GEOGRAPHY

Physical Features of India

We find various types of landform features in India because its geographical extent is very vast. While the eastern part of our country is uneven, rugged and hilly, the Ganga-Brahmaputra region has vast stretches of plain lands.

Formation of the Land Forms

- Several factors such as the presence of different types of rocks, geological formations, weathering, erosion and deposition have influenced and affected the land features of India.
- Geologists have forwarded various theories regarding the formation of the physical features of the Earth.
- One of the most probable theories is the 'Theory of Plate Tectonics'. This theory postulates that the crust of the Earth has been formed out of seven major and some minor plates.
- The movement of the plates beneath the surface of the Earth creates tension, resulting in folding, faulting and volcanic activities.
- Plate movements are broadly categorised into three different types. When the plates come towards each other, they form **convergent boundaries**. When the plates move away from each other, they form **divergent boundaries**. **Transform boundaries** are formed when the plates horizontally move past each other.
- All these movements of the plates have gradually changed the size and the position of the continents over millions of years.
- The peninsular part of India, the oldest landmass, was part of the **Gondwanaland**. Previously, the Gondwanaland included Africa, South America, Australia, Antarctica and India. It was one single landmass.
- Because of the impact of convectional currents, the crust was split into many pieces. The Indo–Australian plate got separated from the Gondwanaland and drifted towards the north.
- As it drifted towards the north, it collided with the Eurasian plate. As a result of this collision, the sedimentary rocks which were settled in the large-scale depression in the Earth's crust called Tethys were folded and formed the mountain system of western Asia and the Himalayas.
- The upliftment of the mountains out of the Tethys Sea and the sinking of the northern part of the peninsular plateau led to the formation of a large basin.
- When the rivers flowed from the mountains in the north to the peninsular plateau in the south, the depression was filled because of depositional activities of the rivers. This led to the formation of the northern plains of India which gradually became rich in alluvial deposits.
- While the peninsular plateau of India composed of igneous and metamorphic rocks is one of the ancient landmasses on the surface of the Earth, the Himalayan Mountains are young fold mountains. They have high peaks, deep valleys with fast-flowing rivers.

Major Physiographical Divisions of India

The major physiographical divisions of India are

a. The Himalayan Mountains
b. The Northern Plains
c. The Peninsular Plateau

d. The Indian Desert
e. The Coastal Plains
f. The Islands

The Himalayan Mountains

- The Himalayan Mountains are young fold mountains which run in the west to east direction. They run over about 2,400 km.
- The width of the mountains varies from 2,400 km in Kashmir to 150 km in Arunachal Pradesh.
- The Himalayas are divided into three parallel ranges. They are
  - **The Himadri**: It is the northernmost range of the Himalayas. This range is also known as the Great or the Inner Himalayas. This range has some of the highest peaks with an average height of 6,000 metres. The core part of this Himalayan range is made of granite. As it is always covered with snow, many glaciers originate in this range.
  - **The Himachal**: It is also known as Himachal or the lesser Himalayas. This range lies to the south of the Himadri. The height of this mountain range varies from 3,700 to 4,500 metres. The Pir Panjal Range is the longest range. The Mahabharat and Dhauladhar ranges are also important ranges. This range has the famous valleys of Kashmir, Kangra and Kullu located in Himachal Pradesh. All the famous hill stations such as Mussoorie, Shimla, Nainital and Manali are located in the Himachal range.
  - **The Siwaliks**: These are the outermost range of the Himalayas. Their altitude varies between 900 and 1100 metres. The Siwaliks are formed as a result of depositions brought down by rivers from the northernmost Himalayan range. Dehradun, Kotli Dun and Patli Dun are some longitudinal valleys which lie between the lesser Himalayas and the Siwaliks.
- The Himalayas are also divided on the basis of regions running from west to east. The part of the Himalayas which lie between the Indus and Satluj rivers is known as the Punjab Himalayas. It is also known as the Kashmir Himalayas.
- The part of the Himalayas lying between the Satluj and Kali rivers is known as the Kumaon Himalayas. The Himalayas between the Kali and Tista rivers are known as the Kumaon Himalayas, and the part which lies between the Tista and Dihang rivers is known as the Assam Himalayas.
- The Himalayas spread in the eastern most parts of the country form the Purvanchal Range which comprises the Patkai Hills, Naga Hills, Manipur Hills and Mizo Hills.

