

PERFECT

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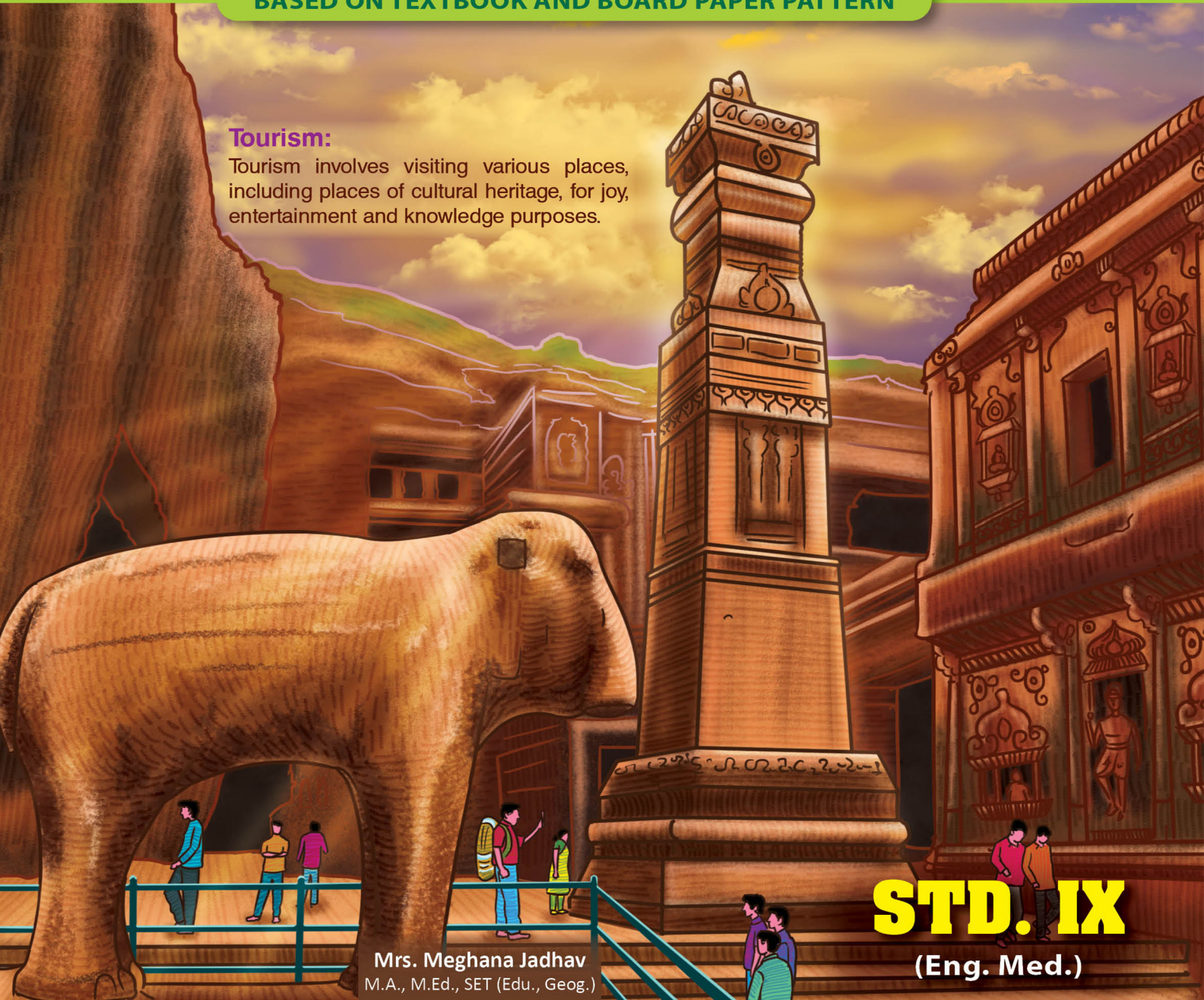


GEOGRAPHY

BASED ON TEXTBOOK AND BOARD PAPER PATTERN

Tourism:

Tourism involves visiting various places, including places of cultural heritage, for joy, entertainment and knowledge purposes.



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STD. IX
(Eng. Med.)

Target Publications® Pvt. Ltd.

PERFECT Geography

STD. IX

Salient Features

- ☞ Written as per the latest textbook and board paper pattern
- ☞ Exhaustive coverage of the entire syllabus in Question-Answer Format
- ☞ Every Chapter includes:
 - 'Overview' at the start of each chapter to facilitate quick understanding
 - Covers answers to all Textual Questions
 - 'Intext Questions' section for all intext questions of Textbook
 - 'Chapter Assessment' at the end of each chapter for self evaluation
- ☞ Includes Additional Important Questions for better preparation
- ☞ Includes Map-based questions, Graph-based questions and Solved Activities
- ☞ Carefully structured text in simple and lucid language

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PREFACE

Our primary goal while designing the book was to create a book that would act as a single point of reference for students. The purpose of this book is to provide students, the much needed answers for their textual questions as well as to enhance their knowledge quotient in the process.

Perfect Geography : Std. IX book has been prepared as per the latest syllabus which is more student-friendly and focuses on constructivist learning along-with making the process of education more gratifying and intriguing.

We have imbued the book with a generous amount of appropriate maps, diagrams, pictorial explanations and additional questions. Questions titled under '*Use your brain power*', '*Can you tell*', '*Think about it*' and a series of '*Intext Questions*', pave the way for a robust concept building.

Every chapter contains:

- **Overview** to facilitate quick understanding of the chapter.
- Objective questions are catalogued under:
 - *Choose the correct alternative and rewrite the sentences* - *Match the following*
 - *Identify the correlation and make a chain* - *Arrange in chronological order*
 - *Odd one out* - *Answer in one sentence*
 - *Identify the type with the help of statement*
 - *State whether right or wrong and correct the wrong one and Many more....*
- Subjective questions are catalogued under:
 - *Write short notes on* - *Distinguish between*
 - *Give geographical reasons* - *Answer the following*
- **Chapter Assessment** that stands as a testimony to the fact that the student has understood the chapter thoroughly. The solutions for the same are provided through QR Code.

Includes Important Solved Activities that explain certain concepts to students in a point-wise manner through the medium of an activity.

With absolute trust in our work, we hope our holistic efforts towards making this book an ideal knowledge hub for students pay off.

The journey to create a complete book is strewn with triumphs, failures and near misses. If you think we've nearly missed something or want to applaud us for our triumphs, we'd love to hear from you.

Please write to us at: mail@targetpublications.org

One book, one child, one pen and one teacher can change the world...

Best of luck to all the aspirants!

Publisher

Edition: Fourth

GG - Gyan Guru



We present to you our very own mascot-'GG', who has been proudly introduced by us. GG is a student-buddy that draws your attention to important bits of knowledge also termed as '*Gyan Guru*'. '*Gyan Guru*' sections help you understand a concept distinctly with a corresponding example from your immediate environment. This is our initiative that helps to link learning with life, thereby educating the students much more practically. We're hopeful that you will love this initiative.

Disclaimer

This reference book is transformative work based on 'Geography' published by the Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune. We the publishers are making this reference book which constitutes as fair use of textual contents which are transformed by adding and elaborating, with a view to simplify the same to enable the students to understand, memorize and reproduce the same in examinations.

This work is purely inspired upon the course work as prescribed by the Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune. Every care has been taken in the publication of this reference book by the Authors while creating the contents. The Authors and the Publishers shall not be responsible for any loss or damages caused to any person on account of errors or omissions which might have crept in or disagreement of any third party on the point of view expressed in the reference book.

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KEY FEATURES

Overview: Concise Summary is given under the title 'An Overview'. It is presented in the form of points, tables, Charts, etc.

Format of Notes: Exhaustive coverage of the entire lesson in Question – Answer format. All textual questions are covered, including the questions like Choose the Correct Alternative and Rewrite the Sentences, Match the Columns, Answer in One sentence, Fill the information in the given map, etc.

Gyan Guru: Gyan Guru illustrates real life applications or examples related to the concept discussed.

