KALPAVRUKSHA MODEL SCHOOL

Class: VIII **Sub: Physics** **Date: 23.07.2021**

Topic: Some natural phenomena

SOME NATURAL PHENOMENA

I. Define the following:

1. protons: The positively charged particles in an atom.
2. electrons: The negatively charged particles in an atom.
3. discharging: When a charged object comes in contact with a body which is not charged, electric charges jump from the charged body to the uncharged body till the charges on the two bodies are equalized. This process is referred to as discharging.
4. earthing: The process of discharging atmospheric electricity through a metallic conductor into the earth.
5. earthquake: A shock or series of shocks due to sudden movement of crustal rocks of the earth.
6. plate Techtonics: The theory that the surface of the Earth is made of plates that move with respect to one another is called plate tectonics.
7. seismic Zones: Weakness in the earth's crust where an earthquake may occur.
8. seismograph: An instrument which detects and records the intensity of seismic waves.
9. seismogram: A typical seismological output is called a seismogram.
10. focus (with respect to earthquake): The point underground where the earthquake originates.
11. epicentre: A point directly above the seismic focus of an earthquake when the shock waves reach above the earth's crust.
12. seismic waves: The waves generated in the lithosphere due to sudden shifting of crustal rocks.

A. Short answer questions:

1. Name the two charged particles in an atom.
Ans: The two charged particles in an atom are protons and electrons.

2. Give any two methods of charging an object.
Ans: Charging by friction and charging by conduction are the two methods of charging an object.

3. Why should we protect ourselves during a thunderstorm?
Ans: Thunderstorms can cause large-scale destruction of life and property.

4. Name an earthquake-prone area in India.
Ans: Rann of Kutch is an earthquake-prone area in India.

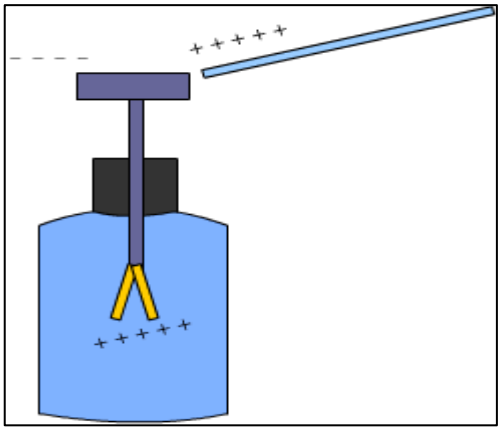
5. What is seismology?

Ans: The branch of science which deals with the study of earthquakes.

B. Long answer questions:

1.Describe the construction and working of an electroscope.

Ans: Electroscope is a simple device which is used to test the presence of charge in an object. The gold-leaf electroscope was developed in 1787 by a British scientist named Abraham Bennet. Gold and silver are among the best conductors of electric current and hence leaves of these metals are used in electroscope.

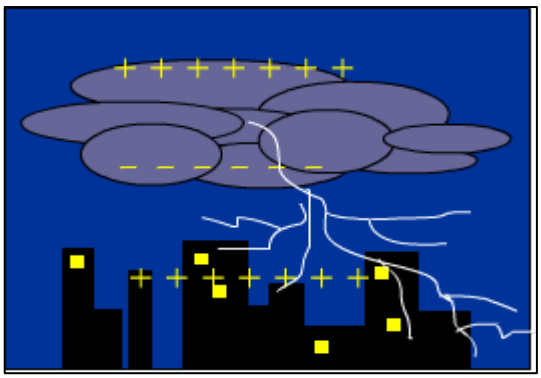


Structure of Electroscope: It is made of a glass jar. A vertical brass rod is inserted into the jar through a cork. The top of the brass rod has a horizontal brass rod or a brass disc. Two gold leaves are suspended from the brass rod; inside the jar.

Working of Electroscope: When the brass disc of the electroscope is touched with a charged object, electric charge gets transferred to the gold leaf through the rod. This results in the gold leaves moving away from each other. This happens because both the leaves have similar charges.

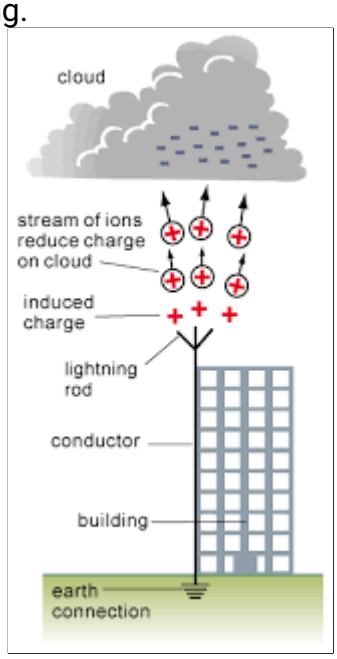
2.Explain briefly how lightning occurs.

Ans: : A cloud is a visible mass of condensed water vapour floating in the atmosphere. When a storm develops the strong winds move up through the cloud .The strong winds make water droplets rub against each other, this rubbing produces extremely large electric charges. The smaller water droplets acquire positive charge and being lighter move up with the help of rising winds, the larger water droplets being heavy acquire negative charge. When the accumulation of charges becomes sufficiently large it starts flowing through air with high speed which is sufficient to break the insulation of air. As a result, negative and positive charges meet, producing streaks of bright light and sound. This process is called an electric discharge (lightning).



3.Explain how a lightning conductor works.

Ans: Lightning conductor is a device used to protect buildings from the damaging effects of lightning. It is made of a thick strip of metal. Lightning conductor is made of a thick metal rod. The top end of the lightning conductor is pointed like a sharp spike and fixed on the highest point of the building the lower end is joined to the metal plate and buried deep inside the ground. If lightning strikes it hits the top of the conductor instead of the building, then the lightning conductor provides an easy and direct path for the lightning bolt to pass to the ground without affecting the building.



4.Write any two safety measures to be taken during lightning.

Ans: The following measures are taken to protect from lightning:

a) No open space is safe during lightning and thunderstorms, if you are in open space rush to safer places to house.

b) When in open space, never take shelter under a tree.