

Revision Notes

Class 9 - Geography

Chapter 2 Physical Features of India

India is a vast country with diverse landforms, including the lofty Himalayan range, the fertile northern plains, coastal plains in the east and west coasts of India, the Peninsular plateau in the south, and two groups of islands in the Arabian Sea and the Bay of Bengal, respectively. Earth scientists have sought to explain the formation of physical features using several theories, one of which is the "Theory of Plate Tectonics."

Formation of the landscape on the basis of the Theory of Plate Tectonics

The 'Theory of Plate Tectonics' explains that the upper part of the Earth which is known as the crust has been formed out of seven major, and some minor plates. The movements of the plates result in the building up of stresses within the plates leading to folding, faulting and volcanic activity. The movements of plates into three types:

1. A convergent boundary is one in which the plates move towards one other.
2. A divergent boundary is one in which the plates move away from each other.
3. When two plates encounter, they may either collide or disintegrate, or one may slip under the other to form a transform boundary.

Over millions of years, the movements of these plates have altered the size and position of the continents, influencing the evolution of India's current landform features. The majority of volcanoes and earthquakes in the world occur along plate margins, however, some do occur within the plates.

The peninsular part of India is made up of one of the world's oldest landmasses, Gondwana land. It was formerly a unified landmass made up of India, Australia, South Africa, South America, and Antarctica, but it later drifted apart due to conventional currents.

Physical Features of India and Their Characteristics

India's physical characteristics are classified into the following physiographic divisions:

The Himalayan Mountains

- The Himalayan Mountains stretch over India's northern boundaries. These mountain ranges run west-east from the Indus to the Brahmaputra.
- The Himalayas are young-fold mountains that are the loftiest and one of the most rugged mountain barriers of the world.
- The Himalayas span approximately 2400 km and vary in width from 400 km to 150 km from Kashmir to Arunachal Pradesh.
- In terms of longitudinal extent, the Himalayas have three parallel ranges, namely:
 - Greater Himalayas or the Himadri: The northern most range is known as the Himadri or Inner or Great Himalayas. It is the most continuous range, consisting of the highest peaks with an average elevation of 6000 metres. The core of this Himalayan region is made of granite and is asymmetrical in nature.
 - Lesser Himalayas or the Himachal: The rugged mountain region to the south of the Himadri is known as the Lesser Himalayas or Himachal. The altitude of this mountain range varies between 3700 and 4500 meters whereas the average width is 50 kilometres. It includes ranges like Pir Panjal, Dhauladhar, and Mahabharat, of which the Pir Panjal range forms the longest and the most important range.
 - The Shiwaliks: The outermost range of the Himalayas is known as the Shiwaliks whose altitude varies between 900 and 1100 metres and extends over a width of 10-50 kilometres. The term "Duns" refers to the longitudinal valley that spans between the Lesser Himalayas and the Shiwaliks. Some of the well-known Duns are Dehra Dun, Kotli Dun, and Patli Dun.
- The Himalayas have also been divided into regions from west to east:
 - The Himalayan region between the Indus and the Satluj has traditionally been referred to as the Punjab Himalaya, but it is also known as Kashmir and Himachal Himalaya from west to east.
 - The Kumaon Himalayas are the Himalayas between the Satluj and Kali rivers.
 - The Nepal Himalayas are defined by the Kali and Teesta rivers.
 - Assam Himalayas refer to the area between the Teesta and Dihang rivers.

The Himalayas curve sharply to the south beyond the Dihang gorge and spread along India's eastern border, known as the Purvachal, or Eastern hills and mountains. Purvachal is comprised of the Patkai, Naga, Manipur, and Mizo hills.

