

CHAPTER - 3

PLATEAU WHERE THE EARTH'S HISTORY SLUMBERS

1. Explain the physiographic features of the Peninsular Plateau and its two main divisions.

Answer :

Peninsular Plateau

- The Peninsular Plateau is the largest and oldest physiographic division of India.
- It is a part of the ancient Gondwanaland.
- It is roughly triangular in shape with an area of about 16 lakh square kilometers.
- The average height of the plateau ranges from 600 m to 900 m above sea level.
- The general slope of the plateau is from west to east.
- The plateau consists of broad valleys and rounded hills.
- It is composed of hard igneous and metamorphic rocks.
- Based on its geographical location, the **Peninsular Plateau** of India is divided into two main parts. The **Narmada River** acts as the natural boundary between these two divisions: a) The Central Highlands b) The Deccan Plateau

a. The Central Highlands:

- This part is located to the north of the Narmada River.
- The Malwa Plateau is situated in the western part of the Central Highlands.
- The Aravalli Range is located to the northwest and is the oldest fold mountain.
- Mount Guru Shikhar (Mount Abu) is the highest peak in the Aravalli Range.
- The Vindhya Range forms the southern boundary of the Central Highlands.
- Bundelkhand and Baghelkhand are the local names for the eastern parts.
- The Chota Nagpur Plateau in the east is very rich in mineral deposits.
- Rivers like Chambal, Sind, Betwa, and Ken flow through this region towards the north.

b. The Deccan Plateau:

- This is the largest part of the plateau located south of the Narmada River.
- It was formed by the cooling of lava from volcanic eruptions (Basalt rocks).

- The step-like topography formed by lava flows is called the Deccan Trap.
- Black soil, suitable for cotton cultivation, is found in this region.
- Satpura, Mahadev, and Maikal ranges form the northern boundary.
- The Western Ghats (Sahyadri) form the continuous western boundary.
- Anamudi is the highest peak in the Western Ghats and South India.
- The Eastern Ghats are the eastern boundary and are discontinuous hills.
- Mahendragiri is one of the prominent peaks in the Eastern Ghats.
- Major rivers like Godavari, Krishna, and Kaveri flow through this plateau.

2. Classify plateaus based on their location and provide examples.

- **Intermontane Plateaus:** These are plateaus surrounded by mountains on all sides. An example is the Tibetan Plateau.
- **Piedmont Plateaus:** These are situated at the foot of mountains. An example is the Malwa Plateau in India.
- **Continental Plateaus:** These are extensive plateaus that rise abruptly from the neighboring plains or the sea. The Deccan Plateau is a primary example.

3. Why is the Chota Nagpur Plateau referred to as the "Mineral Storehouse of India"?

- It is the most resource-rich region in India regarding minerals.
- It contains vast deposits of **Iron ore, Bauxite, Manganese, and Copper**.
- It is a major source of **Coal and Limestone**.
- The abundance of these minerals has led to the establishment of numerous heavy industries and mineral-based manufacturing units in this region.

4. Explain the formation of Rain Shadow Regions with reference to the Western Ghats.

- During the monsoon, moisture-heavy winds from the sea hit the mountain ranges.
- As the air is forced to rise over the mountains, it cools and condenses, leading to heavy rainfall on the side facing the wind. The western slopes of the Western Ghats receive **250 cm to 400 cm** of rain.
- After crossing the peak, the air descends on the other side. This air is dry as it has already lost most of its moisture.
- Because the descending air is dry and warm, the leeward side (eastern side) receives very little rainfall, often **less than 50 cm**. These areas are called **Rain Shadow Regions**.

5. List the factors that influence the climate of the Peninsular Plateau.

Answer:

- Location in the tropical zone
- Unique shape of the peninsula
- Distance from the sea,
- Position of mountain ranges
- The direction of monsoon winds.

6. "The Peninsular Plateau experiences significant variations in temperature and rainfall despite being in the tropical zone." Substantiate this statement.

Answer:

- While the average summer temperature is above 30°C, the Deccan Plateau can reach 38°C in March.
- High-altitude areas in the Western Ghats record significantly lower temperatures compared to the plains.
- The interior parts of the plateau experience a high diurnal range of temperature (difference between day and night temperatures) during winter.
- The western slopes of the Western Ghats receive heavy rainfall (250 cm - 400 cm), whereas the eastern side remains a rain shadow region with less than 50 cm of rain.
- The climate is dominated by the Tropical Monsoon, but rainfall distribution varies based on the direction of monsoon winds and mountain positions.

7. Classify the Peninsular rivers based on their direction of flow and describe their major characteristics.

Answer:

Peninsular Rivers are classified in to three: East Flowing Rivers, West Flowing Rivers, North Flowing Rivers.

East Flowing Rivers (Joining the Bay of Bengal):

Mahanadi: This river originates at Sihawa in the Raipur district of Chhattisgarh and flows through Odisha, where the Hirakud project is located. Its main tributaries are the Ib and the Tel.

Godavari: It is the largest Peninsular river with a length of 1465 km, originating at Nasik in Maharashtra. Due to its size and importance, it is known as '**Dakshin Ganga**', and its major tributaries include the Pranhita, Indravati, and Sabari.

Krishna: This is the second-largest Peninsular river, originating at Mahabaleshwar in Maharashtra. The Tungabhadra, Bhima, and Koyna are its primary tributaries.

