Chapter 2: Shaping of the Earth's Surface

Section A: Multiple Choice Questions.

1. Who proposed the plate tectonics theory?
   a) Isaac Newton b) W.J. Morgan c) Charles Darwin d) Albert Einstein

2. Tectonic plates moving directly towards each other form a _____ boundary.
   a) Divergent b) Transform c) Convergent d) Neutral

3. A dramatic, steep fall of water along a river's upper course is called a:
   a) Delta b) Meander c) Plain d) Waterfall

4. A natural bridge-like rock structure carved out of cliffs by sea waves is a:
   a) Arch b) Stack c) Cliff d) Cave

5. The ancient book Bṛihatsaṁhitā was written by:
   a) Aryabhata b) Varāhamihira c) Kalidasa d) Chanakya

6. Which Sanskrit text gives guidelines on land assessment?
   a) Vedas b) Ramayana c) Arthaśhāstra d) Mahabharata

7. The "Zabo system" is practiced in:
   a) Assam b) Mizoram c) Manipur d) Nagaland

8. The Silk Route was mainly shaped by:
   a) Mountains b) Rivers c) Deserts d) Forests

9. Which region flourished due to coastal trade?
   a) South India b) North India c) Central Asia d) Himalayan

10. Unplanned construction, deforestation, and mining on steep slopes cause:
    A) Dust storms B) Volcanic eruptions C) Landslides D) GLOFs

Section B: Fill in the Blanks.

water, upper, Baratang, lithosphere, sophisticated, bhukampa, topsoil, Pacific, natural,smooth

1. The _____ is broken into tectonic plates.
2. The _____ Plate is the largest plate.
3. In early times, earthquakes were called _____.
4. _____ Island is located in the Andaman and Nicobar Islands.
5. The mud volcano is caused by underground _____ forces.
6. Erosion removes fertile _____ needed for crops.
7. A continuous contour trench (CCT) is a _____ conservation technique.
8. The Sindhu-Sarasvatī civilisation used _____ techniques for water management.
9. Agents of gradation help to _____ the Earth's surface over time.
10. Waterfalls are formed in the _____ course of rivers.

Section C: Write True or False in the space provided.

1. The Earth's surface is completely static and never changes.
2. Weathering involves the physical transport of rocks from one region to another. [_____]
3. Running water is one of the most powerful agents of erosion. [_____]
4. Soluble rocks can be dissolved by underground water to form caves. [_____]
5. Earthquakes are generated by exogenic (external) forces of the Earth. [_____]
6. Overgrazing is an effective way to protect soil from wind and water erosion. [_____]
7. Earth's surface features are modified exclusively by natural processes, with zero human influence. [_____]
8. Avalanches are caused by unstable snowpacks sliding down steep slopes. [_____]
9. GLOFs are caused by the sudden, rapid release of water from glacial meltwater lakes. [_____]
10. Wind erosion is strongest and most effective in areas covered by dense vegetation. [_____]

Section D: Draw lines to connect the geological feature with its correct description or name.

Column A (Feature/Concept)	**Column B (Description/Term)**
1. Semi-molten mantle layer	A. V-shaped Valley
2. Outer layer of the Earth	B. Delta
3. Valley shaped by upper course rivers	C. Asthenosphere
4. Valley carved by glaciers	D. Crust
5. Landform at a river's mouth	E. Bhūkampa
6. Traditional Sanskrit term for earthquakes	F. U-shaped Valley

Ans. _____, _____, _____, _____, _____,_____

Section E: Give Reasons Questions.

1. The Earth is called dynamic in nature.

Ans. _____

_____

2. It is important to study plate tectonics.

Ans. _____

_____

3. Mud volcanoes are considered unique.

Ans. _____

_____

4. Earthquakes occur frequently in certain regions.

Ans. _____

_____

5. Volcanic eruptions bring materials from inside the Earth.

Ans. _____

_____

6. Landslides occur during heavy rainfall.

Ans. _____

_____

Section F: Short question answers.

1. What causes changes on the Earth's surface?

Ans. _____

_____

2. How do tectonic plates move?

Ans. _____

_____

3. What is weathering? Explain its importance.
Ans. _____
_____

4. What is the role of proper drainage in slope stability?
Ans. _____
_____

5. What causes mud volcanoes?
Ans. _____
_____

6. What is the function of check dams?
Ans. _____
_____

7. What are agents of gradation?
Ans. _____
_____

8. How are waterfalls formed?
Ans. _____
_____

9. What are floodplains?
Ans. _____
_____

10. What are folding and faulting?
Ans. _____
_____

Section G: Long Answer Question.