Reinforcement of Concept : Questions like Complete the Flowchart, Arrange in chronological order, Explain the concept, etc. help the student to reinforce of concept. Also diagrams are given in the answers wherever necessary, which helps the student in concept building.

Map-based question: Includes solved map based questions..

Graph-based question: Solved Graph-based questions are provided wherever necessary.

Distinguish between: The answer to Distinguish between contains heading for each point that can help students in memorization.

Format of Answer: The answers are provided in a point-wise format making it easy to remember.

Intext question: Each and every intext question is given with its solution as per the textbook.

Chapter Assessment: Chapter Assessment has been provided which stands as a testimony to the fact that the student has understood the chapter thoroughly. Student can access solutions through Q. R. code.

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*Note: Textual exercise questions are represented by * mark.*

An Overview

- Location:** Generally the movements in the earth's interior occur in the upper layer of the mantle.
- Reason:** By radioactive materials in the mantle, tremendous energy is released, due to these energy waves, instability is caused in the mantle and the movements occurs.
- Classification:** Based on velocity, direction and landforms–

	Basis of Classification	Movements
1.	Velocity	i. Slow movements (occurring continuously) like formation of mountains and continents ii. Sudden movements (in the form of events) like earthquakes, volcanoes
2.	Direction	i. Horizontal Movements ii. Upward, Downward Movements
3.	Landforms	i. Continent - building (creating continents, plateaus and highlands) ii. Mountain – building (folding, faulting)

Slow movements:

The effect of these movements can be seen on the earth's crust, in form of formation of –

- a. Mountains b. Continents

1. Mountain-building movements (orogenic):**i. Fold mountains:**

- From the interior of the earth energy is transferred.
- Because of these energy waves and pressure working towards each other in horizontal direction, the layer of the soft rocks form fold.
- Due to high pressure large scale folds are formed and their complexity increases.
- As a result, the surface of the earth gets uplifted and fold mountains are formed.
For e.g. The Himalayas, the Aravlis, the Rockies, the Andes and the Alps are the major fold mountains in the world.

ii. Block mountains:

- Because of internal movements, horizontal waves coming towards each other in hard rocks form faults due to compression.
- When a part of the earth's crust in between to parallel faults is lifted, it looks like a block which is known as Block mountain.
- The hilltops of block mountains are flat and their slopes are steep.
For e.g. Black Forest mountains in Europe and the Meghalaya Plateau of India.

iii. Rift Valleys:

- When horizontal movements on the earth's surface act in opposite direction, the tension increases and fractures develop in the rock.
- Sometimes two fractures develop side-by-side in the earth's crust and the land between the two fractures subsides. This subsided deep part is called rift valley.
- Both the slopes of a rift valley are steep.
For e.g. The rift valley of river Narmada in India, the Great Rift Valley of Africa and the Rhine River Rift Valley of Europe.

2. Continent – building movements (Epirogenic)

- These movements occur towards the centre or from the earth's centre towards the earth's crust.
- Because of these movements, a vast part of the earth's crust is uplifted and continents are formed.
- If the original continental portion of the crust subsides below the sea level, it forms a part of the sea-bed.

**Sudden movements:****1. Earthquakes:**

- i. Due to the occurrence of the movements in the earth's interior, tremendous tension is created in the earth's crust. When the tension goes beyond limits, the energy is released in the form of waves. As a result, the earth's surface trembles.
- ii. Measurement: The magnitude of the earthquake is measured by Richter scale.
- iii. Causes:
 - a. Moving of the plates, it colliding and sliding each other (one below the other)
 - b. Forming of fractures in rock layers, due to tension in the interior of the earth.
 - c. Occuring of volcanic eruptions.
- iv. Focus and Epicentre:
 - a. Because of the movements occurring below the earth's surface, tension is created and it keeps on accumulating. A place where this tension mounts up and high energy is released is the centre of the earthquake. It is called the focus or hypocenter. Energy waves scatter in all directions from this centre.
 - b. The place on the earth's surface where the energy waves reach first and it experiences the first tremor is called the epicenter of the earthquake. It is perpendicular to the focus and also the nearest place on the earth's surface.
- v. The seismic waves:

Primary or 'P' Waves	Secondary or 'S' Waves	Surface or 'L' Waves
<ul style="list-style-type: none"> • After the energy is emitted in the earth's interior, it reaches to the surface of the earth. • They travel at a very fast rate from the focus of the earthquake in radial direction. • Subjected to these waves, particles in the rock move to and fro in the direction of waves. • These waves can travel through all the three states-liquid, solid and gaseous, but while travelling through liquid medium, their direction gets changed. • Because of these waves, the buildings on the earth's surface move back and forth. 	<ul style="list-style-type: none"> • After the primary waves, these waves reach to the earth surface. • They scatter in all directions from the focus of the earthquake and the velocity is lesser than the 'P' waves. • The particles lying in the way of these waves moves up and down in the direction of energy transfer. • These waves can travel only through the solid medium. As they enter the liquid medium, they get absorbed. • Because of these waves, the buildings on the earth's surface move up and down. • These waves are more destructive than the P waves. 	<ul style="list-style-type: none"> • These are generated after the main P and S waves reach the epicenter. • They travel in the direction of the circumference of the earth along the crust. • These waves are highly destructive.

- vi. Seismogram:
 - a. Through this instrument, a graph showing the movement of seismic waves (seismograph) can be generated and after studying this graph, the magnitude of earthquake can be known.
 - b. Now with the help of modern technology, advanced seismograms have been designed which can help to measure micro-seismic waves also.
- vii. Effects of earthquake:
 - a. Cracks or fractures are developed on the ground.
 - b. Causes landslides which leads to sliding of rocks.
 - c. Sometimes the groundwater changes its course.
 - d. Some areas get uplifted while some may subside.
 - e. In oceans, tsunamis are generated and can cause great loss of life and property in the coastal areas.
 - f. In snow covered areas, avalanches may occur.
 - g. Buildings collapse and loss of life and property occur.
 - h. Transportation routes are disrupted.



2. Volcanoes:

- i. The process in which the hot solid, liquid and gaseous materials are thrown out from the mantle of the earth onto the surface of the earth is called volcanic eruption.
- ii. Types of volcanoes:
 - a. On the basis of the types of volcanic eruption
 - b. On the basis of the periodicity of the volcanic eruption

	On the basis of the type of volcanic eruption		On the basis of the periodicity of volcanic eruption
	<p>1. Central – type or conical volcano -</p> <ul style="list-style-type: none"> i. During eruption, the molten magma comes out through a pipe-like vent inside the earth’s surface. ii. The lava spreads around the mouth of this vent when it comes out. As a result, cone-shaped volcanic mountains are formed. iii. For e.g. Mt. Fujiyama in Japan, and Mt. Kilimanjaro in Tanzania. 		<p>1. Active volcano –</p> <ul style="list-style-type: none"> i. This type of volcanic eruption is regular even in the present times. ii. For e.g. Mt. Fujiyama in Japan, Mt. Stromboli in Mediterranean Sea.
	<p>2. Fissure – type volcano –</p> <ul style="list-style-type: none"> i. During eruption, the magma does not come out from a one vent; it comes out from many cracks (fissures). ii. The molten material coming out with the eruption spreads on both the sides of the fissures. As a result volcanic plateaus are formed. iii. For example, The Deccan Plateau of India. 		<p>2. Dormant Volcano –</p> <ul style="list-style-type: none"> i. This type of volcano has not erupted since longtime, but may become active suddenly. ii. For e.g. Mt. Vesuvius in Italy, Mt. Katmai in Alaska, Barren Island, India.
			<p>3. Extinct Volcano –</p> <ul style="list-style-type: none"> i. These types of volcanoes have not erupted in the past since long time and are not likely to erupt in the future. ii. For example, Mt. Kilimanjaro in Tanzania.

