

Chapter 2 **PHYSICAL FEATURES OF INDIA**

Q.1 What are tectonic plates? (What is the theory of plate tectonics?)

The crust (upper part) of the earth has been formed out of seven major and some minor plates. These are called tectonic plates.

Q.2. How are tectonic plates movement classified?

- i) Convergent boundary: While some plates come towards each other and form convergent boundary. In the event of two plates coming together they may either collide and crumble, or one may slide under the other.
- ii) Divergent boundary: Some plates move away from each other and form divergent boundary.
- iii) Transform boundary: When tectonic plates move horizontally past each other, it is called transform boundary. (Distinguish between Converging and diverging tectonic plates. Answer point i and ii above)

Q. 3. What are the causes for the formation of the relief to its present form?

Besides geological formations, a number of processes such as weathering, erosion and deposition have created and modified the relief to its present form.

Q. 4. How are the Himalayas formed?

- i) The oldest landmass, (the Peninsula part), was a part of the **Gondwana land**. The Gondwanaland included India, Australia, South Africa and South America as one single land mass.
- ii) The convectional currents split the crust into a number of pieces, thus leading to the drifting of the Indo-Australian plate after being separated from the Gondwana land, towards north.
- iii) The northward drift resulted in the collision of the plate with the much larger Eurasian Plate. Due to this collision, the sedimentary rocks which were accumulated in the geosyncline known as the **Tethys** were folded to form the mountain system of western Asia and Himalaya.

Q.5. How are the Northern Plains formed? Or How did the upliftment of the Himalayas influence the formation of Indian Northern Plains ?

- i) The Himalayan uplift out of the Tethys sea and subsidence of the northern flank of the peninsular plateau resulted in the formation of a large basin.
- ii) In due course of time this depression, gradually got filled with deposition of sediments by the rivers flowing from the mountains in the north and the peninsular plateau in the south.

iii) A flat land of extensive alluvial deposits led to the formation of the northern plains of India.

Q. 6. What are the major physiographic divisions of India?

Ans. The physical features of India can be grouped under the following physiographic divisions:

- i. The Himalayan Mountains
- ii. The Northern Plains
- iii. The Peninsular Plateau
- iv. The Indian Desert
- v. The Coastal Plains
- vi. The Island Groups

Q.7. Describe the features of the Himalayan Mountains.

Ans. The Himalayas, geologically young and structurally fold mountains stretch over the northern borders of India. Their features are:

- i. They form an arc, which covers a distance of about 2,400 k.m.
- ii. Their width varies from 400 km in Kashmir to 150 km in Arunachal Pradesh.
- iii. The altitudinal variations are greater in the eastern half than those in the western half.
- iv. The Himalaya consists of three parallel ranges in its longitudinal extent; namely Himadri, Himachal and Shivalik. (Continue two points each)

Q.8. Describe the features of the Himadri. (Greater Himalayas)

Ans. The northern most range of the Himalayas is known as the Greater or Inner Himalayas or the 'Himadri'. Its features are:

- i. It is the most continuous range consisting of the loftiest peaks with an average height of 6,000 metres.
- ii. It contains all the prominent Himalayan peaks like Mount Everest and Kanchenjunga.
- iii. The folds of Great Himalayas are asymmetrical in nature. The core of this part of Himalayas is composed of granite.
- iv. It is perennially snow bound, and a number of glaciers descend from this range.

Q.9. Describe the features of the Himachal. (Lesser Himalayas)

Ans. The range lying to the south of the Himadri forms the most rugged mountain system and is known as Himachal or lesser Himalaya. Its features are:

- i. The ranges are mainly composed of highly compressed and altered rocks.
- ii. The altitude varies between 3,700 and 4,500 metres and the average width is 50 kms.
- iii. The Pir Panjal range forms the longest and the most important range, the Dhauladhar and the Mahabharata ranges are also prominent ones.
- iv. This range consists of the famous valley of Kashmir, the Kangra and Kullu Valley in Himachal Pradesh. This region is well known for its hill stations.

Q.10. Describe the features of the Shiwalik.

Ans. The outer most range of the Himalayas is called the Shiwalik. Their main features are:

- i. They extend over a width of 10-50 k.m and have an altitude varying between 900 and 1100 metres.
- ii. These ranges are composed of unconsolidated sediments brought down by rivers from the main Himalayan ranges located farther north. Hence they are prone to landslides.
- iii. These valleys are covered with thick gravel and alluvium.
- iv. The longitudinal valley lying between lesser Himalaya and the Shiwaliks are known as Duns. Dehra Dun, Kotli Dun and Patli Dun are some of the well-known Duns.

Q. Describe the division of Himalayas in its longitudinal extent. (Write three answers above)

Q.11. Why is Shiwaliks prone to landslides?

Ans. Shiwaliks are prone to landslide since they are composed of unconsolidated sediments.