The Northern Plains

- The northern plain was determined by the interplay of India's three major river systems, namely the Indus, Ganga, and Brahmaputra, as well as their tributaries.
- The northern plain expands over an area of about 7 lakh sq. km. which is 2400 km long and 240-320 km broad.
- It comprises alluvial soil deposits which are formed at the basin lying at the foothills of the Himalayas. They are fertile and densely populated because of their favourable climate and agricultural productivity.
- It is broadly divided into three sections, namely:
 - The Punjab Plains are the westernmost section of the Northern Plain. The Indus and its tributaries, the Jhelum, Chenab, Ravi, Beas, and Satluj, comprise this plain.
 - The Ganga plain which is situated between the Ghaggar and Teesta rivers. It is spread across North India, including Haryana, Delhi, Uttar Pradesh, Bihar, and parts of Jharkhand and West Bengal.
 - The Brahmaputra plain lies to the east of the Ganga plain in the state of Assam.
- The Northern Plains can be separated into four regions based on the variations in relief features.
 - The rivers deposit pebbles in a narrow belt 8 to 16 km wide that runs parallel to the Shiwaliks' slopes, after descending from the mountains. This is known as bhabar.
 - Streams and rivers re-emerge, forming the terai, a damp, swampy, and marshy region.
 - The majority of the northern plain is made up of older alluvium. It is located above the floodplains of the rivers and has a terrace-like feature known as bhangar.
 - Kankar is the name given to the soil in the Bhangar region, which comprises calcareous deposits.
 - Khadar refers to the floodplains' newer, younger deposits.

The Peninsular Plateau

- The Peninsular plateau is a tableland, it is made up of ancient crystalline, igneous, and metamorphic rocks. It was formed as a result of the breaking and drifting of the Gondwana land. The black soil area known as Deccan Trap is one of the Peninsular plateau's distinguishing features.
- This plateau consists of two broad divisions-
 - The Central Highlands: This division lies to the north of the Narmada River and encompasses a large portion of the Malwa plateau. The central highlands are bounded on the north-west by the Aravalli range and on the south by the Vindhyan range. The Central Highlands are wider in the west as compared to the east. The Bundelkhand and Baghelkhand are the plateau's eastward extensions. The Chhota Nagpur Plateau denotes the farther eastward extension drained by the Damodar river.
 - The Deccan Plateau: It is a triangular landmass to the south of the Narmada River. The Plateau is also evident in the northeast, where it is known as the Meghalaya, Karbi-Anglong Plateau, and North Cachar Hills. In the north, the Satpura range flanks its broad base, while the Mahadev, Kaimur Hills, and Maikal range that comprise of its eastern extensions.
- The Deccan Plateau's western and eastern edges are marked by the Western and Eastern Ghats, respectively.
- The Western Ghats are higher in elevation than the Eastern Ghats. The highest peak in the Western Ghats is Anaimudi, which stands at 2695 metres, and the highest peak in the Eastern Ghats is Mahendragiri, which stands at 1501 metres.

The Indian Desert

- Near the western margins of the Aravalli Hills, the Indian Desert is an undulating sandy plain covered with sand dunes.
- Large areas of the Indian Desert near Pakistan are covered in crescent-shaped dunes known as barchans.
- This region receives about 150 mm of rain annually.
- The Luni River is the only large river in this region, owing to the arid climate and low vegetation cover.

The Coastal Plains

- A coastal plain is a low-lying, flat area of land that is adjacent to the ocean.
- Two narrow strips of plain lands are found to the west and east of the peninsular plateau, which is known as the Western Coastal Plain and Eastern Coastal Plain, respectively.
- The Western Ghats and the Arabian Sea form a barrier along the western coast. It is a narrow plain divided into three sections.
- The northern part of the west coast is called the Konkan, from Mumbai – Goa. The Kannad Plain is the central stretch, and the Malabar Coast is the southern stretch.
- The Eastern Coastal Plains is a large area of a landmass that stretches between the Eastern Ghats and the Bay of Bengal. The northern part is known as the Northern Circar, while the southern part is known as the Coromandel Coast.
- On the east coast, large rivers such as the Mahanadi, Godavari, Krishna, and Kaveri have formed extensive deltas. Lake Chilika is a significant feature on the east coast.