- iii. Effects of volcanoes:
 - a. Loss of life and property.
 - b. Due to volcanic eruption occurring below ocean floors, sometimes tsunamis are generated.
 - c. Dust, smoke, ash, gases, water vapour, etc. remain in the atmosphere for a long time. This may create imbalance in the environment.
 - d. Due to volcanic ash, land may become fertile.
 - e. Because of lava, many minerals are found near the earth’s surface.
 - f. Due to volcanic eruption, new land is formed or at times an island may even disapper.
 - g. At the mouth of the craters of dead volcanoes lakes are formed when rain water accumulates in it.

Plate boundaries:

- i. Plate Consuming (subduction) Boundaries -
The part of the plate boundary which slides under the crust subdues. There is loss of material. Such boundaries are called plate consuming boundaries.
- ii. Plate creating (constructive) boundaries –
In areas where new materials come up onto the earth’s crust are called plate creating boundaries. Both the processes happen continuously.

Plate boundaries and earthquakes & volcanoes:

- i. Plate boundaries are directly related to the areas of earthquakes and volcanoes.
- ii. Most of the volcanoes are located on the plate boundaries.
- iii. The earthquake Zones are also seen in the border areas.

**Q.1. (A) Tick ✓ in front of the correct option**

- *1. On which of the following are slow movements in the earth's interior dependent?
 (A) Landforms
 (B) Velocity
 (C) Direction
- *2. When waves divert from each other, what do they create?
 (A) Compression
 (B) Tension
 (C) Mountain
3. The Meghalaya Plateau of India is an example of which of following type?
 (A) Block mountain
 (B) Fold mountain
 (C) Rift valley
- *4. For the formation of a rift valley, which of the following processes should occur in the earth's crust?
 (A) Compression
 (B) Tension
 (C) Weathering
- *5. Which of these is a fold mountain?
 (A) The Satpudas
 (B) The Himalayas
 (C) The Western Ghats
- *6. The formation of extensive plateaus is a result of which type of movements?
 (A) Mountain-building
 (B) Continent-building
 (C) Horizontal
7. The forward-backward movements of the particles occur due to which type of seismic wave?
 (A) Primary waves
 (B) Secondary waves
 (C) Surface waves
8. Which type of volcanic eruption has resulted in the formation of the Deccan Plateau of India?
 (A) Central-type volcano
 (B) Fissure-type volcano
 (C) None of the above
9. Which of the following is the example of an extinct volcano?
 (A) Mt Fujiyama
 (B) Mt. Vesuvius
 (C) Mt. Kilimanjaro

Answers:

1. (B) 2. (B) 3. (A) 4. (B)
 5. (B) 6. (B) 7. (A) 8. (B)
 9. (C)

Q.1. (B) Choose the correct alternative and rewrite the sentences

1. The effect of slow movements can be seen in the form of formation of mountains and _____ on the earth's crust.
 (A) volcanoes (B) earthquakes
 (C) continents
2. Because of the transferred energy waves from the interior of the earth, the pressures work towards each other in horizontal direction and the layers of the soft rocks form _____.
 (A) folds (B) cracks/fractures
 (C) blocks
3. When a part of the earth's crust in between two parallel faults is lifted, it looks like a block and such a landform is known as a _____.
 (A) rift valley (B) block mountain
 (C) fold mountain
4. The slopes of the block mountains are _____.
 (A) steep (B) parallel
 (C) gentle
5. The magnitude of an earthquake is measured on the _____ scale.
 (A) Joule (B) Kilometer
 (C) Richter
6. The centre of the earthquake below the earth's surface is called the _____.
 (A) focus or hypocenter
 (B) epicenter
 (C) underground center
7. The _____ is the nearest place on the earth's surface from the focus which experiences the first tremor.
 (A) earth surface center
 (B) epicenter
 (C) seismocentre
8. The epicenter is _____ to the focus.
 (A) perpendicular (B) parallel
 (C) below
9. Secondary waves (S waves) can travel only through the _____ medium.
 (A) solid (B) liquid
 (C) gaseous
10. Surface waves (L waves) travel in the direction of the _____ of the earth along the crust.
 (A) circumference (B) radial
 (C) perpendicular
11. Through a _____, a graph showing movements of seismic waves can be generated.
 (A) Seismogram (B) Telegram
 (C) Radar



12. If the volcanic eruptions are regular even in the present times, then such volcanoes are called _____ volcanoes.
 (A) active (B) dormant
 (C) extinct
13. _____ in Japan is the example of an active volcano A. B.
 (A) Mt. Katmai (B) Mt. Fujiyama
 (C) Mt. Kilimanjaro
14. _____ in India is the example of dormant volcano.
 (A) Deccan Plateau
 (B) Meghalaya Plateau
 (C) Barren Island
15. Kilimanjaro in Tanzania is the example of _____ volcano.
 (A) central type (B) fissure type
 (C) active

Answers:

1. (C) 2. (A) 3. (B) 4. (A)
 5. (C) 6. (A) 7. (B) 8. (A)
 9. (A) 10. (A) 11. (A) 12. (A)
 13. (B) 14. (C) 15. (A)

Q.2. (A) Match the following

1.

	Group A		Group B
i	Mountain-building movements	a.	Block mountain
ii	Rocky mountains	b	Slow movements
iii	Black forest mountains	c	Sudden movements
iv	Great Rift Valley	d.	Fold mountains
		e.	Rift valley

Ans: (i – b), (ii – d), (iii – a), (iv – e)

Q.2. (B) Arrange in chronological order

1. **Arrange the following process of formation of the fold mountain in chronological order.**

- i. If the pressure is very high, the complexity of fold increases.
- ii. Fold mountains are formed.
- iii. As a result, the surface of the earth gets uplifted.
- iv. Because of the transferred energy waves from the interior of the earth, the pressures work towards each other in horizontal direction and the layers of the soft rocks form folds.

Ans:

- i. Because of the transferred energy waves from the interior of the earth, the pressures work towards each other in horizontal direction and the layers of the soft rocks form folds.
- ii. If the pressure is very high the complexity of fold increases.

- iii. As a result, the surface of the earth gets uplifted.
- iv. Fold mountains are formed.

2. **Arrange the following statements in chronological order in which the block mountains are formed.**

- i. A part of the earth's crust in between two parallel faults is lifted.
- ii. The energy waves coming towards each other in hard rocks from faults, due to compression.
- iii. Such a landform is known as a block mountain.
- iv. This lifted part of the earth's crust looks like a block.

Ans:

- i. The energy waves coming towards each other in hard rocks from faults, due to compression.
- ii. A part of the earth's crust in between two parallel faults is lifted.
- iii. This lifted part of the earth's crust looks like a block.
- iv. Such a landform is known as a block mountain.

3. **Arrange the following process of formation of the rift valleys in chronological order.**

- i. The horizontal movements on the earth's surface act in opposite direction.
- ii. The land in between the two fractures subsides.
- iii. The subsided deep part is called rift valley.
- iv. Tension is generated on the rocks in the earth's crust and when it increases, fractures develop in the rocks.

Ans:

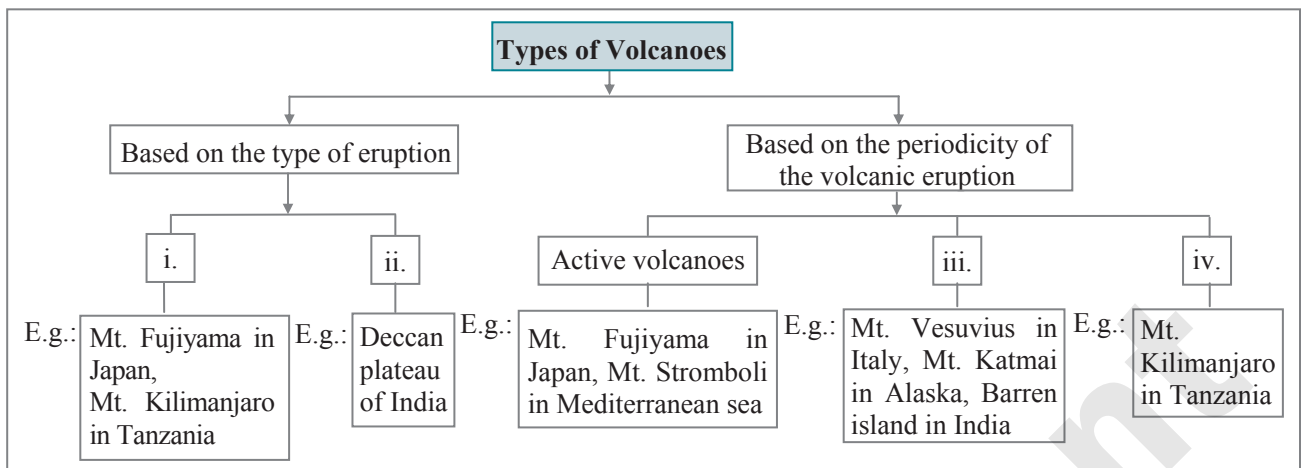
- i. The horizontal movements on the earth's surface act in opposite direction.
- ii. Tension is generated on the rocks in the earth's crust and when it increases, fractures develop in the rocks.
- iii. The land in between the two fractures subsides.
- iv. The subsided deep part is called rift valley.