1. Explain the role of internal and external forces in shaping the Earth's surface.
Ans. _____
_____
_____
_____
_____

2. Describe the processes of weathering, erosion, and deposition.
Ans. _____
_____
_____
_____
_____

3. Describe the causes and effects of landslides.
Ans. _____
_____
_____
_____
_____

4. Explain different types of disasters associated with landforms.
Ans. _____
_____
_____
_____
_____

5. Explain how human activities affect the Earth's surface.

Ans. _____

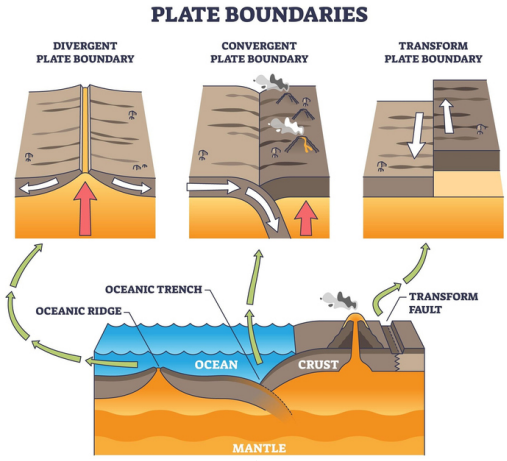
_____

_____

_____

_____

Section H: Examine the diagram below showing how tectonic plates interact at their boundaries.



Based on the diagram and your textbook:

1. Identify which boundary is responsible for the formation of the Himalayas and explain why.

Ans. _____

_____

2. Explain what happens at a divergent boundary like the Mid-Atlantic Ridge.

Ans. _____

_____

Section I: One Word Answers.

1. The scientist who proposed the theory of plate tectonics: _____
2. Any natural feature on the Earth's surface: _____
3. The plate boundary where tectonic plates slide past each other: _____
4. The volcanic and earthquake-prone region around the Pacific Ocean: _____
5. A major natural disaster directly triggered by sudden plate movement: _____
6. The process of rocks breaking down in place without movement: _____
7. The eruption of molten rock from beneath the Earth's crust: _____
8. A massive, slow-moving body of ice: _____
9. The unique, bubbling gas-pressure volcano at Baratang Island: _____
10. The famous mountain pass that facilitated cultural exchanges into India: _____

Section J: Assertion & Reason Questions.

1. Assertion (A): Fold mountains are formed at divergent plate boundaries.
   Reason (R): Divergent boundaries cause plates to move apart.

Ans. _____

2. Assertion (A): Chemical weathering is faster in dry climates.
   Reason (R): Water is not required for chemical reactions.

Ans. _____

3. Assertion (A): Transform boundaries create new crust.
   Reason (R): Plates slide past each other at transform boundaries.

Ans. _____

4. Assertion (A): Constructive forces build new landforms.
   Reason (R): Deposition of sediments creates features like deltas.

Ans. _____

5. Assertion (A): Waves shape coastal landforms.
   Reason (R): Waves continuously erode and deposit materials.

Ans. _____

Section K: Answer the following questions in words.

3. Name two landforms created by glaciers.

   _____ _____

4. Name the three layers of the Earth.

   _____ _____ _____

5. Name any two landforms formed by plate movements.

   _____ _____

6. Name two types of plate boundaries.

   _____ _____

7. Name the types of weathering.

   _____ _____

8. Name two agents of erosion.

   _____ _____

9. Name any two techniques used by the Sindhu-Sarasvatī civilisation.

   _____ _____

10. Name any two agents of gradation.

    _____ _____

11. Name any two rivers that supported early civilisations.

    _____ _____

12. Name any two areas prone to dust storms.

    _____ _____

Answer

Section A: Multiple Choice Questions.

1. b) W.J. Morgan	2. c) Convergent	3. d) Waterfall	4. a) Arch
5. b) Varāhamihira	6. c) Arthaśhāstra	7. d) Nagaland	8. c) Deserts
9. a) South India	10. C) Landslides		

Section B: Fill in the Blanks.

1. lithosphere	2. Pacific	3. bhukampa	4. Baratang
5. natural	6. topsoil	7. water	8. sophisticated
9. smooth	10. upper		

Section C: Write True or False

1. False	2. False	3. True	4. True	5. False
6. False	7. False	8. True	9. True	10. False

Section D: Match the following.

1 – C 2 – D 3 – A 4 – F 5 – B 6 – E

Section E: Give Reasons Questions.

