

## Chapter- 14

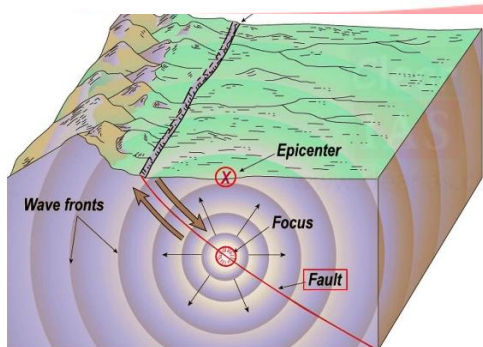
# NATURAL DISASTERS

**STUDY NOTES****Let's Learn**

- Whenever life is in harmony with nature things in to be smooth and pleasant.
- When living things on our become nature's fury we say that a natural disaster has happened.
- Natural disasters may destroy a part of life and property.
- Some such disaster which might affect our lives are earthquakes, volcanoes, tidal waves and drought.

**Earthquakes:**

- An earthquake is a sudden shaking of the ground caused by movements or vibrations deep inside the earth.
- These vibrations release great energy and can cause the ground to quiver.

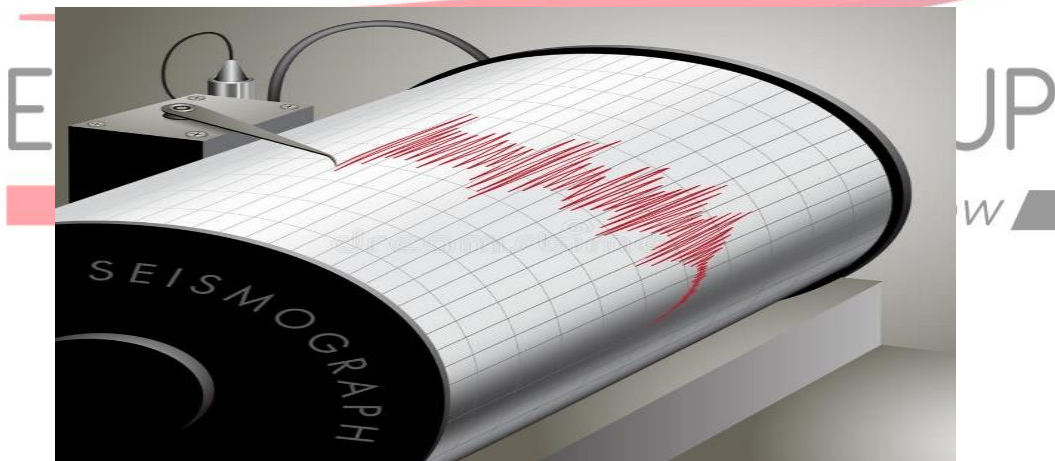
**Vibration inside the earth****Buildings are collapsed during an earthquake**

- Earthquakes of high intensity often cause great destruction on the earth's surface.
- The earth's upper layer, the crust, is made of large and small plates.
- The layers of the earth under the plates are hot and in a molting state because the core below is extremely hot.
- These layers under the place are constantly moving.
- Usually such movements cause the plates to slide smoothly against each other.
- However, at times the movements between the plates can be sudden giving rise to earthquakes.

- When the ground shakes, houses, buildings and bridges shake.
- When an earthquake lasts for some time, structures scatter, roads crack and communication systems collapse. There is loss of life and property.



- Earthquakes are measured on the Richter scale. The scale was invented by Charles Richter in 1935.
- The Richter scale starts from magnitude 1 and upward. Earthquakes of magnitude 1 or 2 can hardly be felt but those 3 or 4 can be felt.
- The ones that measure 5 or 6 cause major damage.
- Earthquakes generate waves that travel all over the Earth.



### Seismograph

- They can be detected with an instrument called a seismograph.
- People who study of earthquakes are called seismologists.
- They tried to predict earthquake so that the people likely to be affected have time to move to a safer place.
- The seismograph consists of a frame, a spring, a stone, a drum, paper and a pen.
- As the earth trembles the spring moves the pen over the paper wrapped on the drum.
- This reading or pattern obtained on the paper is called seismogram.