*4. **Arrange the following statements in chronological order in which an earthquake occurs.**

- i. The earth's surface vibrates.
- ii. The plates suddenly move.
- iii. Due to the movements in the mantle, compression keeps on increasing.
- iv. Along the weak points (faultlines) , the rocks break apart.
- v. The stored energy is released in the form of seismic waves.

Ans:

- i. The plates suddenly move.
- ii. Due to the movements in the mantle, compression keeps on increasing.
- iii. Along the weak points (faultlines), the rocks break apart.
- iv. The stored energy is released in the form of seismic waves.
- v. The earth's surface vibrates.

**Q.2. (C) Complete the flowchart**

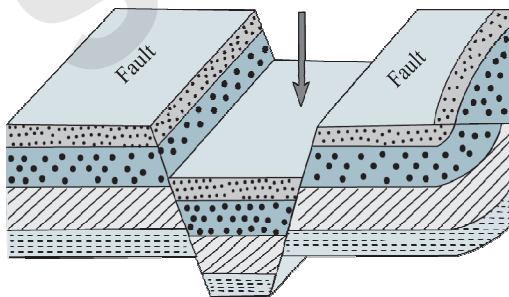
Ans: i. Central type volcanoes ii. Fissure-type volcanoes iii. Dormant volcanoes iv. Extinct volcanoes

Q.3. (A) Explain the concepts/Write short notes**1. Faults****Ans:**

- i. Because of internal movements, horizontal waves moving away from each other are formed. This causes tension on the layer of rocks and leads to the formation of fractures in the rocks. These are known as faults.
- ii. Faults are also formed due to compression, when the waves come towards each other in hard rocks.

2. Rift valley**Ans:**

- i. When horizontal movements on the earth's surface act in opposite direction, the tension increases and fractures develop in the rock.
- ii. Sometimes two fractures develop side-by-side in the earth's crust and the land between the two fractures subsides. This subsided deep part is called a rift valley.
- iii. Both the slopes of a rift valley are steep. For e.g. The rift valley of river Narmada in India, the Great Rift Valley of Africa and the Rhine River Rift Valley of Europe.

**3. Continent – building movements****Ans:**

- i. These movements occur towards the centre or from the earth's centre towards the earth's crust.

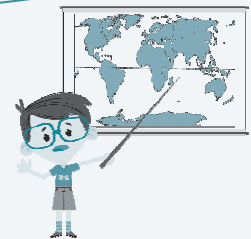
- ii. Because of these movements, when a vast part of the earth's crust is uplifted, continents are formed.
- iii. If the original continental portion of the crust subsides below the sea level, it forms a part of the sea-bed.

4. Earthquake**Ans:**

- i. Due to the occurrence of the movements in the interior of the earth, tremendous tension is created in the earth's crust. When the tension goes beyond limits, the energy is released in the form of waves. As a result, the earth's surface trembles.
- ii. Earthquake is the result of these sudden internal movements.
- iii. The magnitude of an earthquake is measured on the Richter scale.
- iii. The causes of the earthquake are as follows:
 - a. Moving of the plates, their colliding and sliding each other (one below the other)
 - b. Forming of fractures in rock layers due to tension in the interior of the earth.
 - c. Occuring of volcanic eruptions.

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Turkey is known to be an earthquake prone region because of its geographical location. On 6th February 2023, at midnight, an earthquake of about 7.8 magnitude occurred in southern



Turkey and parts of Northern Syria. This was followed by another earthquake of 7.5 magnitude. The number of casualties in Turkey was 45,968 and 7,259 in Syria. This earthquake was said to be the most destructive since the last earthquake that took place in 1939.

**5. Focus/hypocenter****Ans:**

- i. Because of the movements occurring below the earth's surface, tension is created and it keeps on accumulating. A place where this tension mounts up and high energy is released is the centre of the earthquake. It is called the focus or hypocenter.
- ii. Energy waves scatter in all directions from this centre.

6. The epicenter**Ans:**

- i. The place on the earth's surface where the energy waves reach first and it experiences the first tremor is called the epicenter of the earthquake.
- ii. It is perpendicular to the focus and also the nearest place on the earth's surface.

7. Seismogram**Ans:**

- i. Through this instrument, a graph showing movement of seismic waves can be generated and after studying this graph, the magnitude of earthquake is known.
- ii. Now with the help of modern technology, advanced seismograms have been designed which can help to be measured micro-seismic waves as well.

8. Volcanoes**Ans:**

- i. The process in which the hot solid, liquid and gaseous materials are thrown out from the mantle of the earth onto the surface of the earth is called volcanic eruption.
- ii. During this process, ash, water vapour, various types of poisonous and inflammable gases, hot molten magma, etc. are thrown out.
- iii. When the molten magma comes out on the surface, it is called lava.
- iv. On the basis of the types of eruption, volcanoes can be divided into two types –
 - a. Central-type or conical volcanoes,
 - b. Fissure-types volcanoes.
- v. Whereas according to the periodicity of the volcanic eruption, three types of volcanoes can be identified –
 - a. Active volcanoes,
 - b. Dormant volcanoes,
 - c. Extinct volcanoes.

9. Plate boundaries**Ans:**

- i. The earth's crust is made up of seven major plates.
- ii. Depending on the compression and tension formed in the interior of the earth, these plates move in various directions.

- iii. The place where these plates meet is called plate boundary.
- iv. Plate Consuming (subduction) boundaries - The part of the plate boundary which slides under the crust subdues. There is loss of material. Such boundaries are called plate consuming boundaries.
- v. Plate creating (constructive) boundaries - In areas where new materials come up onto the earth's crust are called plate creating boundaries.
- vi. Both the processes happen continuously.
- vii. Plate boundaries are directly related to areas of earthquakes and volcanoes. Most of the volcanoes are located on the plate boundaries. The earthquake Zones can also be seen in the border areas.

Q.3 (B) Identify and name the internal movement

1. Tsunamis are generated in coastal areas.*Ans:** Sudden movements

Explanation:

The sudden movements in the interior of the earth create tremendous tension in the earth's crust and release lot of energy which results in earthquake. When earthquake occurs at the bottom of the sea, it leads to the formation of tsunamis.

2. The Himalayas are an example of fold mountains.*Ans:** Slow movements

Explanation:

Due to slow movements in the interior of the earth, the energy waves and the pressure waves working towards each other in horizontal direction, creates pressure on the layers of the soft rocks. This leads to the folds in the layers of the soft rocks resulting in the formation of the fold mountains.

3. Molten magma is thrown out of the earth's mantle.*Ans:** Sudden movements

Explanation:

The sudden movements in the interior of the earth also cause hot solid, liquid and gaseous materials including molten magma to be thrown out from the earth's mantle.

4. Rift valley is formed because of faulting.*Ans:** Slow movements

Explanation:

Due to slow movements in the interior of the earth, tension is created in the layers of rocks and leads to the formation of faults. When a part of land between two parallel faults subsides, a rift valley is formed.

**5. Deccan plateau has been formed due to volcano.****Ans:** Sudden movements.

Explanation:

Due to a sudden movement like a volcano, hot solid, liquid and gaseous materials are thrown out from the mantle of the earth onto the surface of the earth. Sometimes these materials come out from many cracks (fissures). It is called fissure – type volcanic eruption. The molten materials spread on both the sides of the fissure. As a result, volcanic plateaus are formed.