Q.12. Describe the division of Himalayas from west to east. (based on river valleys)

Ans. The division of the Himalayas has been demarcated by river valleys:

- i. The part of Himalayas lying between Indus and Sutlej has been traditionally known as **Punjab Himalayas** but it is also known regionally as Kashmir and Himachal Himalaya from west to east respectively.
- ii. The part of the Himalayas lying between Sutlej and Kali rivers is known as **Kumaon Himalayas**.

iii. The Kali and Tista rivers demarcate the **Nepal Himalayas**.

iv. The part lying between Tista and Dihang rivers is known as **Assam Himalayas**.

v. The Brahmaputra marks the eastern most boundaries of the Himalayas. Beyond the Dihang gorge, the Himalayas bend sharply to the south and spread along the eastern boundary of India. They are known as the **Purvanchal** or the Eastern hills and mountains. These hills running through the north-eastern states are mostly composed of strong sandstones which are sedimentary rocks. Covered with dense forests, they mostly run as parallel ranges and valleys. The Purvanchal comprises the Patkai hills, Naga hills, Manipur hills and Mizo hills.

Q.13. Describe the features of the northern plains. (Answer continued in the next 2 questions.)

Ans. The features of the northern plains are:

i. The northern plain has been formed by the interplay of the three major river systems, namely– the Indus, the Ganga and the Brahmaputra along with their tributaries.

ii. This plain is formed of alluvial soil. The deposition of alluvium in a vast basin lying at the foothills of the Himalaya over millions of years formed this fertile plain.

iii. It spreads over an area of 7 lakh sq. km. The plain being about 2400 Km long and 240 to 320 Km broad, is a densely populated physiographic division.

iv. The Northern Plain is broadly divided into three sections. Continue the next answer.

Q.14. How are the northern plains divided according to the rivers present?

Ans. The northern plains are divided as follows:

i. **Punjab Plains:** The Western part of the Northern Plain is referred to as the Punjab Plains. Formed by the Indus and its tributaries, the larger part of this plain lies in Pakistan. The Indus and its tributaries–the Jhelum, the Chenab, the Ravi, the Beas and the Sutlej originate in the Himalayas. This section of the plain is dominated by the doabs

ii. **Ganga plain:** It extends between Ghaggar and Tista rivers. It is spread over the states of North India, Haryana, Delhi, U.P., Bihar, partly Jharkhand and West Bengal.

iii. **Brahmaputra plain:** To the East of the Ganga plain particularly in Assam lies the Brahmaputra plain.

Q.15. How are the northern plains divided according to the variations in the relief features? Or Divide Northern plains on the basis of variation and explain their characteristics.

Ans. According to the variations in relief features, the Northern plains can be divided into four regions.

They are:

i. **Bhabar:** The rivers, after descending from the mountains deposit pebbles in a narrow belt of about 8 to 16 km in width lying parallel to the slopes of the Shiwaliks. It is known as bhabar. All the streams disappear in this bhabar belt.

ii. **Terai:** South of the bhabar belt, the streams and rivers re-emerge and create a wet, swampy and marshy region known as terai. This was a thickly forested region full of wildlife.

iii. **Bhangar:** The largest part of the northern plain is formed of older alluvium. They lie above the flood plains of the rivers and present a terrace like feature. This part is known as bhangar. The soil in this region contains calcareous deposits locally known as kankar.

iv. **Khadar:** The newer, younger deposits of the flood plains are called khadar. They are renewed almost every year and so are fertile, thus, ideal for intensive agriculture.

Q.16. Distinguish between bhangar and khadar.

Ans. Those parts of the northern plains formed of older alluvium lying above the flood plains of the rivers and presenting a terrace like feature are known as bhangar. The newer, younger deposits of the flood plains are called khadar. They are renewed almost every year and so are fertile, thus, ideal for intensive agriculture. Bhangar is away from rivers and Khadar is close to rivers.

Q.17 what are the features of the central highland?

Ans. The features of the central highland are:

i. The part of the peninsular plateau lying to the north of the Narmada River covering a major area of the Malwa plateau is known as the Central Highlands.

ii. The Vindhyan range is bounded by the Central Highlands on the south and the Aravali range on the northwest.

iii. The flow of the rivers draining this region, namely the Chambal, the Sind, the Betwa and Ken is from southwest to northeast, thus indicating the slope. The Central Highlands are wider in the west but narrower in the east.

iv. The eastward extensions of this plateau are locally known as the Bundelkhand and Baghelkhand.

v. The Chotanagpur plateau marks the further eastward extension, drained by the Damodar River.

Q.18 What are the features of the Deccan plateau?

Ans. The features of the Deccan plateau are:

- i. The Deccan Plateau is a triangular landmass that lies to the south of the river Narmada.
- ii. The Satpura range is in the north while the Mahadev, the Kaimur hills and the Maikal range form its eastern extensions.
- iii. The Deccan Plateau is higher in the west and slopes gently eastwards. An extension of the Plateau is also visible in the northeast– locally known as the Meghalaya and Karbi- Anglong Plateau.
- iv. The **Western Ghats** and the **Eastern Ghats** mark the western and the eastern edges of the Deccan Plateau respectively.

Q.19 Differentiate between Eastern Ghats and Western Ghats.