**Volcanoes:**

- The word 'volcano' comes from the name Vulcan, the Roman God of fire.
- A volcano is an opening on the earth's surface, which allows hot, molten rock, ash and gases to escape from below the surface.
- These burst out of the crossed through a vertical tunnel called a **vent**.
- This hot molten rock is called Lava.
- The lava spreads over the land sometimes covering entire region.
- When lava is below the earth's surface it is called magma.



- Some volcanoes are formed under the sea.
- When the lava cools down, the area formed looks like a new island.
- Based on the nature of eruptions volcanoes can be active, dormant or extinct.
- Volcanoes that have erupted in recent years and may erupt again any time are called active volcanoes.
- Famous active volcanoes include Mount Vesuvius, Mount Etna, Mount Erebus and Mount Fuji. The Barren Island is the only active volcano in the Indian subcontinent.
- It is located in Andaman and Nicobar Islands.



**Barren Island, Andaman & Nicobar Island**

- Volcanoes that have not erupted in recent years but may erupt in future are called dormant volcanoes.
- Volcanoes which have stopped erupting are called extinct volcanoes.

#### TIDAL WAVES:

- Tidal or storm waves are also known as tsunamis (pronounced su-nami).
- A tsunami is caused by an undersea earthquake or by a severe hurricane or cyclone.
- Storm waves from the sea come rolling towards the shore. They cause destruction on the seashore within seconds.



Tidal Waves/Storm Waves (tsunami)

Tsunami, 26<sup>th</sup> December 2004

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- Tidal waves as high as 15 meters have been recorded. If there is already a high tide then storm waves hit the land.
- They can cause severe damage. These giant waves travel at a speed of 800 km/h.
- This results in destruction of life and property in the area.
- On 26 December 2004, an earthquake measuring 9.0 on the Richter Scale hit off the coast of Indonesia.
- It triggered a massive tsunami that resulted in widespread death and destruction across South Asia.
- There were over 1,50,000 dead across 11 countries with Indonesia, Sri Lanka, India and Thailand being among the hardest hit. Over 5 million people became homeless.

#### DROUGHT:

- If a particular area receives no rain or less rain than normal for a long period, it is said to be affected by drought.
- However, it is not only the lack of rainfall that causes drought.

- Hot dry winds, very high temperature and evaporation of moisture from the ground can result in conditions of drought.

**Drought-affected areas:**

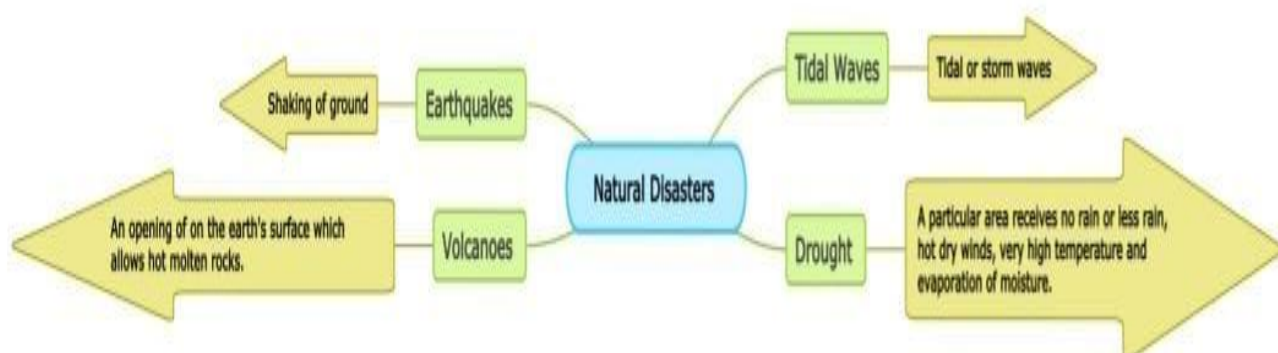
- People have to wait for help to come in the form of food, water and medicines from neighboring places or international agencies.
- India has faced three major droughts in the twentieth century-1904-05, 1965-66 and 1986-87.
- The 1987 drought was known as the drought of the century and had a major impact on one-third of the country.

