Chapter 5

Interior of the Earth

Questions and Answers

I. Choose the correct Answer:

Question 1.
Nife is made up of ……...
a) Nickel and ferrous
b) Silica and aluminum
c) Silica and magnesium
d) Iron and magnesium

Answer:
a) Nickel and ferrous

Question 2.
Earthquake and volcanic eruption occur near the edges of ……...
a) Mountain
b) Plains
c) Plates
d) Plateaus

Answer:
c) Plates

Question 3.
The magnitude of an earthquake is measured by ……...
a) Seismograph
b) Richter scale
c) Ammeter
d) Rotameter

Answer:
b) Richter scale

Question 4.
The narrow pipe through which magma flow out is called a ……...
a) Vent
b) Crater

c) Focus
d) Caldera

Answer:
a) Vent

Question 5.
…….. Volcano is known as light house of Mediterranean Sea.
a) Stromboli
b) Krokota
c) Fujiyana
d) Kilinanjaro

Answer:
a) Stromboli

Question 6.
…….. belt is known as the "Ring of Fire".
a) Circum – Pacific
b) Mid – Atlantic
c) Mid – Continental
d) Antarctic

Answer:
a) Circum – Pacific

II. Fill in the blanks:

1. The core is separated from the mantle by a boundary called……..

Answer:
Weichart – Gutenberg discontinuity

2. The earthquake waves are recorded by an instrument known as ……..
Answer:
Seismograph

3. Magma rises to the surface and spreads over a vast area is known as ……..

Answer:
Lava

4. An example for active volcano .....

Answer:
Mauna Loa in Hawaii /Mt. Strampoli / St. Helens / Pinatubo

5. Seismology is the study of .....

Answer:
Earthquakes

III. Circle the odd one:

1. crust, magma, core, mantle
2. focus, epicenter, vent, seismic waves
3. Uttar Kashi, Chamoli, Koyna, Krakatoa
4. lava, caldera, silica, crater
5. Stromboli, Helens, Hawaii, Fujiyama

Answer:

1. crust, **magma**, core, mantle
2. focus, epicenter, **vent**, seismic waves
3. Uttar Kashi, Chamoli, Koyna, **Krakatoa**
4. Lava, caldera, **silica**, crater
5. Stromboli, Helens, Hawaii, **Fujiyama**

IV. Match the following:

1. Earth quake	a) Japanese term
2. Sima	b) Africa
3. Pacific Ring of Fire	e) Sudden movement
4. Tsunami	d) Silica and magnesium
5. Mt. Kenya	e) World volcanoes

Answer:

1. Earth quake	c) Sudden movement

2. Sima	d) Silica and magnesium
3. Pacific Ring of Fire	e) World volcanoes
4. Tsunami	a) Japanese term
5. Mt. Kenya	b) Africa

V. Consider the foiiowirig statementand (✓) Tick the appropriate Answer:

Question 1.
Assertion (A) : There structure of the earth may be compared to that of an Apple.
Reason (R) : The interior of the earth consists of crust, mantle and core.
a) A and R are correct and A explains R
b) A and R are correct but A does not explain R
c) A is incorrect but R is correct
d) Both A and R are incorrect

Answer:
b) A and R are correct but A does not explain R

Question 2.
Assertion (A) : The Pacific Ocean includes two thirds of the world's volcanoes.
Reason (R) : The boundary along the Eastern and Western coast areas of the Pacific Ocean is known as the Pacific Ring of Fire.
a) A and R are correct and A explains R
b) A and R are correct but A does not explain R
c) A is incorrect but R is correct
d) Both A and R are incorrect A

Answer:
a) A and R are correct and A explains R

VI. Answer in a word:

Question 1.
Name the outermost layer of the earth.

Answer:
The crust

Question 2.
What is SIAL?

Answer:
The upper part of the crust i.e., Silica and Alumina.

Question 3.
Name the movement of the Earth's lithospheric plates?

Answer:
Techtonic Movements

Question 4.
Give an example of an extinct volcano

Answer:
Mt. Popa of Myanmar

VII. Answer the following briefly:

Question 1.
What is the mantle?

Answer:
The layer of the earth beneath the crust is called the mantle. It is separated from the crust by a boundary called Mohorovicic discontinuity.

Question 2.
Write a note on the core of the earth?

Answer:
The innermost layer of the earth is called the core. It is also known as the barysphere. It is separated from the mantle by a boundary called Weichart-Gutenberg discontinuity. The core is also divided into two parts.

