

Chapter-15

Some Natural Phenomena

Select the correct option in Questions 1 and 2.

Que-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. ☐

Que-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. ☐

Que-3) write T against true and F against false in the following statements.

- (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

Que-4) Sometimes, a crackling sound is heard while taking off a sweater during winters. Explain.

Ans (4) we know that some objects can be charged by rubbing with other objects. A woollen sweater while taking off, comes in contact with the surface of inner clothes of body. Due to this electric discharge occurs between them. Some small amount of energy is released by this which can be heard as crackling sound.

Ques (5) Explain why a charged body loses its charge if we touch it with our hand.

Ans As we know our body is good conductor of electricity, so, when we touch a charged body with our hands, the excess amount of static charges get transferred to ground through our body. Thus, the charged body loses its charge and becomes neutral.

Ques (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?

Ans The scale on which the destructive energy of an earthquake is measured is name as richter scale.

yes, the reading 3 will be recorded by seismograph because this reading comes under the range of richter scale.

As we know really destructive earthquakes have magnitudes higher than '7' on the

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Richter scale and we have given reading 3, according to the fact given above reading 3 will not cause much damage.

Ques (7) Suggest three measures to protect ourselves from lightning.

Ans The measures to protect ourselves from lightning are as follows :-

(i) During lightning we should not stay in any open place.

(ii) we should not stay near by poles or any other metal objects as well as trees.

(iii) A house or a building is a safe place. If we are traveling by a car or bus, we are safe inside with windows and doors closed.

Ques (8) Explain why a charged balloon is repelled by another charged balloon whereas an uncharged balloon is attracted by another charged balloon?

Ans As ~~the~~ the balloons are charged with like charges and we know like charges repel each other, so the charged balloons get repelled each other.

An uncharged balloon means, no charge is there over the balloon's surface, so once it is placed near by a charged balloon, transferring of charges occurs from charged balloon to uncharged balloon and they seem to be attracted.

Ques-19) Describe with the help of a diagram an instrument which can be used to detect a charged body.

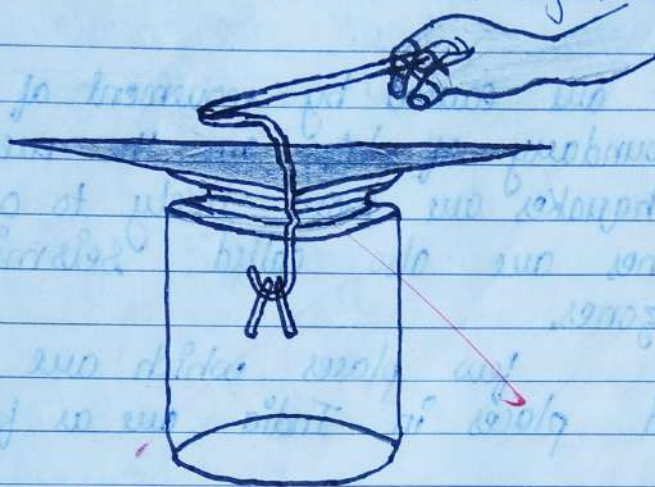


Fig 15.4 : A simple electroscope

The arrangement in above figure consists of a charged refill, a paper clip, two strips of aluminium foil, a glass jar and a cardboard.

According to arrangement, once we take the charged refill to touch the paper clip above cardboard, the transfer of charges occur through paper clip towards the Aluminium foil strips, so both the strips get same charges (as we know metal is a good conductor). Once strips get charges they repel each other which shows that like charges are there on the aluminium strips.

In such a way this arrangement acts like an instrument which can be used to detect a charged body.

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Ques (10) List three states in India where earthquakes are more likely to strikes.

Ans Earthquakes are caused by movement of ~~plates~~ plates, the boundary of plates are the weak zones, where earthquakes are more likely to occur, the weak zones are also called seismic or fault zones.

few places which are most threatened places in India are as follows :-

- (i) Kashmir
- (ii) Rann of Kutch
- (iii) Rajasthan
- (iv) Indo-gangetic plane.

Ques (11) Suppose you are outside your home and an earthquake strikes. what precaution would you take to protect yourself?
Following precaution will be taken by us :-

(1) we should find a clear spot away from buildings, trees and overhead power lines.

(2) If we are in a car or a bus, do not come out till the tremors stop.

Ques (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.

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Ans $\Rightarrow$ No, we should not carry an umbrella in a thunderstorm because electric discharge from the cloud can travel through ~~metal~~ metallic rod of the umbrella. This may give an electric shock to the person who is carrying it. So, we should not carry an umbrella during lightning.