1. The Earth is called dynamic in nature because its surface is constantly changing due to internal and external forces.
2. It is important to study plate tectonics because it helps us understand earthquakes, volcanoes, and the formation of landforms.
3. Mud volcanoes are considered unique because they erupt mud, gases, and water instead of lava.
4. Earthquakes occur frequently in certain regions because these areas lie along active plate boundaries.
5. Volcanic eruptions bring materials from inside the Earth because magma rises to the surface through cracks in the crust.
6. Landslides occur during heavy rainfall because water loosens the soil and reduces friction on slopes.

Section F: Short question answers.

1. Changes on the Earth's surface are caused by internal forces (like earthquakes and volcanoes) and external forces (like weathering, erosion, and deposition).
2. Tectonic plates move due to convection currents in the mantle, which push and pull the plates.
3. Weathering is the breaking down of rocks into smaller pieces. It is important because it forms soil and shapes landforms.
4. Proper drainage helps in slope stability by removing excess water, which prevents soil from becoming loose and reduces landslides.
5. Mud volcanoes are caused by underground gases and pressure forcing mud and water to the surface.
6. The function of check dams is to slow down water flow, prevent soil erosion, and help in water conservation.
7. Agents of gradation are natural forces like water, wind, and ice that wear down and build up the Earth's surface.
8. Waterfalls are formed when water flows over a steep drop or hard and soft rock layers in the upper course of a river.
9. Floodplains are flat areas of land formed by river deposition during floods.
10. Folding is the bending of rock layers due to pressure, while faulting is the breaking and displacement of rocks.

Section G: Long Answer Question.

1. Internal forces originate inside the Earth and include processes like earthquakes, volcanic eruptions, folding, and faulting. These forces build up landforms such as mountains, plateaus, and rift valleys. External forces act on the Earth's surface and include weathering, erosion, and deposition by agents like water, wind, and ice. These forces wear down high areas and fill low areas, continuously reshaping the landscape. Together, internal and external forces constantly modify the Earth's surface.
2. Weathering is the breaking down of rocks into smaller pieces without movement, caused by physical, chemical, or biological processes. Erosion is the removal and transportation of these weathered materials

by agents like water, wind, and glaciers. Deposition occurs when these materials are laid down in new locations, forming landforms like deltas and floodplains. These three processes work together to shape and transform the Earth's surface over time.

3. Landslides are caused by factors such as heavy rainfall, earthquakes, volcanic activity, deforestation, and construction on steep slopes. These factors make the soil loose and unstable. The effects of landslides include loss of life and property, destruction of roads and buildings, and blockage of rivers. They also lead to soil erosion and environmental damage.
4. Different types of disasters associated with landforms include earthquakes, volcanic eruptions, landslides, avalanches, and glacial lake outburst floods (GLOFs). Earthquakes occur due to sudden movements of tectonic plates. Volcanic eruptions release lava, ash, and gases. Landslides and avalanches involve the rapid movement of rocks or snow down slopes. GLOFs occur when glacial lakes suddenly burst. These disasters can cause severe damage to life, property, and the environment.
5. Human activities such as deforestation, mining, urbanization, and construction greatly affect the Earth's surface. Removing vegetation increases soil erosion, while mining and construction disturb land stability. Unplanned development on slopes can lead to landslides. Agricultural practices and dam construction also alter natural landscapes. These activities can accelerate natural processes and lead to environmental degradation.

Section H: Examine the diagram below showing how tectonic plates interact at their boundaries.

1. Convergent boundary — The Himalayas formed at a convergent boundary because two continental plates (the Indian Plate and the Eurasian Plate) collided. Instead of one plate subducting, both plates crumpled and uplifted, forming large mountain ranges.
2. At a divergent boundary like the Mid-Atlantic Ridge, tectonic plates move apart. Magma rises from the mantle to fill the gap, cools, and forms new crust, creating an oceanic ridge.

Section I: One Word Answers.

1. Morgan	2. Landform	3. Transform	4. Ring of Fire	5. Earthquake
6. Weathering	7. Volcano	8. Glacier	9. Mud Volcano	10. Khyber Pass

Section J: Assertion & Reason Questions.

1. A is false, R is true.
2. A is false, R is false.
3. A is false, R is true.
4. Both A and R are true, and R is the correct explanation of A.
5. Both A and R are true, and R is the correct explanation of A.

Section K: Answer the following questions in words.

1. Moraine, Valley
2. Crust, Mantle, Core
3. Mountains, Rift valleys
4. Convergent boundary, Divergent boundary
5. Physical weathering, Chemical weathering
6. Water, Wind
7. Drainage system, Town planning
8. Water, Wind
9. Nile, Indus
10. Deserts, Arid regions