1. The outer core, which is rich in iron, is in the liquid state.
2. The inner core, composed of Nickel and Ferrous (Nife), is solid in the state.

Question 3.
Define an Earthquake.

Answer:
A sudden movement of a portion of the earth's crust which produces a shaking or trembling is known as an earthquake.

Question 4.
What is Seismograph?

Answer:
The earthquake waves are recorded by an instrument known as a seismograph.

Question 5.
What is a Volcano?

Answer:
A volcano is a vent or an opening in the earth's crust through which hot magma erupts from deep below the surface. The opening is usually circular in form.

Question 6.
Name the three types of volcanoes based on the periodicity of the eruption.

Answer:
On the basis of shape, there are three types of volcanoes. They are:

1. Shield volcano
2. Cinder-cone volcano
3. Composite volcano

VIII. Give reason:

Question 1.
No one has been able to take samples from the interior of the earth

Answer:
The innermost layer of the earth is called the core. The central core has very high temperature and pressure. So no one has been able to take samples from the interior of the earth.

Question 2.
The Continent crust is less dense than the oceanic crust.

Answer:
Despite the greater thickness, the continental crust is less dense than the oceanic crust because it is made of both light and dense rock types.

IX. Distinguish between:

Question 1.
SIAL and SIMA

Answer:
SIAL

1. SIAL is the upper part of the crust
2. Consists of granite rocks
3. Forms the continents
4. Silica and Alumina are the main mineral constituents.

SIMA

1. SIMA is the lower part of the crust
2. Consists of denser basaltic rocks
3. Forming the ocean floors.
4. Silica and Magnesium are the main mineral constituents.

Question 2.
Active volcano and a dormant volcano

Answer:
Active Volcano

1. Volcanoes that erupt frequently are called active volcanoes.
2. 600 active volcanoes in the world.
3. Ex: Mt. Stromboli, St. Helens, Pinatubo, Mauna Loa

Dormant Volcano

1. Volcanoes have no sign of activity for many years but may become active at any time.
2. Also called sleeping Volcano
3. Ex: Vesuvius Mountain, Mt. Fujiyama, Mt. Krakatoa

X. Answer the following questions in detail:

Question 1.
Write about the effects of an earthquake?

Answer:
Earthquakes may cause changes in the earth's surface. They are

- Vibrations often set landslides in mountainous regions.
- Falling of buildings is another danger of earthquakes.
- Most of the houses which collapsed were made of mud and bricks and proved to be death traps.
- Fire is another great danger.

- The underground water system is disturbed.
- Causes great disturbance in the water.
- The floods and waves cause great loss of life.

Question 2.
Describe the classification of volcanoes based on the eruptions.

Answer:
There are three types of Volcanoes based on eruptions.

- Active Volcanoes
- Dormant Volcanoes
- Extinct Volcanoes

Active Volcanoes:

- It erupts frequently. Most of them lie in the Pacific Ring of Fire belt.
- There are about 600 active Volcanoes in the world. Mauna Loa in Hawaii is the world's biggest active Volcano.
- Ex: Mt. Stromnoli, St. Helens, Pinatubo.

Dormant Volcanoes:

- It has shown no sign of activity for many years but they may become active at any time.
- It is also called a sleeping Volcano.
- Ex: Vesuvius mountain, Mt. Fujiyama, Mt. Krakatoa.

Extinct Volcanoes

- The top of extinct Volcanic mountains has been eroded.
- Ex: Mt. Popa, Mt. Kilimanjaro and Mt. Kenya.

Question 3.
Name the major zones of volcanic activity and explain anyone.

Answer:
There are three major zones of volcanic activities in the world. They are:

1. The Circum – Pacific belt
2. The Midcontinental belt
3. The Mid Atlantic belt

Circum Beit
This is the volcanic zone of the convergent oceanic plate boundary. It includes

the volcanoes of the eastern and western coastal areas of the Pacific Ocean. This zone is popularly termed as the Pacific Ring of Fire which has been estimated to include two-thirds of the world's volcanoes

XI. HOTs:

Question 1.
The earth's interior is very hot. Why?

Answer:

- The innermost layer of the earth, called the core has two parts, the outer core, and the inner core.
- The outer core is rich in iron and is in a liquid state.
- The inner core is made of Nickel and Ferrous which are in a solid-state.
- The central core has a very high temperature and pressure

Question 2.
Are Volcones Destructive (or) Constructive?

