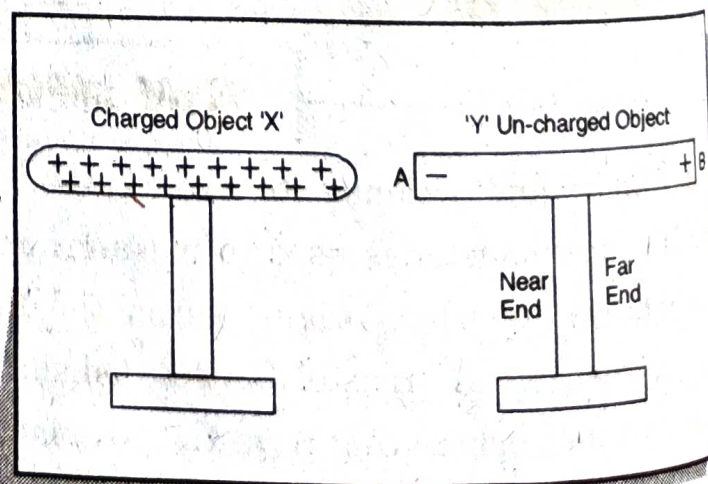


INTEXT QUESTION-ANSWERS

Questions

Q. 1. What is electrostatic induction ?

Ans. Electrostatic Induction : *If an uncharged object is placed near a charged object, an opposite charge is induced at the near end of the uncharged object and an equal charge is induced at the far end, as long as it is kept near the charged object. This is called electrostatic induction.*



Q. 2. If you place a positively charged rod near an uncharged rod; which charge is present on the near end of uncharged rod ?

Ans. A negative charge (-) of opposite nature will be produced at the near end of the uncharged rod.

TEXTBOOK EXERCISES (SOLVED)

(A) Fill in the Blanks

1. Covid-19 is a disease.
2. On rubbing two bodies we get..... and charges.
3. An is the rapid spread of a disease in a large population in a particular area.
4. Air in motion is called
5. An uncharged body can be charged by

Ans. 1. pandemic, 2. positive, negative 3. endemic, 4. wind, 5. rubbing.

(B) Write True (T) or False (F)

1. Cyclones, hurricanes and typhoons are all tropical storms.
2. During lightning and thunder we should stand under a tall tree or an electric pole.
3. Lightning Conductor is used to save tall buildings and towers from lightning.
4. The speed of wind is measured by seismograph.
5. Do not use an umbrella during lightning.

Ans. 1. (T), 2. (F), 3. (T), 4. (F), 5. (T).

(C) Choose the Correct Answer

1. Which of these are epidemic ?
(a) Dengue (b) Swine flu
(c) Cholera (d) All of the above.

Ans. (d) All of the above.

2. It is not an epidemic but a Pandemic :

- (a) Dengue in Delhi
- (b) Covid-19
- (c) Plague of Bengal
- (d) Drought in Ethiopia.

Ans. (b) Covid-19.

3. The frequency of Earthquake is measured by :

- (a) Barometer
- (b) Anemometer
- (c) Seismograph
- (d) Lactometer.

Ans. (c) Seismograph

4. Charge is produced by transfer of :

- (a) Electrons (b) Protons
- (c) Atoms (d) Neutrons.

Ans. (a) Electrons.

5. During lightning and thunder we should take shelter :

- (a) Under a tall tree
- (b) Near an electric tower
- (c) Inside a building
- (d) Under an umbrella.

Ans. (c) Inside a building.

(D) Match Column 'A' with Column 'B'

Column 'A'	Column 'B'
1. In 2020 the pandemic that hit the whole world	(a) Gold leaf electroscope
2. Cyclone that hit Orissa in May 2020	(b) Lightning
3. When two charged clouds approach each other it cause	(c) Hypocenter
4. This is used to detect charge on a body	(d) Corona
5. Point inside the Earth where Earth-quake originates.	(e) Amphan

Ans.

Column 'A'	Column 'B'
1. In 2020 the pandemic that hit the whole world	(d) Corona
2. Cyclone that hit Orissa in May 2020	(e) Amphan
3. When two charged clouds approach each other it cause	(b) Lightning
4. This is used to detect charge on a body	(a) Gold leaf electroscope
5. Point inside the Earth where Earth-quake originates.	(c) Hypocenter

(E) Very Short Answer Type Questions

Q. 1. What is an Epidemic ?

Ans. Epidemic : *It is a disease that affects many organisms of a species in a particular area for a period of time, such as dengue, plague, cholera, chikungunya, swine flu, etc.*

Q. 2. Define wind.

Ans. Wind : *Moving air is called wind. This leads to evaporation and transpiration from the surface of plant leaves. Wind movement is measured with an anemometer.*

Q. 3. Where do the cyclones originate which hit the west-coast of India ?

Ans. The cyclones that hit the western coasts of India originate from the Arabian Sea.

