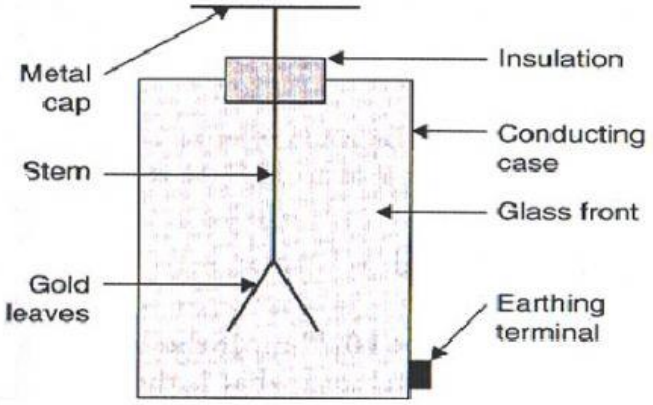
3. An object becomes positively charged when it is rubbed by a soft cloth. How will this happen?
   A. It has gain electrons
   B. It has gain protons
   C. It has lost electrons
   D. It has lost proton

4. Which of the following are best insulators?
   A. Salt water
   B. Gold
   C. Distilled water
   D. Rubber
   E. Aluminum

5. There are four charged objects: A,B,C, and D. Object A is charged positively. Object A is attracted to Object B. Object B is repelled from object C. Object C is attracted to Object D. What are the charges on Objects B, C, and D?
   A. B is negative, and C and D are positive
   B. B and C are positive, and D is negative
   C. B, C, and D are positive
   D. B, C, and D are negative
   E. B and C are negative, and D is positive

LIVEWORKSHEETS

An electroscope is a device used in electrostatic experiments and consists of a metal cap connected by a metal stem to two thin gold leaves that can freely rotate. The following picture shows the parts of an electroscope.



6. In the diagram of the electroscope, the gold leaves are standing apart and nothing is interacting with the electroscope. Which of the following best explains this observation?

A. One leaf is neutral, and the other leaf is negative.
B. One leaf is neutral, and the other leaf is positive.
C. The leaves both have opposite charges.
D. The leaves both have the same charges.
E. The leaves are both neutral.

7. Why do the two leaves of neutral electroscope go apart when a positive rod is brought near the cap (but not touching it) ?

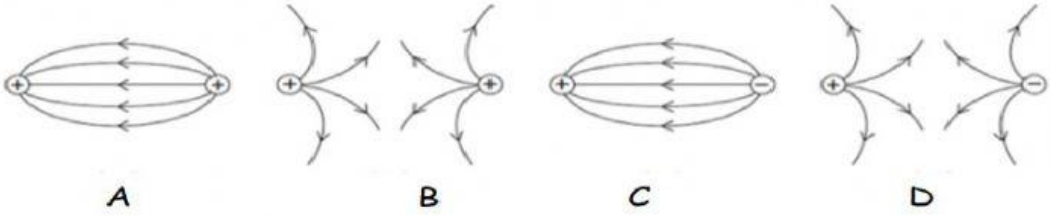
A. Protons in the electroscope flow toward the rod, leaving the leaves negative.
B. Protons in the electroscope flow away from the rod, giving the leaves a positive charge.
C. Electrons in the electroscope flow away from the rod, giving the leaves a negative charge.
D. Electrons in the electroscope flow up toward the rod, making the positive leaves repel.
E. The leaves will actually come together because neutral objects are attracted to charged objects.

8. The electrons in the circuit flows towards the _____.

A. positive charged end
B. neutral charged end
C. negative charged end
D. cells

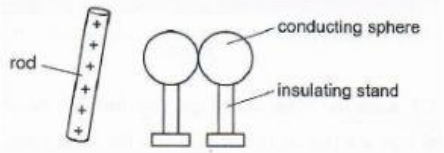
LIVEWORKSHEETS

9. Which diagram represents the electric field lines between two small electrically charged spheres?

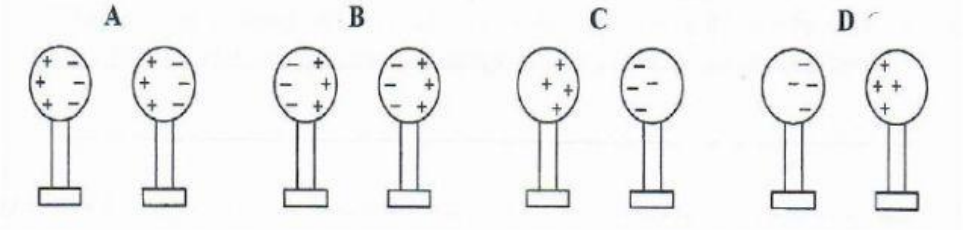


A B C D

10. The diagram shows a positively charged rod close to two conducting spheres mounted on insulating stands. The spheres are in contact.



The spheres are then separated and finally the charged rod is removed. Which diagram shows the charges on the spheres?



11. A leaf electroscope is neutral. As a negative charge is brought close to the electroscope, the leaves spread apart because the approaching negative charge_____.

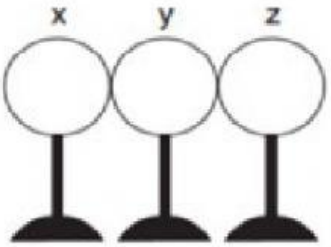
A. Attracts and pulls electrons away from them.
B. Attracts and pulls protons away from them.
C. Pushes electrons down onto them.
D. Pushes protons down onto them.