[**Note:** Students are not expected to give the explanation in answer. It is given only for better understanding of the students.]

Q.3. (C) State whether right or wrong and correct the wrong one**1. The Himalaya is a block mountain.****Ans:** Wrong

The Himalaya is a fold mountain.

2. Surface waves are highly destructive than primary and secondary waves.**Ans:** Right**3. As an effect of the earthquake in snow-covered areas, avalanches may occur.****Ans:** Right**4. Mt. Vesuvius in Italy is the example of the extinct volcano.****Ans:** Wrong

Mt. Vesuvius in Italy is the example of the dormant volcano.

5. Tsunamis get generated due to volcanic eruption occurring below ocean floors.**Ans:** Right**Q.3. (D) Distinguish between*****1. Block Mountain and Fold Mountain****Ans:**

	Block Mountain	Fold Mountain
i.	Process of formation	
	Block mountains are formed when the layers of rocks between two parallel fractures or faults get lifted.	Fold mountains are formed when large scale folds are formed and the surface of the earth gets uplifted due to the horizontal high compressive pressure on the layers of rocks.
ii.	Types of rocks	
	The formation of block mountain is the effect of internal movement on hard rocks.	The formation of fold mountains is the effect of internal movements on soft rocks.
iii.	Example	
	Black Forest mountains in Europe and Meghalaya Plateau of India have been formed by this method.	The Himalayas, the Aravalis, the Rockies, the Andes, the Alps are some examples of fold mountains.

2. Primary and Secondary Seismic Waves*Ans:**

	Primary Seismic Waves	Secondary Seismic Waves
i.	Order	
	Primary Seismic Waves are the first ones to reach the earth's surface after the emission of energy in the earth's interior.	Secondary Seismic Waves reach the earth's surface after the primary waves.
ii.	Velocity	
	They travel at a very fast speed.	They have a lesser velocity as compared to the primary waves.



iii.	Direction of movements	
	The particles in the rock along the path of these waves move to and fro in the direction of waves.	The particles lying in the way of these waves move up and down in the direction of energy transfer.
iv.	Medium of travel	
	These waves can travel through all the three states, viz. solid, liquid and gaseous.	These waves can only travel through solid medium.
v.	Travelling through liquid medium	
	While travelling through liquid medium, the direction of these waves changes.	These waves get absorbed as they enter the liquid medium.
vi.	Destructivity	
	These waves are comparatively less destructive than the secondary seismic waves.	These waves are more destructive than the primary seismic waves.

3. Central-type and Fissure-type volcanoes

Ans:

	Central-type volcano	Fissure-type volcano
i.	Concept	
	The volcano where the molten magma erupts from a single pipe like vent from inside the earth's surface, is called as central-type volcano.	The volcano which erupts from more than one vent known as cracks or fissures is called as fissure-type volcano.
ii.	Effects	
	The lava comes out from the mouth of this single vent and spreads around it, forming cone-shaped mountains.	The lava spreads in all directions after coming out from the fissures and forms volcanic plateaus.
iii.	Example	
	E.g.: Mt. Fujiyama in Japan and Mt. Kilimanjaro in Tanzania	E.g.: The Deccan Plateau of India

***4. Earthquakes and volcanoes**

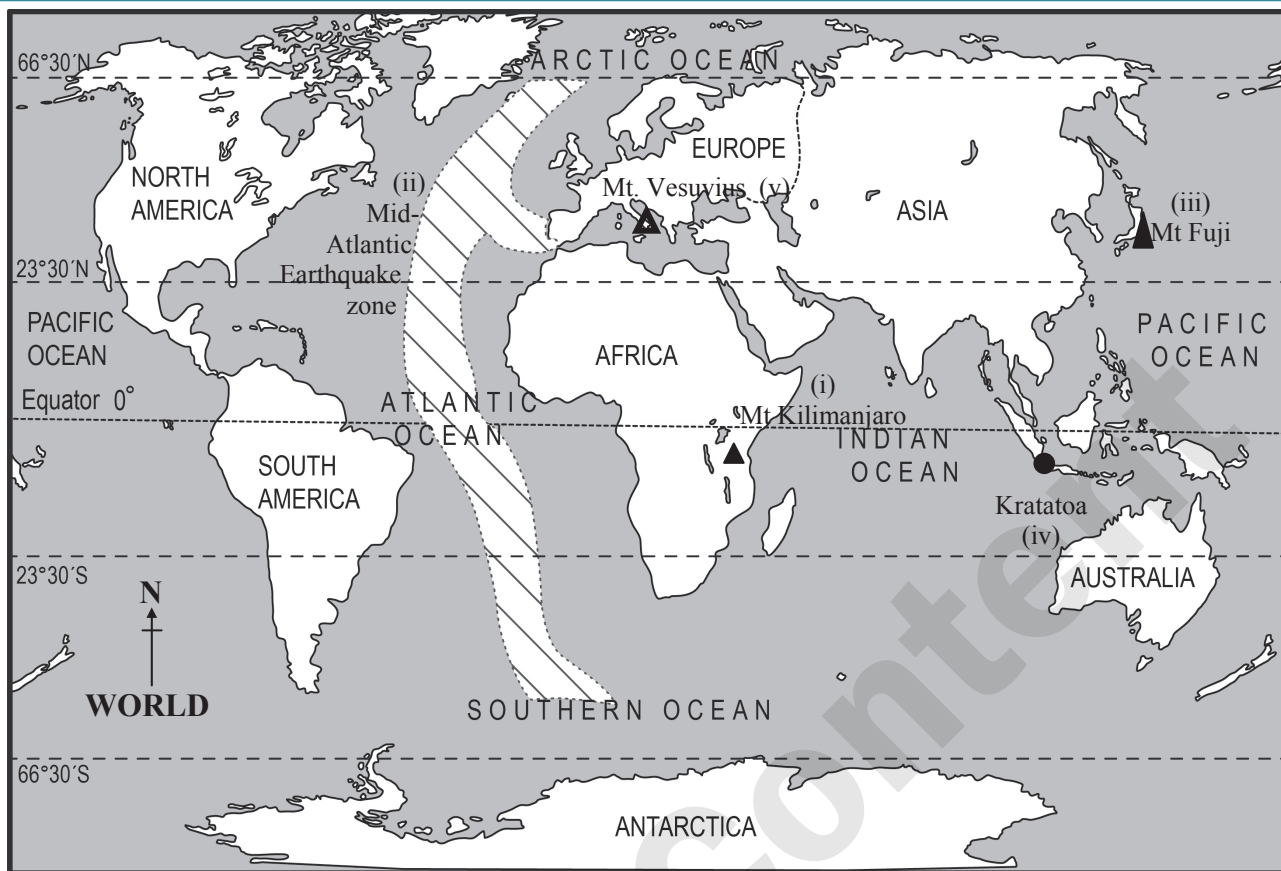
Ans:

	Earthquakes	Volcanoes
i.	Concept	
	The trembling of the earth's surface due to the increased tension in the earth's crust, because of the movements occurring in the interior, is known as earthquake.	The eruption of hot solid, liquid and gaseous materials from the mantle of the earth onto the surface of the earth is known as volcanic eruption.
ii.	Effects	
	Some areas get uplifted while some get subsided due to earthquakes.	New land can get formed or certain islands can disappear due to volcanic eruption.

Q.4. Fill the following information in given map and prepare an index

***1. Show the following on a given outline map of the world.**

- | | |
|--------------------|----------------------------------|
| i. Mt. Kilimanjaro | ii. Mid-Atlantic Earthquake zone |
| iii. Mt. Fuji | iv. Krakatoa |
| v. Mt. Vesuvius | |



INDEX:

Q.No	Symbols	Information	Marks
i	▲	Mt. Killimanjaro	
ii	▨	Mid-Atlantic Earthquake zone	
iii	▲	Mt. Fuji	
iv	●	Krakatoa	
v	△	Mt. Vesuvius	

Q.5. Give geographical reasons

- *1. Buildings collapsed at the foothills of the Himalayas because of an earthquake. Before collapsing they were moving forward and backward.

