Science

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(Chapter – 15) (Some Natural Phenomena)

(Class – VIII)

Exercises

Question 1:

Which of the following cannot be charged easily by friction?
(a) A plastic scale
(b) A copper rod
(c) An inflated balloon
(d) A woollen cloth.

Answer 1:

(b) A copper rod

Question 2:

When a glass rod is rubbed with a piece of silk cloth the rod
(a) and the cloth both acquire positive charge.
(b) becomes positively charged while the cloth has a negative charge.
(c) and the cloth both acquire negative charge.
(d) becomes negatively charged while the cloth has a positive charge.

Answer 2:

(b) becomes positively charged while the cloth has a negative charge.

Question 3:

Write T against true and F against false in the following statements:
(a) Like charges attract each other (T/F)
(b) A charged glass rod attract a charged plastic straw (T/F)
(c) Lightning conductor cannot protect a building from lightning (T/F)
(d) Earthquakes can be predicted in advance (T/F)

Answer 3:

(a) Like charges attract each other (False)
(b) A charged glass rod attract a charged plastic straw (True)
(c) Lightning conductor cannot protect a building from lightning (False)
(d) Earthquakes can be predicted in advance (False)

Question 4:

Sometime, a crackling sound is heard while taking off sweater during winters. Explain.

Answer 4:

Normally, Sweater is made of wool and the other inner clothes like shirts are made up of cotton and synthetic fibres. Due to friction among these, static charge gets accumulated on the sweater. While taking off sweater, an electric discharge occurs between sweater and the body which results in forming of sparks and crackling sound.

Question 5:

Explain why a charged body loses its charge if we touch it with our hand.

Answer 5:

Human body is a good conductor of electricity. A charged body loses its charge when we touch it with hand because the charges get transferred through our body to earth. This process of transferring of charges from charged body to earth is known as earthing.

Question 6:

Name the scale on which the destructive energy of an earthquake is measured. An earthquake measures 3 on this scale. Would it be recorded by a seismograph? Is it likely to cause much damage?

Answer 6:

Richter Scale measures the destructive energy of an earthquake. Yes, seismograph can measure an earthquake of magnitude 3 on *Richter Scale*. It is of low intensity and will not cause any damage.

Question 7:

Suggest three measures to protect ourselves from lightning.

Answer 7:

Safety Measures during Lightning:

- Open space is dangerous. Take cover under a building.
- Thunder storm is an indication to rush for safer place.
- Once thundering stops, move out to an open place.

Question 8:

Explain why a charged balloon is repelled by another charged balloon whereas an uncharged balloon is attracted by another charged balloon?

Answer 8:

Two charged balloons have similar charges on the surfaces. Since like charges repel each other, that's why one charged balloon is repelled by another charged balloon. When an uncharged balloon is brought near a charged one, the uncharged balloon acquires some opposite charge. Since unlike charges attract each other, therefore a charged balloon attracts an uncharged one.

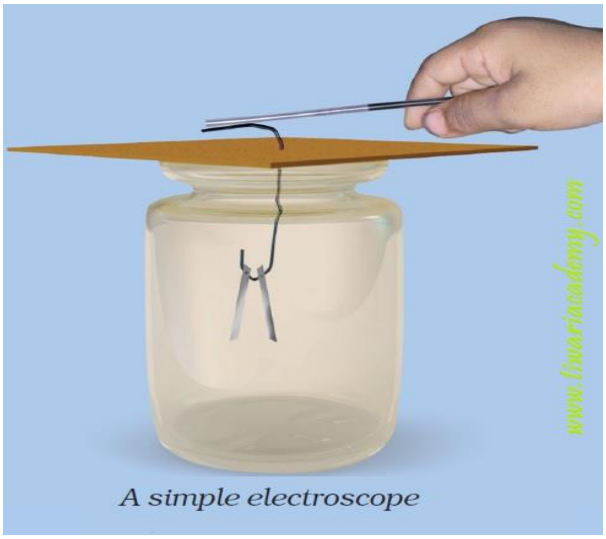
Question 9:

Describe with the help of a diagram an instrument which can be used to detect a charged body.

Answer 9:

Take an empty jam bottle. Take a piece of cardboard slightly bigger in size than the mouth of the bottle. Pierce a hole in it so that a metal paper clip could be inserted. Cut two strips of aluminium foil about 4 cm × 1 cm each. Hang them on the paper clip as shown. Insert the paper clip in the cardboard lid so that it is perpendicular to it. Charge a refill and touch it with the end of the paper clip.

The aluminium foil strips receive the same charge from the charged refill through the paper clip. The strips carrying similar charges repel each other and they become wide open. Such a device can be used to detect whether an object is carrying charge or not. This device is known as *electroscope*.



A simple electroscope

Question 10:

List three states in India where earthquakes are more likely to strike.

Answer 10:

Three states in India are Gujrat, Rajasthan and Himachal Pradesh.

In India, the areas most threatened are Kashmir, Western and Central Himalayas, the whole of North-East, Rann of Kutch, Rajasthan and the Indo – Gangetic Plane. Some areas of South India also fall in the danger zone.

Question 11:

Suppose you are outside your home and an earthquake strikes. What precaution would you take to protect yourself?

Answer 11:

During the earthquake, I would take the following precaution:

- I would try to find a clear spot, away from buildings, trees and overhead power lines. Drop to the ground.
- If I am in a car or a bus, do not come out. Ask the driver to drive slowly to a clear spot. I will not come out till the tremors stop.

Question 12:

The weather department has predicted that a thunderstorm is likely to occur on a certain day. Suppose you have to go out on that day. Would you carry an umbrella? Explain.

Answer 12:

Carrying umbrella is not a good idea at all during thunderstorms. As during the thunderstorm, the speed of wind will blow away the umbrella.