The Northern Indian Plains

- The northern plains have been formed by three major river systems—the Indus, the Ganga and the Brahmaputra. This plain has been formed of alluvial soil.
- The Northern Plains are divided into three parts. The western part of the Northern Plains is known as the Punjab Plains. The larger part of this plain lies in Pakistan. It is drained by the River Indus, and its tributaries are the Ravi, Beas, Satluj, Jhelum and Chenab.
- The Ganga Plain is spread over the states of Haryana, Delhi, UP, Bihar and some parts of Jharkhand and West Bengal. Assam is part of the Brahmaputra plains.
- The Northern Plains present various relief features. They can be divided into four regions based on the variations in relief features:
  - When rivers come down from the mountains, they deposit pebbles in a narrow belt lying parallel to the Siwaliks. This is called the **Bhabar belt**. All rivers disappear into this belt.
  - To the south of the belt, the rivers and streams appear again and create the **Terai** region which is wet, swampy and marshy.

- A large part of the Northern Plains is formed of the older alluvial soil and presents a terrace-like feature. This is known as **bhangar**. Its soil consists of granules known as 'kankar'.
- The newer deposits are known as 'khadar'. These are so fertile that intensive cultivation is practised here.

The Peninsular Plateau

- The Peninsular Plateau of India is made of igneous and metamorphic rocks. The plateau is divided into two main divisions—the Central Highlands and the Deccan Plateau.
- The portion of the Peninsular Plateau which is located to the north of the River Narmada covering a huge part of the Malwa Plateau is known as the Central Highlands.
- To the northwest of the Central Highlands lies the Aravalli Range and to the south lies the Vindhyas Range.
- The east extension of the Central Highlands is known as the Bundelkhand and Baghelkhand.
- The Chota Nagpur Plateau on further east of the Central Highlands is drained by the River Damodar.
- To the south of River Narmada lies the Deccan Plateau. It is higher towards the west and slopes down gently in the east.
- The Western Ghats mark the western edge and the Eastern Ghats mark the eastern edge of the Deccan Plateau. The Western Ghats are higher than the Eastern Ghats. The latter extends up to Nilgiri Hills in the south.
- The highest peaks of the Western Ghats are the Anai Mudi (or Anamudi) and Doddabetta. Mahendragiri is the highest peak of the Eastern Ghats.
- The Deccan Traps of the Deccan Plateau are made of black soil which is good for cotton cultivation.