Ans:

- When an earthquake occurs, three types of seismic waves, viz. primary, secondary and surface waves are generated.
- The primary waves reach the earth's surface first and move to and fro, causing forward-backward motion of the buildings and other structures.
- The secondary waves and the surface waves which reach and spread on the earth's surface after the primary waves, are more destructive in nature. It is mostly due to these waves that buildings and other structures collapse.

Hence, the buildings at the foothills of the Himalayas were moving backward and forward initially due to the primary waves and collapsed later due to the effect of secondary and surface waves.

- *2. There is a difference in the formation of the Meghalaya Plateau and the Deccan Plateau.

Ans:

- The horizontal waves in the interior of the earth can cause tension or compression in the layers of rocks. This leads to formation of fractures or faults. When a part of the earth's crust in between two parallel faults is lifted, it looks like a block. The Meghalaya plateau is formed by this process.
- Landforms are also formed due to the magma coming out of volcanic eruptions. In fissure-type of volcanoes, the magma comes out from several cracks or fissures and spreads on both the sides of the fissure. This results in formation of volcanic plateaus. The Deccan Plateau is such a type of volcanic plateau.

Hence, there is a difference in the formation of the Meghalaya Plateau and the Deccan Plateau.



***3. Most of the volcanoes are found on the plate boundaries.**

Ans:

- i. Due to compression and tension which is generated in the interior of the earth, plates move in various directions. Plate boundaries are directly related to areas of earthquakes and volcanoes.
- ii. The part of the plate boundary which slides under the crust subdues. There is loss of material. Such boundaries are called plate consuming (subduction) boundaries.
- iii. In areas, where new material is coming up onto the earth's crust, they are called plate creating (constructive) boundaries.
- iv. Both the processes happen continuously. Because of this sometime earth's crust get cracks and magma comes out on its surface.

Hence, most of the volcanoes are found on the plate boundaries.

***4. The Barren Island is becoming conical in shape.**

Ans:

- i. The Barren Island is a part of the Andaman and Nicobar group of Islands.
 - ii. The volcano on this island was dormant for a long time but has become active and started erupting in February 2017.
 - iii. This volcano is central-type of volcano and hence the lava coming out of this eruption is resulting in the formation of conical mountain.
- Hence, the Barren Island is becoming conical in shape.

***5. Volcanic eruptions can cause earthquakes.**

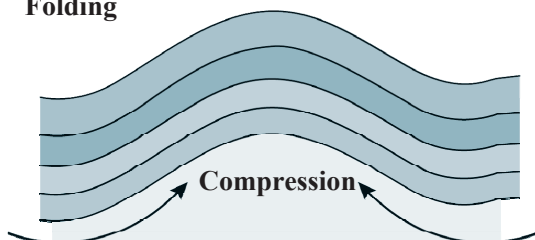
Ans:

- i. Depending on the compression and tension formed in the interior of the earth, the plates moves in various directions. Plate boundaries are directly related to areas of earthquakes and volcanoes.
- ii. Most of the volcanoes are located on the plate boundaries.
- iii. During volcanic eruption hot molten magma erupts out of the earth's mantle. This hot magma exerts pressure on the rocks until they crack.
- iv. The gaps created in these rocks get filled up by the magma and again builds pressure on the rocks. Everytime the rocks crack, they cause tremors. Such tremors generally cause earthquakes.

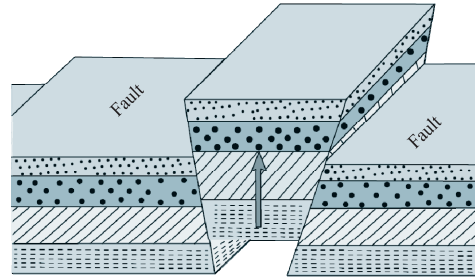
Hence, volcanic eruption can cause earthquakes.

Q.6. (A) Draw labelled diagram

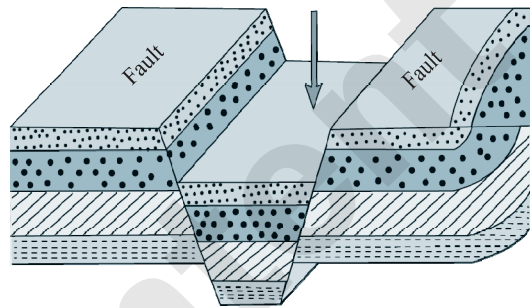
1. Folding



2. Block mountain

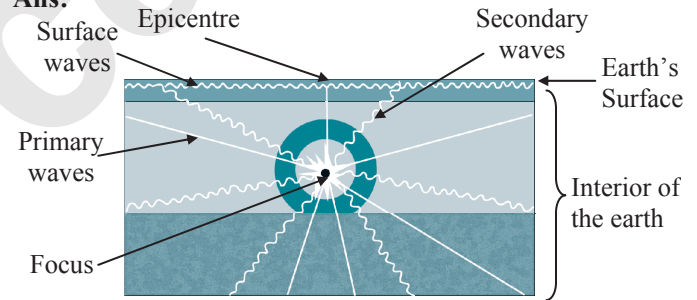


3. Rift valley



***4. Show the epicentre, focus and the primary, secondary and surface waves of an earthquake with the help of neat labelled diagram.**

Ans:



Q.6. (B) Observe the diagram and answer the questions based on it

Effect	Pressure	Tension
The direction of wave movement	<p>Waves moving towards each other</p>	<p>Waves moving away from each other</p>
Effect on hard rocks		
Effect on soft rocks	<p>Folding</p>	

Question:

1. Which waves create pressure on earth's crust?
2. Which waves create tension on earth's crust?



3. How do the movements that create pressure on the hard rocks affect them?
4. How do the movements that create tension in the hard rocks affect them?
5. How do the movements that create pressure on the soft rocks affect them?
6. How do the movements that create tension in the soft rocks affect them?

Answer:

1. Waves created due to horizontal internal movements and moving towards each other, create pressure on earth's crust.
2. Waves created due to horizontal internal movements and moving away from each other create tension on earth's crust.
3. Movements that create pressure on the hard rocks lead to the formation of faults, due to which one rock gets uplifted and moves on another rock.
4. Movements that create tension on the hard rocks lead to the formation of faults, due to which fractures develop in the rocks and the continuity in the layers of the rocks is disturbed.
5. Movements that create pressure in the soft rocks lead to folding of the layers of the soft rocks.
6. Movements that create tension in the soft rocks lead to the development of fractures in the soft rocks, due to which the rocks move away from each other thus forming a deep subsided part.

Q.7. Answer the following

1. **How are the internal movements of the earth classified?**

Ans:

- i. The internal movements of the earth are classified on the basis of their velocity, direction and landforms they produce.
- ii. On the basis of their **velocity**, the internal movements are classified as follows:
 - a. Slow movements: The movements which occur continuously and lead to the formation of mountains and continents are known as slow movements.
 - b. Sudden movements: The movements which occur as an event and cause earthquakes and volcanic eruptions are known as sudden movements.
- iii. On the basis of the **direction**, the internal movements are classified as follows:
 - a. Horizontal Movements: Leads to the formation of fold mountains.
 - b. Upward and downward Movements: Leads to the formation of block mountains and rift valley respectively.

- iv. On the basis of the **landforms created** the internal movements are classified as follows:
 - a. Continent-building: Leads to the formation of continents, plateaus, etc.
 - b. Mountain-building: Leads to the formation of mountains due to folding and faulting.

- *2. **Which type of movements have led to the formation of the major fold mountains in the world?**

Ans:

- i. The slow movements in the interior of the earth, results in transfer of energy.
- ii. The energy waves cause horizontal pressure on the layers of rocks.
- iii. When the pressure on the layers of soft rocks is very high, they form large scale folds.
- iv. The complexity of these folds goes on increasing and as a result the surface of the earth gets uplifted and fold mountains are formed.

Therefore, slow movements have led to the formation of the major fold mountains like the Himalayas, the Aravalis, the Rockies, the Andes, and the Alps in the world.