Q. 4. Name two methods to charge an uncharged body.

Ans. Methods of charging an uncharged object : (1) by friction, (2) by

means of electrical induction, (3) by contact with a charged object.

Q. 5. Define epicenter of an Earth quake.

Ans. Epicentre : The vibration generated at the hypocentre in the earth's crust first reaches the surface of the earth at the epicentre. The huge damage from earthquake occurs here. The epicenter is located just above the hypocenter.

(F) Short Answer Type Questions

Q. 1. What is pandemic ? Name any two pandemics.

Ans. Pandemic : This is a disease that spreads in the largest area of the world and causes the death of millions of people. The corona virus (SARS-COV-2) produced in the laboratory of the Wuhan city of China became uncontrollable, which caused the disease

called Covid-19. It spread to almost all the countries of the world and caused the death of millions of people.

Q. 2. What is epidemic ? Give examples.

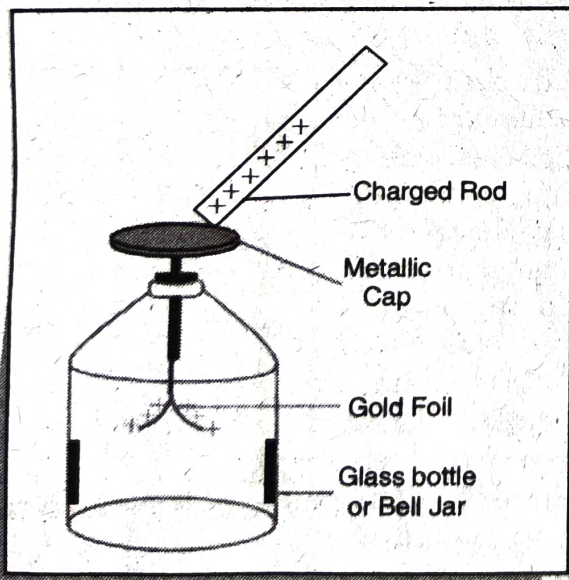
Ans. Epidemic : It is a disaster or disease that affects many organisms of a species in a particular area for a period of time, such as dengue, plague, cholera, etc.

Q. 3. Draw a labelled diagram of Gold Leaf Electroscope. Give its construction.

Ans. Gold Leaf Electroscope : This is an instrument through which the presence of charge on an object can be detected.

Principle : Charges of similar nature repel each other. But charges of unlike (opposite) nature attract each other.

Construction : It consists of a wide-mouthed glass bottle or belljar with a wooden base. It has a cork with hole in its mouth through which a metal rod passes. Two parallel gold foils are attached to the lower end of the metal rod and a circular metal plate or knob is attached to the upper end of the rod coming out of the Belljar. (See image) Gold foils are pasted on the walls of the disc.



Determining the charge on an object using an electroscope : By touching the given object to the metal plate of the electroscope, the charge of the object is transferred to the gold foils through the plate

and the metal rod. Due to the same charge on both the foils, the foils push apart each other, due to which the foils are opened.

Q. 4. Write any three safety measures during lightning.

Ans. 1. When a light thunder or lightning is seen in the sky, run to a safe place where the flow of celestial electric charges cannot reach the earth, for example, take shelter inside a building and shut off the power supply by closing the windows and doors of the building.

2. If you are traveling in a bus or car, take the vehicle off the road and get out, and if there are thundering clouds, do not use an umbrella, even if it is raining and stay at a lower place.