The differences between the Western Ghats and the Eastern Ghats are

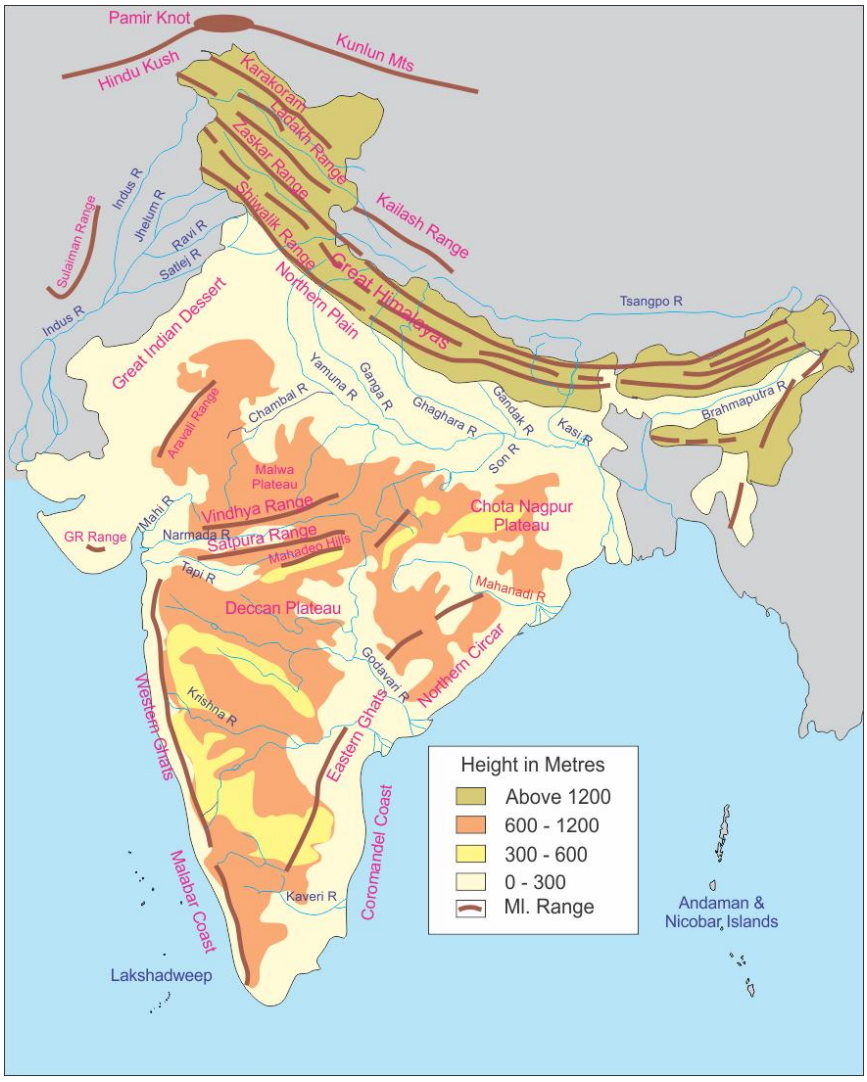
The Western Ghats	The Eastern Ghats
The Western Ghats lie on the western margin of the Deccan Plateau.	The Eastern Ghats lie on the eastern margin of the Deccan Plateau.
The Western Ghats are higher in elevation. Their average elevation is from 900 to 1600 metres.	The Eastern Ghats are lower in elevation. Their average elevation is 600 metres.
They have a continuous chain of mountains and can be crossed through passes only.	The mountain chains are not continuous and are denuded by the rivers which flow into the Bay of Bengal.
No major river has cut across them.	They have been cut across by major rivers such as Godavari, Mahanadi, Krishna and Kaveri.

The Indian Desert

- The Great Indian Desert or the Thar Desert is located in western Rajasthan.
- It is a sandy plain receiving an annual rainfall as low as 150 mm. The vegetation cover in the region is extremely scarce.
- Some small streams appear during the rainy season, but they quickly disappear into the sand.
- Luni is the only large river in this region.
- Barchan, or crescent-shaped dunes, are a prominent feature of the desert.

The Coastal Plains

- India has a long coast line. The western coast is located between the Western Ghats and the Arabian Sea. It can be categorised into three sections:
  - Konkan (Mumbai–Goa): It is the northern part of the western coast.
  - Kannad Plain: It is the central part of the western coast.
  - Malabar Coast: The southern stretch of the western coast is known as the Malabar Coast.
- Along the Bay of Bengal, the plains are wide and levelled. While the northern part is known as the Northern Circars, the southern part is known as the Coromandel Coast.
- Mahanadi, Krishna, Godavari and Kaveri are some rivers which form their deltas on this coast.
- Lake Chilika is an important lake located in the eastern coast.



A map of India showing its physical features

The Islands

- India has two groups of islands. Lakshadweep Islands are located in the Arabian Sea close to the Malabar Coast of Kerala.
- These are a small group of coral islands. Kavaratti Island is the administrative capital of Lakshadweep. The Pitt Island is uninhabited and has a bird sanctuary.
- The Andaman and Nicobar Islands are located in the Bay of Bengal and are elevated submarine mountains.
- Because these islands lie close to the Equator, the climate remains hot and wet throughout the year and the islands have dense forests.