- *3. **Give reasons why an earthquake occurs.**

Ans:

- i. Earthquake occurs due to the energy released by increased tension in the earth's crust by the movements occurring in its interior.
- ii. Some of the major causes of earthquake are as follows;
 - a. Moving of the plates in the earth's interior
 - b. Colliding of plates
 - c. Plates sliding below the other
 - d. Forming of fractures in rock layers due to tension in the interior of the earth.
 - e. Occurring of volcanic eruptions

- *4. **Explain the types of seismic waves.**

Ans: The high energy released from the focus or the hypocenter of the earthquake travels to the earth's surface in the form of seismic waves. These waves can be divided into primary, secondary and surface waves.

i. Primary waves or 'P' waves:

- a. These waves travel at a very fast speed in radial direction from the focus and are the first ones to reach the earth's surface.
- b. These waves can travel through all the three states, viz. solid, liquid and gaseous. However, they change their direction while travelling through liquid medium.
- c. They are also called as forward-backward waves as they move to and fro. The particles in the rock and the buildings on the earth's surface move back and forth, due to these waves.



ii. Secondary waves or 'S' waves:

- a. These waves scatter in all directions from the focus and reach the earth's surface after the primary waves.
- b. The velocity of these waves is lesser than primary waves.
- c. The secondary waves can travel only through solid medium. They get absorbed when they enter the liquid medium.
- d. The particles lying in the way of these waves move up and down in the direction of energy transfer, resulting in up and down motion of the buildings and structures on the earth's surface.
- e. These waves are more destructive than the primary waves.

iii. Surface waves or 'L' waves:

- a. These waves travel from the epicenter on the earth's surface in the direction of the circumference of the earth along the crust.
- b. They are generated after the primary and secondary waves reach the epicenter.
- c. These waves are highly destructive.

***5. How is the magnitude of the earthquake related to the collapse of houses?**

Ans:

- i. The magnitude of the earthquake will determine the intensity of the seismic waves generated from the focus of the earthquake.
- ii. The seismic waves are of three types, namely primary waves, secondary waves and surface waves.
- iii. The primary waves cause forward-backward movement of the buildings and other structures on the earth's surface. This does not cause a lot of destruction.
- iv. The secondary waves reach earth's surface after primary waves and the surface waves are generated after both the primary and secondary waves. Both of these waves are more destructive than the primary waves.
- v. The increase in the magnitude of the earthquake will result in the above three waves to cause more destruction.

Thus, the magnitude of the earthquake and the collapse of houses are related.

***6. What are the effects of earthquakes on the earth's surface and human life?**

Ans:

- i. The effect of earthquake on the earth's surface and human life are as follows:
 - a. Earthquakes develop cracks or fractures on the earth's surface.
 - b. They can also cause landslides leading to sliding of rocks which may destroy human life.
 - c. Earthquakes also lead to the change in the course of groundwater. Due to this some wells

- d. may get water while some may get dried up. As a result certain areas may face scarcity of water.
- d. Earthquake causes some areas to get uplifted while some get subsided.
- e. They also lead to generation of tsunamis in oceans. These waves can cause great loss of life and property in the coastal areas.
- f. Avalanches occur in snow covered areas due to earthquakes.
- ii. The effect of earthquake on human life are as follows:
 - a. Buildings collapse during earthquakes, resulting in loss of life and property.
 - b. Earthquakes also disrupt the transport routes and communication system.

***7. Explain the types of volcanoes on the basis of periodicity of eruption with examples.**

Ans: The different types of volcanoes based on the periodicity of their eruption are as follows:

- i. **Active volcanoes:** The volcanoes which erupt regularly even in present times are known as active volcanoes.
E.g.: Mt Fujiyama in Japan, Mt. Stromboli in Mediterranean Sea
- ii. **Dormant volcanoes:** The volcanoes which have not erupted from a long time but can suddenly become active are known as dormant volcanoes.
E.g.: Mt. Vesuvius in Italy, Mt. Katmai in Alaska, Barren Island, India
- iii. **Extinct volcanoes:** The volcanoes which have not erupted from a long time in the past and are not likely to erupt even in the future are called extinct volcanoes.
E.g.: Mt. Kilimanjaro in Tanzania

8. Write about the different effects of volcanoes on the earth's surface and human life.

Ans: The various effects of eruption of volcanoes are mentioned below:

- i. There is tremendous loss of life and property around the site of volcanic eruption.
- ii. The dust, smoke, ash, gases, water vapor, etc. which are given out during volcanic eruption remain in air for long time and create imbalance in the environment.
- iii. Several minerals are found near the earth's surface where volcanic eruption has taken place.
- iv. The land near the site of volcanic eruption becomes fertile.
- v. Volcanoes occurring below the ocean floors can generate tsunamis, which lead to large scale destruction of life and property along the coastal areas.
- vi. Volcanoes can also cause formation of new land or even lead to disappearance of islands.
- vii. Also, lakes are formed at the mouth of the craters of dead volcanoes when rain water accumulates in them.



In-text Question

1. Can you tell? *(Textbook page no. 9)*
Read the news article shown in the Newspaper Snippet in Fig. 2.1 of your textbook. Observe the photograph and answer the questions.
 - i. What caused the large-scale casualties?
Ans: The powerful earthquake which struck Nepal, caused large-scale casualties.
 - ii. What was the magnitude of the earthquake?
Ans: The magnitude of the earthquake was 7.9 on Richter scale. The magnitude of aftershock was 6.6 on Richter scale.
 - iii. Which country was the most affected by this earthquake?
Ans: Nepal was affected the most by this earthquake.
 - iv. Where was the epicenter of the earthquake?
Ans: The epicenter of the earthquake was at Lamjung, around 80 kilometers towards the northwest of Kathmandu in Nepal.
 - v. Which are the other affected areas?
Ans: Several parts of North and Northeast India including cities in Bihar, West Bengal and Uttar Pradesh were also affected by the earthquake. Tremors were also felt in 22 states of India as well as in countries like China, Bhutan, Pakistan, Bangladesh and Tibet.
 - vi. At what depth was the focus located?
Ans: The focus of the earthquake was located at a shallow depth of 11 kilometres.
 - vii. What kind of damage is seen because of the earthquake?
Ans: Due to the earthquake nearly 1500 people were killed and over 1000 injured in Nepal and the number of casualties in other countries included 53 in India, 12 in Tibet and 2 in Bangladesh.
 - viii. According to you, what could be the reason behind the earthquake?
Ans: Some of the reasons which could have led to the occurrence of the earthquake are:
 - a. Movement of the plates in the interior of the earth and their colliding and sliding below each other.
 - b. Formation of fractures or faults in the layers of rocks due to the pressure built up in the interior of the earth.
 - ix. Have you ever experienced a similar earthquake? Discuss.
(Students are expected to answer the above question on their own.)
2. Try this. *(Textbook page no. 9)*
[Note for teachers: The steps in the activities are important. Make sure every student participates. Lead the students to the topic through discussion.]

As shown in fig 2.2 (A) of your textbook, arrange your notebooks on each other. Place 3-4 objects like chalk, duster, sharpener, eraser, etc. on them. Now, quickly take out a notebook without affecting the others according to fig. 2.2 (B) in your textbook.

Observe what happens. Discuss in class.

Ans: When one notebook is taken out quickly, the notebooks above it would slightly move down due to the force applied, even if they don't fall off. The objects on the top of the stack may also move or even roll off and fall from the uppermost notebook, due to the horizontal movement of the notebooks.

3. Try this. *(Textbook page no. 10)*
Arrange the notebooks and keep chalk, duster, sharpener, rubber, etc. on them as in previous step (fig. 2.3 (A)). Now, give a slight push to this structure and observe what happens. Then again give a hard push. Observe what happens.
Carry out a discussion on all these activities. *(See fig. 2.3 (B))*

Ans: Case i: When a slight push is given to the stack of books, they will move a little to and fro. However, they may not fall off. The longer objects kept in vertical position on the stack will fall down, but the smaller objects will remain in the same position.