Answer:
Volcanoes are constructive and Destructive.
Constructive effects:

1. Volcanoes provide nutrients to the surrounding soil as volcanic ash contains minerals beneficial to plants.
2. Some plateaus and plains are formed due to volcanic eruptions.
3. They cool off the earth removing heat from the interior.

Destructive effects:

1. They cause earthquakes, fast floods, mudslides, and rockfalls.
2. Dust and Ash that come out of volcanoes are very harmful to living things.

Question 3.
How do volcanoes make on Island?

Answer:
Some volcanoes are found under oceans. If an underwater volcano keeps erupting, it can rise above the ocean's surface and thus as Island is formed.

Important Questions and Answers

I. Choose the Correct Answer:

Question 1.
The structure of the earth is compared to ……
a) Apple
b) Orange
c) Grapes
d) Pomegranate

Answer:
a) Apple

Question 2.
Which is called a blue planet?
a) Mercury
b) Venus
c) Earth
d) Jupiter

Answer:
c) Earth

Question 3.
The earth is covered by water at
a) 60%
b) 71%
c) 15 %
d) 10%

Answer:
b) 71%

Question 4.
The outer core is rich in
a) Iron
b) Zinc
c) Aluminium
d) Copper

Answer:
a) Iron

Question 5.
The radius of the earth is ……kms.
a) 6731
b) 6421

c)6371
d) 6571
Answer:
c) 6371

Question 6.
The mantle forms ……. of the earth's volume
a) 1 %
b) 15 %
c) 75%
d) 84 %

Answer:
d) 84 %

Question 7.
The crust forms ……makes the core
a) 15%
b) 1 %
c) 84 %
d) 54%

Answer:
15 %

Question 8.
How many active volcanoes in the world?
a) 500
b) 600
c) 700
d) 800

Answer:
b) 600

Question 9.
How many major zones of volcanic activities in the world?
a) one
b) two
c) three
d) Four

Answer:
c) three

Question 10.
The upper part of the earth's crust
a) SIMA
b) core
c) SIAL
d) Mantle

Answer:
c) SIAL

II. Fill in the blanks:

1. The oceanic crust is composed mostly of …….. rocks.

Answer:
dense

2. The upper part of the crust consists of ……rocks.

Answer:
granite

3. The sial and the sima together form the earth……

Answer:
Crust

4. Mantle is separated from the crust by a boundary called……

Answer:
Mohorovicic discontinuity

5. The core is also known as …….

Answer:
barysphere

6. The outer core is rich in …….

Answer:
iron

7. The crust forms …… of the earth's volume.

Answer:
1%

8. The movement of the Earth's lithospheric plates is termed as …… movements.

Answer:
tectonic

9. A……. is formed between two plates.

Answer:
trench

10. The earthquake is measured by the ……. scale.

Answer:
Richter

11. The earthquake is a ……. activity.

Answer:
Volcanic

12. Tsunami is a ……. term.

Answer:
Japanese

13. On ……. A tsunami occured in Tamil Nadu.

Answer:
26th Dec 2004

14. The opening of the Volcano is usually ……. in form,

Answer:
circular

15. The semi-molten state of interior earth is called……

Answer:
Magma

III. Circle the odd one:

1. Active volcano , Dorment volcano, Extinct volcano, **Cinder lone volcano**

2. Stratosphere, Troposhere, **Bary - sphere**, Exosphere

3. Shield volcano, Cinder cone volcano, Composite volcano, **Dormant volcano**

IV. Match the following:

1. Mantle	a) Lighthouse of mediterranean sea
2. Stromboli	b) blue planet
3. The cone	c) Japanese term
4. Earth	d) Weichart countenberg discount
5. Tsunami	e) Mohorocvicic discontinuity

Answer:

1. Mantle	e) Mohorocvicic discontinuity
2. Stromboli	a) Lighthouse of mediterranean sea
3. The cone	d) Weichart countenberg discount
4. Earth	b) blue planet
5. Tsunami	c) Japanese term

V. Consider the following statement and (✓) Tick the appropriate Answer:

Question 1.
Assertion (A) : A greater danger in an Earthquake is the falling of buildings.
Reason (R) : Earthquake may cause changes in the earth's surface
a) A and R are correct and A explains R
b) A and Rare correct but A does not explain.R
e) A is incorrect but R is correct
d) Both A and R are incorrect

Answer:
a) A and R are correct and A explain R.