**Drought**

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MEMORY MAP

tomorrow



### Let's Know More

#### I. Choose the correct answer.

1. The crust or the upper layer of the earth is made of plates/stones/volcanoes.
2. Based on the nature of eruptions, volcanoes/tsunami can be active, dormant or extinct.
3. The magnitude of tsunami/tidal wave/earthquake is measured on Richter Scale.
4. The liquid that comes out of a volcano is called lava/magma/core.

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### Let's Do

Changing your Tomorrow

#### A. Tick the correct answer.

1. Structures shatter, buildings shake, roads crack and communication fails during
  - a. Spring
  - b. Winter
  - c. Earthquakes
  - d. Summer
2. Those who study earthquakes are called
  - a. geologists
  - b. seismologists
  - c. astronomers
  - d. astrologers
3. The drought of the century in the history of India was in
  - a. 1904-1905
  - b. 1962-1963

- c. 1986-1987
  - d. 2008-2009
4. \_\_\_\_\_ is a famous volcano.
- a. Mt Vesuvius
  - b. Kutch
  - c. Bhuj
  - d. Latur

**B. Write T for True or F for False.**

1. The layers of the earth under the plates are stationary.
2. A seismograph consists of a frame, a spring, a stone, a drum, paper and a pen.
3. When magma is below the earth's surface it is called lava.
4. Tidal or storm waves are also called tsunamis.
5. Drought is caused by moisture in air.

**C. Write short answers.**

1. What are earthquakes?
2. What is magma?
3. What is tsunami?
4. Name three active volcanoes.

**D. Answer these questions.**

1. What is seismogram?
2. How do earthquakes affect the earth and its people?
3. How do volcanoes erupt? Name three types of volcanoes.
4. How does a tsunami affect human life?
5. What is drought? Name the conditions that can cause a drought.
6. How do people suffer in drought-affected areas?

**Improve Your GK**

- The eruptions of the Eyjafjallajökull volcano in 2010 threw out fine, glass-rich ash into the atmosphere.
- Eyjafjallajökull is present in Iceland.
- It thereby disrupted air traffic across western and northern Europe and caused inconvenience to air travel.
- Narcondam Volcano is a dormant volcano which is present in the Andaman sea.
- The Deccan plateau of India is formed as a result of volcanic activity.

**Answer Key****I.**

1. plates
2. volcanoes
3. earthquakes
4. lava

**A.**

1. earthquakes
2. seismologists
3. 1986-1987
4. Mt Vesivus

**B.**

- 1.F
- 2.T
- 3.F
- 4.T
- 5.T

**C.**

1. Earthquake are sudden shaking of the ground caused by the movement or vibrations deep inside the earth.
2. Magma is extremely hot liquid and semi-liquid rock located under Earth's surface.
3. Tsunamis are tidal or storm waves caused by an undersea earthquake or by a severe hurricane or cyclone.
4. Three active volcanoes are Mount Vesuvius, Mount Etna and Mount Fuji.

**D.**

1. The seismograph consists of a frame, a spring, a stone, a drum, paper and a pen.
  - As the earth trembles the spring moves the pen over the paper wrapped on the drum.
  - This reading or pattern obtained on the paper is called seismogram.
5. When there are earthquakes, the ground shakes and so houses, buildings and bridges shake.
  - When an earthquake lasts for some time, structures shatter, roads crack and communication systems collapse.
  - There is loss of life and property.
6. Volcanoes occur when lava from deep within the earth rushes out through weak spots in the crust.
  - There are three types of volcanoes.
    - Active volcano



- Dormant volcano
  - Extinct volcano
7. Tsunamis cause destruction on the sea shore within seconds.
- The giant waves travel at the speed of around 800 km/h.
  - For this results in destruction of life and property in the area.
  - A Sunami can have a devastating effect on human lives. They can destroy homes, change landscapes, hurt economic, spread disease and kill people.
8. If a particular area receives no rain or less rain than normal for a long period, it is said to be affected by drought.
- However, it is not only the lack of rainfall that causes drought. Hot dry winds, very high temperature and evaporation of moisture from the ground can result in conditions of drought.
6. Water is scarce in drought affected areas.
- When this happens, crops do not grow. As a result many people and animals may die of famine, or lack of food.
  - People have to wait for help to come in the form of food, water and medicines from neighbouring places or international agencies.