12. As you look around the room, you observe two other balloons being pushed away from each other. The repulsion of these balloons from one another provides evidence that _____.

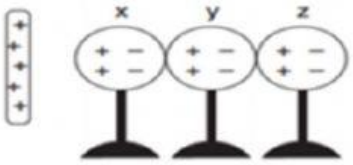
A. Both balloons are charged with the same type of charge.
B. Both balloons are charged with the opposite type of charge.
C. Both balloons are charged -either with the same type or opposite type of charge.
D. Only one of the balloons is charged; the other is neutral.

LIVEWORKSHEETS

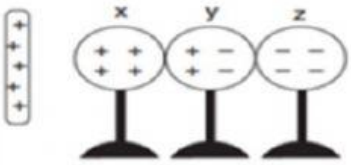
13. The diagram below shows three neutral metal spheres x,y, and z in contact and on insulating stands.



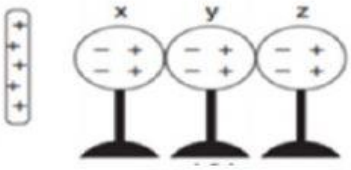
Which diagram best represents the charge distribution on the spheres when a positively charged rod is brought near sphere x, but does not touch it?



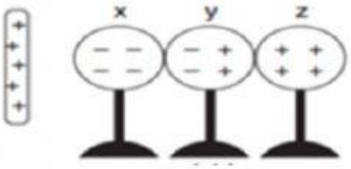
A



C



B



D

14. A plastic rod is charged negatively. Which of the following explains this?

A. The rod gained electrons
B. The rod lost electrons
C. The rod gained protons
D. The rod lost protons

15. If you comb your hair and the comb becomes negatively charged, _____.

A. Electrons were transferred from the comb onto your hair.
B. Electrons were transferred from your hair onto the comb.
C. Protons were transferred from the comb onto your hair.
D. Protons were transferred from your hair onto the comb.

16. Insulators are different than conductors because insulators_____.

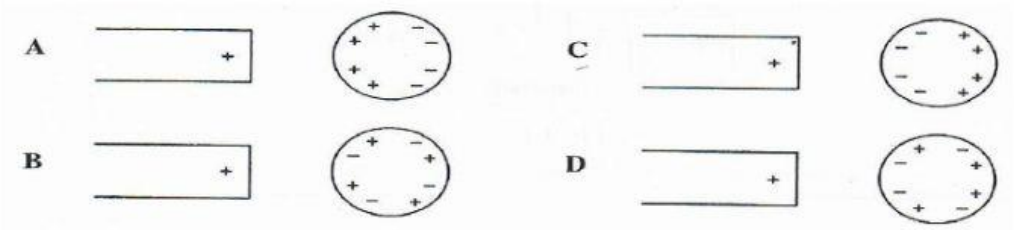
A. Do not contain electrons or protons
B. Do not contain any charge
C. Have a weaker affinity for electrons
D. Do not allow charge to freely move

LIVEWORKSHEETS

17. When a car battery is "dead", it does not start the car. What does the battery gain when it is recharged?

A. current B. energy C. power D. resistance

18. A positively charged rod is brought close to an insulated metal sphere. Which diagram best shows the induced charges on the sphere?



19. The process of neutralizing the charged spheres as depicted above is known as _____.

A. charging B. polarization C. induction D. grounding

20. Why are electrical appliances earthed?

A. It is to supply electrical to the earthed.

B. It is to get additional electricity from the earthed.

C. It is to cause an electric shock to anyone living nearby.

D. It is to prevent electric shocks.

21. In an electrostatics experiment, two pieces of transparent tape attract each other. What is the best conclusion one can draw from this observation?

A. At least one of the pieces of tape is charged.

B. One of the pieces of tape is neutral.

C. The two pieces of tape are oppositely charged.

D. The two pieces of tape have the same charge.

E. Both pieces of tape are neutral.

22. A negative object is brought near the left side of a conducting sphere but does not touch it. Meanwhile, a person briefly touches the right-hand side of the sphere. What happens to the sphere in this process?

A. The sphere gains electrons from the person.

B. The sphere gains protons from the person.

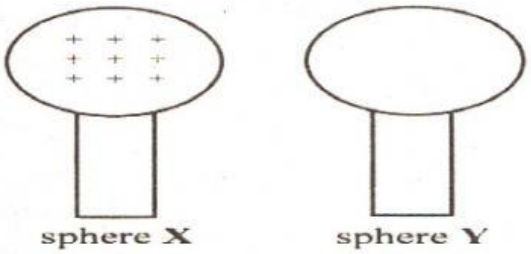
C. The sphere loses electrons to the person.

D. The sphere loses protons to the person.

E. The sphere remains neutral.

LIVEWORKSHEETS

23. The diagram shows two identical metal spheres, X and Y. Sphere X has positive charge and sphere Y is uncharged.



A student, who is earthed, touches sphere X and moves it close to, but not touching sphere Y. What is the nature of the charges left on the two spheres?

	Sphere X	**Sphere Y**
A	Positive	Positive
B	No charge	No charge
C	Positive	Negative
D	Negative	positive

LIVEWORKSHEETS