Case ii: If the stack of books is pushed hard, the books will slide over each other and may even fall off. The objects kept on the stack will fall down and may even roll off the stack.

4. Try this. *(Textbook page no. 11)*
Activity 1:
Take a 30 cm long paper strip. Place your hands on both the ends of the strip. Move both the hands towards each other giving pressure on the strip. Observe what happens to the strip.
Ans: As the ends of the strip are brought together by placing and moving the hands on the strip, pressure gets applied on the centre of the strip. Due to this pressure, the strip moves and folds are formed on it.
5. Try this. *(Textbook page no. 12)*
Activity 2 :
Take a long strip of thin paper. Hold one end of the paper in your right hand. Hold the other in your left hand. Pull both the ends away from each other. Observe what happens to the paper strip.
Ans: When the ends of the strip are pulled away from each other by holding them in hand, tension is created in the centre of the strip and the strip may tear off around the centre.



6. **Try this.** (*Textbook page no. 13*)
Take 3 notebooks of same size. Hold them tightly together at a height of 2-3 cm. Remove the two notebooks on each end away from the central one. Observe what happens. Draw the diagram emerging because of the notebooks in your notebook.

Ans: When the grip of hands holding the two notebooks on each end, is loosened, the book in the middle will move slightly downwards. If further loosened, the book in the middle will fall down on the table.

[*Note: Students are expected to draw the diagram emerging because of the notebooks, on their own.*]

7. **Try this.** (*Textbook page no. 15*)
i. **Hang a heavy bag or pouch on the hook of a spring balance as shown in fig 2.13 (A). Pull the bag down and release it. Observe the spring and note the movement of spring.**

Ans: When the bag or pouch on the spring balance is pulled and left, the pointer on the balance keeps moving to and fro in the vertical direction till it slowly becomes stable at one point.

- ii. **As shown in fig 2.14, make the students stand holding the ends of a rope. Ask one student to give a jerk to the rope by pulling it up and down with hand. Observe what happens and note the movement of rope.**

Ans: When one student gives a jerk to the rope, it moves in the form of wave and transfers the motion to the other end.

- iii. **Spread 'rangoli' on a large plate. Flick on the lower side of the plate slightly with your fingers. Observe what happens.**

Ans: When the plate is flickered with fingers, the rangoli (if spread properly) gets disturbed and spreads all over the plate.

8. **Find out.** (*Textbook page no. 16*)
After you complete all the three activities given above, compare them with each of the seismic waves and identify which activity is similar to which type of wave.

Ans: The first activity in the earlier question resembles primary type of seismic waves which travel in to and fro type of motion.

The second activity resembles secondary type of seismic waves wherein the energy travels in up and down motion.

The third activity resembles surface waves which spread over the far and wide on the surface.

9. **Give it a try.** (*Textbook page no. 16*)
i. **Collect information regarding precautions to be taken during an earthquake. Give a demonstration in the class.**
ii. **Collect information and pictures related to advanced seismograms like the one shown in**

- fig 2.11. Write about its working mechanism in your own words.**

(Students are expected to attempt the above activities on their own.)

10. **Make friends with maps!** (*Textbook page no. 17*)
Read fig 2.18 in your textbook and answer the questions. As a supplementary material to this exercise, take help from a globe or a physical map of the world.

- i. **Examine the plate boundaries in the given map and write the names of the plates.**

Ans: The names of the major plates given in the map are as follows:

- Eurasian plate
- Indo-Australian plate
- North American plate
- South American plate
- African plate
- Pacific plate
- Antarctic plate

Apart from those mentioned above, the other plates shown in the map are as follows:

- | | |
|------------------|--------------------|
| a. Arabian plate | b. Somali plate |
| c. Scotia plate | d. Cocos plate |
| e. Nazca plate | f. Caribbean plate |

- ii. **On which side of the continents of North and South America are the earthquake prone zones located? Which mountains are located there?**

Ans:

- The earthquake prone zones are located to the west side of the continents of North and South America.
- The Rocky Mountains and the Andes Mountains are found in these zones.

- iii. **In which mountainous zone in Asia does the earthquake-prone zone lies?**

Ans: The earthquake-prone zone in Asia lies in the Himalayan mountainous zone.

- iv. **In which region are the volcanoes concentrated in Africa? What could be the reason?**

Ans: The volcanoes in Africa are concentrated in the eastern region along the equator, because this region is located on the plate-creating boundaries of Africa plate and Somali plate.

- v. **Correlate earthquake regions, distribution of volcanoes and plate boundaries.**

Ans: As seen from the map, the earthquake regions and the volcanoes are mostly located along the plate boundaries.

Activity

- *1. **Make a model showing the central and fissure type volcanoes.**
(Students are expected to attempt the above activities on their own.)



- *2. Gather information through internet about earthquakes which have occurred in India in the past 10 years on the basis of the following points.

Date			
Time			
Magnitude (Richter Scale)			
Epicentre			
Depth (In Kilometers)			
Area affected			
Loss/Damage caused			

Conclusion: _____

Ans:

Date	11-Aug-2007	18-Sept-2011	04-Jan-2016
Time	01:30 am IST	06:30 pm IST	04:35 am IST
Magnitude (Richter Scale)	7.5	6.9	6.7
Epicentre	Landfall Island, Andaman, India	Kanchenjunga,	Noney, Manipur, India
Depth (In Kilometers)	33.1 km	19.7 km	55 km
Area affected	Andaman island	Nepal, and West Bengal and Sikkim in India	Northeast India
Loss/Damage caused	Minor	Major	Major

[Note: Students are expected to write about other earthquakes which have occurred in India and draw conclusion based on their observations.]

Chapter Assessment

Total Marks: 20

- Q.1. Fill in the blanks.** [2]
 i. Generally the movements in the earth's interior occur in the upper layer of the _____.
 ii. When the land between two fractures subsides it is known as _____.

- Q.2. Match the following.** [3]

Group 'A'		Group 'B'	
i.	Primary seismic waves	a.	Moves the particles up and down in the direction of energy transfer
ii.	Secondary seismic waves	b.	Travel in the direction of the circumference of the earth
iii.	Surface seismic waves	c.	Moves the particles forward and backward in the direction of energy transfer
		d.	Travel in perpendicular direction to primary waves

- Q.3. Write notes on. (Any one)** [2]
 i. Occurrence of earthquakes
 ii. Continent – building movements

- Q.4. (A) Fill the following information in the given map. (Any two)** [2]
 i. Mt. Kilimanjaro ii. Mid-Atlantic Earthquake zone
 iii. Mt. Fuji iv. Krakatoa
 v. Mt. Vesuvius



- (B) Observe the given map and answer the following questions. (Any two)** [2]
(Refer figure 2.18 in textbook)
- On which side of the continents of North and South America are the earthquake prone zones located?
 - In which mountainous zone in Asia does the earthquake-prone zone lie?
 - In which region are the volcanoes concentrated in Africa?
 - Correlate earthquake regions, distribution of volcanoes and plate boundaries.
- Q.5. Give geographical reason. (Any one)** [3]
- Most of the volcanoes are found on the plate boundaries.
 - There is a difference in the formation of the Meghalaya Plateau and the Deccan Plateau.
- Q.6. Draw labelled diagram. (Any one)** [2]
- Fold mountain
 - Block mountain
- Q.7. Answer the following. (Any one)** [4]
- Explain the types of volcanoes on the basis of periodicity of eruption with examples.
 - How is the magnitude of the earthquake related to the collapse of houses?

Scan the given Q. R. Code in *Quill - The Padhai App* to view the answers of the Chapter Assessment.





AVAILABLE NOTES FOR STD. IX: (Eng., Mar. & Semi Eng. Medium)

PERFECT SERIES

- English Kumarbharati
- मराठी अक्षरभारती
- हिंदी लोकभारती
- हिंदी लोकवाणी
- आमोद: सम्पूर्ण-संस्कृतम्
- आनन्द: संयुक्त-संस्कृतम्
- History and Political Science
- Geography
- Mathematics (Part - I)
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- मराठी कुमारभारती
- हिंदी लोकभारती
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