Ans. **Western Ghats Eastern Ghats**

- i. Western Ghats lie parallel to the western coast.
 - ii. They are continuous and can be crossed through passes only.
 - iii. The Western Ghats are higher than the Eastern Ghats. Their average elevation is 900– 1600 metres
 - iv. The highest peaks include the Anai Mudi (2,695metres) and the Doda Betta (2,637metres).
-
- i. Eastern Ghats lie parallel to the eastern coast.
 - ii. They are discontinuous and are dissected by rivers draining into the Bay of Bengal.
 - iii. The Eastern Ghats are lower than the Western Ghats. Their average elevation is 600 metres
 - iv. Mahendragiri (1,501 metres) is the highest peak in the Eastern Ghats.

Q.20. What are the features of the peninsular plateau?

Ans. The features of the peninsular plateau are:

i. The Peninsular plateau is a tableland composed of the old crystalline, igneous and metamorphic rocks. It was formed due to the breaking and drifting of the Gondwana land and thus, making it a part of the oldest landmass. The plateau has broad and shallow valleys and rounded hills.

ii. One of the distinct features of the peninsular plateau is the black soil area known as Deccan Trap. This is of volcanic origin hence the rocks are igneous. Actually these rocks have denuded over time and are responsible for the formation of black soil.

iii. This plateau consists of two broad divisions, namely, the Central Highlands and the Deccan Plateau.

iv. The part of the peninsular plateau lying to the north of the Narmada River covering a major area of the Malwa plateau is known as the Central Highlands. The Deccan Plateau is a triangular landmass that lies to the south of the river Narmada. The Deccan plateau is higher in the west and slopes gently eastwards.

Q.21. What are the features of the Indian desert?

Ans. The features of the Indian desert are:

i. The Indian desert lies towards the western margins of the Aravali Hills.

ii. It is an undulating sandy plain covered with sand dunes called barchans

iii. This region receives very low rainfall below 150 mm per year (15 cm) . It has arid climate with low vegetation cover.

iv. Streams appear during the rainy season. Soon after they disappear into the sand as they do not have enough water to reach the sea. Luni is the only large river in this region.

Q.22. Write a short note on the coastal plains.

Ans. These are narrow coastal strips, running along the Arabian Sea on the west and the Bay of Bengal on the east.

i) The Western Coastal Plain: It is sandwiched between the Western Ghats and the Arabian Sea, is a narrow plain. It consists of three sections. The northern part of the coast is called the Konkan (Mumbai – Goa), the central stretch is called the Kannad Plain while the southern stretch is referred to as the Malabar coast.

ii) The Eastern Coastal Plain: The plain along the Bay of Bengal are wide and level. In the northern part, it is referred to as the Northern Circar, while the southern part is known as the Coromandal Coast. Large rivers such as the Mahanadi, the Godavari, the Krishna and the Kaveri have formed extensive delta on this coast. Lake Chilika is an important feature along the eastern coast.

Q.23. Write a short note on the island groups of India.

Ans. India has 2 main island groups, namely Lakshadweep and Andaman and Nicobar islands

Their main features are:

Lakshadweep islands:-

i. This group of islands is composed of small coral islands.

ii. Earlier they were known as Laccadive, Minicoy and Amindive. In 1973 these were Named as Lakshadweep.

iii. It covers a small area of 32 sq km. Kavaratti island is the administrative headquarters of Lakshadweep.

iv. This island group has great diversity of flora and fauna. The Pitli island, which is uninhabited, has a bird sanctuary.

Andaman and Nicobar islands:-

i. They are bigger in size and are more numerous and scattered. The entire group of islands is divided into two broad categories – The Andaman in the north and the Nicobar in the south.

ii. It is believed that these islands are an elevated portion of submarine mountains.

iii. These island groups are of great strategic importance for the country.

iv. There is great diversity of flora and fauna in this group of islands too. These islands lie close to the equator and experience equatorial climate and have thick forest cover.

Q.24. How are the physiographic divisions of India complimentary to each other?

Ans. the physiographic divisions of India contemporary to each other in the following ways:

- i. The northern mountains are the major sources of water and forest wealth.
- ii. The northern plains are the granaries of the country. They provide the base for early civilisations.
- iii. The plateau is a storehouse of minerals, which has played a crucial role in the industrialisation of the country.
- iv. The coastal region and island groups provide sites for fishing and port activities.

25. The diverse physical features of India are of immense value_. Justify the statement by giving five suitable examples. (Same answer above)

Additional Questions:

1. What is a Peninsula ?

A landmass bounded by sea on three sides is referred to as Peninsula

2. Name the mountain ranges in the eastern part of India forming its boundary with Myanmar.- Purvanchal

3. Name the western coastal strip, south of Goa-
Kannad Plain

4. Name the highest peak in the Eastern Ghats.-
Mahendragiri

5. Which continents of today were part of the Gondwana land?

Asia, Australia, South Africa and South America

6. What are distributaries?

The rivers in their lower course split into numerous channels due to the deposition of silt. These channels are known as distributaries.

7. Which plateau lies between the Aravali and the Vindhyan ranges?

Malwa Plateau.