Question 2.
Assertion (A) : The Himalayan region and the Ganga Brahmaputra valley are prone to earthquakes.
Reason (R) : A number of earthquakes have been experiencing in Brahmaputra valley,
a) A and R are correct and A explains R

b) A and R are correct but A does not explain R
c) A is incorrect but R is correct
d) Both A and R are incorrect

Answer:
a) A and R are correct and A explain R

VI. Answer in a word:

Question 1.
What is the three concentric layers of the earth?

Answer:

- The crust
- The mantle and
- The core

Question 2.
What are the causes of the Earthquake?

Answer:

- The chief cause of the Earthquake is the sudden slipping of the portion of the earth's crust along with fractures or faults.
- The sudden shifting of landmass causes upheavals.
- Volcanic activity

Question 3.
What are the types of earthquake waves?

Answer:
There are three types of earthquake waves:

1. P waves or longitudinal waves
2. S waves or transverse waves
3. L waves or surface waves

Question 4.
What is Magma?

Answer:
The molten rock material within the earth, together with gases, is called magma.

Question 5.
What is a caldera?

Answer:
The crater of a volcano is of great size and is shaped like a basin it is called a caldera. These are caused by violent explosions that blow away entire tops of great cones.

VII. Answer the following briefly:

Question 1.
What is the crust?

Answer:

- The crust is the outermost layer of the earth.
- It is about 35 km on the continental masses and 5 km on the oceanic floors.

The crust comprises two parts:

1. The upper part called SIAL and
2. The lower part called SIMA. SIAL is lighter than SIMA.

Question 2.
What is tectonic Movement?

Answer:

- Each lithospheric continental or oceanic plate moves over the asthenosphere.
- This movement is termed as tectonic movements.

Question 3.
What is Asthenosphere?

Answer:
The Asthenosphere is the part of the mantle that flows and moves the plates of the earth.

Question 4.
How the earthquake can be recorded?

Answer:

- The earthquake waves are recorded by an instrument known as a seismograph and measured by the Richter Scale. An earthquake of 2.0 on the Richter Scale or less can be little.
- Over 5.0 on the Richter Scale cause damage from things falling. Above 6.0 on the Richter Scale is considered as very Strong and 7.0 on the Richter Scale is classified as a major earthquake.

Question 5.
Give a note on Tsunami 2004

Answer:

- On 26th December 2004, Tsunami in the Indian Ocean swept the coastal area of Indonesia, India, Srilanka, Thailand, etc.
- They caused immense damage to life and property in the coastal area.

Question 6.
What is a Tsunami?

- Tsunami, a Japanese term is a name given to the huge wave caused in the sea by an earthquake.
- Tsunamis are quite common along the coasts of Japan and other regions in the Pacific Ocean.

Question 7.
Write a note on Barren Island.

- Barren Island is situated in the Andaman Sea and lies about 138 km Northeast of the territory's capital.
- It is the only active volcano from Sumatra to Myanmar. The last eruption occured in 2017.

X. Answer the following questions in detail:

Question 1.
Explain the divisions of Earth Movements?

Answer:

- The movement of the Lithospheric plates causes changes and force on the surface of the earth. They are
    1. Endogenic forces
    2. Exogenic forces

Endogenic forces:

- The forces which act in the interior of the earth are called Endogenic forces.
- Ex: Earthquakes and volcanoes.

Exogenic forces:
The forces that work on the surface of the earth are called Exogenic forces.

Question 2.
What are the causes of Volcanic Activity?

Answer:

- The temperature increases at the rate of 10°C for every 35 meters with pressure.
- So the interior of the earth is in a semi-molten state called magma.
- The magma under great pressure dissolves great volume and combustible gases.
- This makes volcanic material burst forth through the weak spots in the earth's crust.

Question 3.
Describe the distribution of Earthquakes and Volcanoes in the world.

Answer:
Distribution of Earthquakes:

1. In the pacific ring of fire 68% of earthquakes occur. Another 31% of earthquakes take place in the Mediterranean – Himalayan belt and Asia minor.
2. The remaining percent of earthquakes occur in NorthemAfrica and Rift Valley areas, Ganga – Brahmaputra Valley.

Distribution of Volcanoes:

1. Volcanoes are located in regions which are intensely folded or faulted.
2. They are about 600 active volcanoes and thousands of dormant and extinct ones.
3. They occur along with the coastal mountain ranges, like offshore islands and the midst of oceans.
4. The Volcanic belts are the principal earthquake belts of the world.