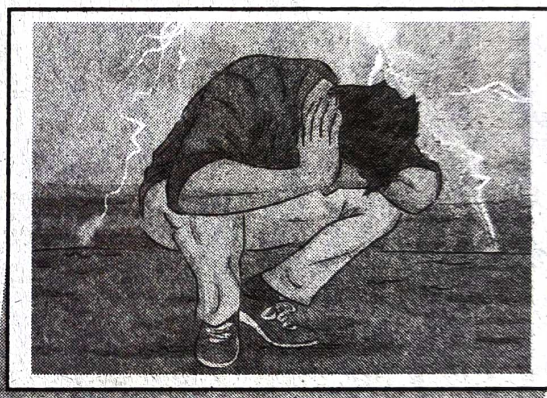


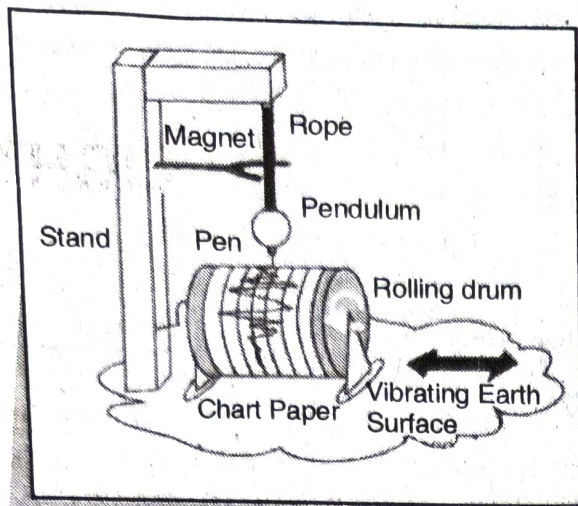
Fig. Sitting position at the time of Lightning

3. If there is lightning or thunder in the sky and you are in the open, sit with your head on your knees in such a way that your body size appears smaller as shown in the diagram.

Q. 5. How does a Seismograph work ?

Ans. Seismograph : It is a device which is used to record the frequency of earthquake waves and the record is obtained in the form of a graph. Earthquake intensity is measured on the Richter scale. The earthquakes with magnitude greater than 7 are very destructive.

Working of Seismograph : The tremors generated from the hypocenter under the earth's crust, reach the epicenter on the



earth's surface which is just above the hypocenter and send waves in the surrounding area. These are called earthquake waves or Seismic waves. These waves are recorded with a seismograph device. This device consists of a vibrating drum, at the front of this drum a pen or ink pencil is attached that touches graph paper wrapped around a roller and it leaves ink marks over the graph paper. During earthquakes, the drum moves up and down or back and forth, from which a record of vibrations is obtained in the form of a graph.

(G) Long Answer Type Questions

Q. 1. Write some precautions to minimize damage during an Earthquake.

Ans. Precautions to reduce damage during earthquake : The loss of life and property due to earthquake can be reduced by following some precautions given below.

1. Before constructing a building, advice should be sought from experts who have knowledge of constructing earthquake resistant buildings. One such organization is the Central Building Research Institute, Roorkee. Fire extinguishers must be installed in the building because fires often break out during earthquakes.
2. Cabinets and shelves inside the houses should be fixed to the wall so that these could not fall due to earthquake shocks.
3. Wall clock, photo frame, water heater,

large heavy decorative pictures/ paintings on the wall etc. should be hung firmly so that they do not fall due to earthquake shocks.

4. Big buildings should not be constructed in places where tectonic plates are joined under the earth.
5. If you are traveling in a car or bus when an earthquake occurs, slow down the vehicle and stop the vehicle on the side of road and stay inside the vehicle.
6. If you are at home when an earthquake occurs, take shelter under a big table as soon as you feel the shock and stay there until the earthquake is over. If you are in bed when an earthquake strikes, do not get down and cover your head with a pillow.

Q. 2. With the help of labelled diagram, explain the working of lightning conductor.

Ans. Lightning Conductor : This is a device used to protect tall buildings from lightning. It is made up of conducting metal in the shape of a trident which is connected with a copper wire. The lower end of the wire is connected with a copper plate which is buried under the earth (see figure).

Working System : A lightning conductor protects the building against lightning in two ways :

(i) During lightning, when a charged cloud passes over a lightning conductor, opposite charges are produced at its ends. Due to its pointed end, it does not accumulate charges and emits these charges in the atmosphere. These charges neutralize the charges of the clouds, thereby reducing the chance of lightning.

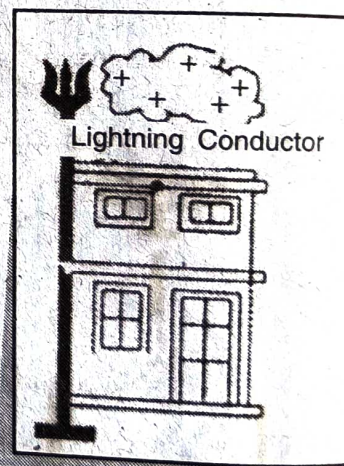


Fig. Lightning Conductor

(ii) If there is a lightning discharge, the discharge is easily dissipated into the earth by the lightning conductor and no damage to the building occurs.