The Islands

- The Andaman and Nicobar Islands and the Lakshadweep Islands are two groups of islands in India. These islands lie close to the equator, have an equatorial climate, and a dense forest cover.
- In the Arabian Sea, the Lakshadweep Islands group lies near Kerala. The Lakshadweep Islands were once known as Laccadive, Minicoy, and Amindive. The administrative headquarters of Lakshadweep is located on Kavaratti Island. The flora and fauna of this island group are extremely diverse.
- The Andaman and Nicobar Islands are an island group in the Bay of Bengal. These islands are a ridge of submarine mountains. The entire group of islands is divided into two broad categories i.e the Andaman in the north and the Nicobar in the south.

Important Questions and Answers:

1. Which are the major physiographic divisions of India?

Ans: The major physiographic divisions of India are as follows:

- The Great Himalayas
- The Northern Plains
- The Peninsular Plateau
- The Coastal Plains, namely the Western and Eastern Coastal plains
- The Islands

2. How were the Himalayas formed?

Ans: The Himalayas were formed by the collision of India and Eurasian tectonic plates. The northern margin of the Indian plate was pushed beneath the Eurasian plate, causing the Himalayas and Tibetan Plateau to rise. The Himalayas were formed by the uplift of the Tethys, a geosyncline accumulation of sedimentary rocks.

3. Differentiate between Bhangar and Khadar.

Ans:

| Bhangar | Khadar |
|--|---|
| It is the old alluvial soil which is found away from the river. | It is the newer alluvial soil which is found near the river basin. |
| It is coarse because it is made up of calcareous deposits known as Kankar. | Every year, Khadar is replenished. It is extremely fertile and ideal for cultivation. |
| The soil in this region is dark in colour and is well-drained. | The silt comprises clay, sand and mud. It is light in colour. |

4. Write a short note on the Central Highlands.

Ans: This division lies to the north of the Narmada River and encompasses a large portion of the Malwa plateau. The central highlands are bounded on the north-west by the Aravalli range and on the south by the Vindhyan range. The Central Highlands are wider in the west than in the east. Bundelkhand and Baghelkhand are the eastward extensions of this plateau. The Chhota Nagpur Plateau denotes the farther eastward extension drained by the Damodar river. The major rivers that flow in this region from southwest to northeast are Chambal, Sind, Betwa, and Ken rivers.

5. Write short notes on the islands of India.

Ans: India has 247 island groups, 204 of which are in the Bay of Bengal and the rest in the Arabian Sea. In India, there are two groups of islands: the Lakshadweep Islands and the Andaman and Nicobar Islands. The Lakshadweep Islands group in the Arabian Sea lies near Kerala. These islands were once known as Laccadive, Minicoy, and Amindive. The administrative headquarters of Lakshadweep is located on Kavaratti Island. The Andaman and Nicobar Islands are a group of islands in the Bay of Bengal and are a ridge of submarine mountains. The entire group of islands is divided into two broad categories named as the Andaman in the north and the Nicobar in the south.

6. Write in brief about the Northern Plains.

Ans: The northern plains are a significant geographical division in India. It is also referred to as the Indo-Gangetic plains. The Northern Plains are located in the south of the Himalayas. It is formed by the silt deposited by the three major Himalayan rivers, the Indus, the Ganga, and the Brahmaputra along with its tributaries. These plains are the largest alluvial tract in India and thus are densely populated. These plains extend approximately 2400 km from west to east. The average width of these plains varies between 240 and 320 km.

7. Differentiate between converging and diverging tectonic plates.

Ans:

| Converging Tectonic Plates | Diverging Tectonic Plates |
|---|--|
| The plates that move towards each other is referred to as converging tectonic plates | The plates that drift away from each other are known as diverging tectonic plates. |
| The converging plate boundaries are known as destructive plates. | The diverging plates are known as constructive plates. |
| Converging plate boundaries cause explosive volcanic eruptions, earthquakes, and other natural disasters. | Diverging plate boundaries result in the formation of new oceanic crusts, as well as the formation of transform faults and other features. |

8. Write a short note on the Indian desert.

Ans: The Indian Desert, also known as the Thar Desert, is a sand dunes-covered area near the western margins of the Aravalli Hills. Barchans are crescent-shaped dunes that cover large areas of the Indian Desert near Pakistan. This region

receives about 150 mm of rain per year and has only one large river. The Luni River is the only large river in this region.