

# Chapter 15: Some Natural Phenomena

## Multiple Choice Questions

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1. (a)      2. (b)

## Multiple Choice Questions

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1. (c)      2. (d)

## EXERCISE

### A. Tick (✓) the correct options.

1. (d)      2. (a)      3. (b)      4. (c)      5. (d)      6. (a)  
7. (c)      8. (a)

**B. Look at the figure [Fig. (a)] given alongside and tick (✓) the correct options.**

1. (b)
2. (a)

**C. Fill in the blanks.**

- |                     |                     |              |
|---------------------|---------------------|--------------|
| 1. electric current | 2. static           | 3. faults    |
| 4. seismic waves    | 5. repel, attract   | 6. Repulsion |
| 7. induction        | 8. lightning strike |              |

**D. Very Short Answer Questions.**

1. A body is said to be charged when it acquires electric charges by rubbing or by any other method from another body.
2. Seismograph
3. The loud sound produced during lightning is called thunder.
4. A comb rubbed on hair attracts pieces of paper because a kind of force is produced between them which is called electrostatic force.
5. Epicentre
6. Tsunami
7. Charged

**E. Short Answer Type-I Questions.**

1. Charging an object by rubbing it with another object is called charging by friction.
2. An earthquake is a sudden shaking of the earth's crust which lasts for a very short time.
3. The force exerted by a charged body on another charged or uncharged body is known as electrostatic force.
4. We say that repulsion is a sure test of charge on a body because when the body being tested is repelled by a charged body, we are sure that body under examination is charged and has the same charge as on the charged body.
5. Storms, cyclones, lightning and earthquakes
6. When an ebonite rod is rubbed with wool, it gets negatively charged.
7. Benjamin Franklin used a kite attached with silk string, an iron key, a thin metal wire and a Leyden jar.
8. The point on the surface of the earth, directly above the focus of an earthquake is called an epicentre.

**F. Short Answer Type-II Questions.**

1. The three causes of earthquake are –
  - (i) Movement of the tectonic plates
  - (ii) Volcanic eruptions
  - (iii) Dislocation (or faults) of the crustThe three effects of earthquake are –
  - (i) Human-made structures like buildings, railway tracks, roads, bridges, dams, etc., get severely damaged in earthquake. People can get trapped inside the collapsed structures and many may die.

- (ii) Fire often breaks out following earthquakes which can be caused by sparking from electrical short circuits.
  - (iii) Groundwater pipes usually rupture, totally disrupting municipal water supply systems.
2. The harmful effects of lightning are –
    - (a) It can cause fire and shatter buildings resulting in lot of destruction and damage to the property.
    - (b) It can burn trees and also cause forest fires.
    - (c) It injures or sometimes even kills animals and people instantly.
  3. (a) Sameer and Sachin did not take shelter under the tree because trees provide a good conducting path for lightning.
    - (b) Yes, he did the right thing to save himself and his brother's life.
  4. Precautions to be taken during an earthquake:
    - (a) Move to an open area immediately.
    - (b) Move away from buildings, trees, bridges, flyovers or overhead electric cable lines or any other structures that can collapse.

**G. Long Answer Questions.**

1. (a) An electroscope is an instrument used for detecting electrical charge and its nature on a body.
  - (b) See fig. (a)
  - (c) Uses of a gold leaf electroscope are:
    - (i) Detection of charge
    - (ii) To identify the nature of charge

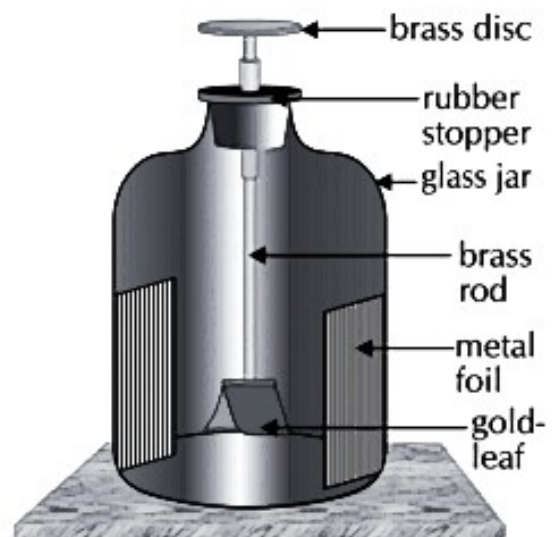


Fig. (a) Gold-leaf electroscope

2. (a) A cloud has the negative charges concentrated at the base and positive charges concentrated at its upper region. When a charged cloud passes over a tall building or a tall tree, it induces an opposite charge on them. The negative charges at the base of the clouds pull the positive charges induced on the tall buildings upwards at a tremendous speed. As soon as the negative and positive charges connect, a continuous path is formed from the cloud to the tall building or a tree on the ground.

The large amount of negative charges accumulated in the clouds rush down this path, giving rise to an electric discharge in the form of lightning strike.

- (b) A lightning conductor is a device which is fixed on the top of tall buildings to protect them from damage due to lightning.
- (c) When the lightning strikes, the lightning conductor provides an easy path for the charge to pass through to the earth and thus, protects the building.
- (d) Safety measures to be taken during thunderstorm are:
  - (i) Do not take shelter under a tree because trees provide a good conducting path for lightning.
  - (ii) Do not take baths or showers during storms, as water is an excellent conductor of electricity.