Kaveri: Originating in the Brahmagiri hills of Karnataka, this river has the unique characteristic of having water flow throughout the year because it receives rainfall from both the Southwest and Northeast monsoons. Its main tributaries are the Kabani, Bhavani, and Amaravati.

West Flowing Rivers (Joining the Arabian Sea):

Narmada: It originates at Amarkantak in Madhya Pradesh and flows through a rift valley. It is well-known for creating the spectacular **Dhuandhar Falls** near Jabalpur.

Tapti: This river originates at Multai in Madhya Pradesh and flows through the states of Madhya Pradesh, Maharashtra, and Gujarat before reaching the Arabian Sea.

North Flowing Rivers (Peninsular Tributaries of Ganga):

Chambal: This river originates in the high regions of the Malwa Plateau and is famous for creating 'Ravines', which is a type of badland topography formed by intense soil erosion.

Other Rivers: Rivers like the Betwa, Ken, and Son also originate in the plateau and flow northward to join the Yamuna or the Ganga.

8. Explain the natural vegetation of the Peninsular Plateau. (5 Marks)

Answer:

The natural vegetation of the Peninsular Plateau is shaped by its varied relief and rainfall patterns. The forests in this region can be broadly classified into the following categories:

Tropical Deciduous Forests :

These are the most widespread forests in the Peninsular Plateau. Depending on the availability of water, they are divided into two:

- **Moist Deciduous Forests:** Found in areas with rainfall between 100 cm and 200 cm. They are common on the eastern slopes of the Western Ghats and in states like Madhya Pradesh and Chhattisgarh. Key trees include Teak, Sal, and Sandalwood.
- **Dry Deciduous Forests:** Found in regions receiving 70 cm to 100 cm of rainfall. These trees shed their leaves during the dry season. Teak and Rosewood are commonly found here.

Tropical Thorn Forests

- These occur in areas receiving less than 75 cm of annual rainfall.
- The vegetation consists of short trees, thorny bushes, and grasses.

- Common species include Acacia and Palm trees. These are found in the rain-shadow regions of Maharashtra, Karnataka, Andhra Pradesh, and Tamil Nadu.

Southern Montane Forests

- These are found in the high-altitude regions of the Peninsular Plateau, such as the Western Ghats, Nilgiris, and the Vindhya-Satpura ranges.
- As altitude increases, the vegetation changes from tropical to temperate.
- The temperate grasslands/forests found in the Nilgiris, Palani, and Annamalai hills are specifically known as '**Shola Forests**'.

9. Explain the major soil types found in the Peninsular Plateau and their characteristics.

Answer

Most of the soils found in the Peninsular Plateau are formed by the weathering of rocks within those specific regions due to climatic changes. These are known as **In-situ soils**.

Black Soil

- It is formed by the weathering of basalt rocks located in the northwestern part of the Deccan Plateau.
- This soil is most suitable for cotton cultivation, which is why it is often called 'Black Cotton Soil'.
- It is widely found in the Malwa Plateau and Kathiawar Peninsula, covering parts of Gujarat, Maharashtra, and Madhya Pradesh.

Red Soil

- This soil type is formed from the weathering of ancient crystalline rocks in the Peninsular Plateau.
- The presence of iron in the soil gives it a distinct red color.
- It is primarily found in the eastern and southern parts of the plateau.

Laterite Soil

- It forms in regions that experience alternating periods of heavy rainfall and intense heat.
- It is created through "Leaching," a process where soil nutrients dissolve in rainwater and sink into lower layers.
- It is highly suitable for plantation crops such as rubber, coffee, tea, and cashew.

Mountain Soil

- This soil is found in the mountain ranges of the Western Ghats and Eastern Ghats.
- It is ideal for growing tea, coffee, and spices, as well as tropical fruits.
- In South India, it is mainly found in the states of Kerala, Tamil Nadu, and Karnataka.

**10. "The Peninsular Plateau holds a crucial position in India's agricultural sector."
Analyze this statement.**

Answer:

- Compared to the plains, plateau regions are generally less suitable for cultivation.
- However, crops such as rice, wheat, cotton, sugarcane, and tobacco are cultivated in various parts of the plateau.
- Due to geographical features (undulating terrain, well-drained hill slopes, and areas with thin soil cover), cultivation is possible only in certain areas.
- Hill slopes are converted into terraces to make them suitable for farming.

Coffee

- Karnataka ranks first in coffee production in India.
- Karnataka accounts for 59% of the country's coffee cultivation area and 71% of its total production.
- Kerala stands in second place with approximately 22% of the production.
- Arabica and Robusta are the primary varieties cultivated.

Tea

- Tea is mainly cultivated in the Nilgiri region.
- South India accounts for 25% of India's total tea production.
- Of this, 44% comes from the Nilgiri hills in Tamil Nadu.

Cotton

- This is a Kharif crop.
- In Peninsular India, cultivation begins in October, and harvesting takes place from January to May.
- There should be no frost during the growth stage.
- Required Climate: Temperature between 21°C and 30°C and annual rainfall between 50cm and 100cm.
- In areas with low rainfall, it is cultivated with the help of irrigation.
- The black soil of the Deccan-Malwa plateau is most suitable for cotton cultivation.

- Gujarat ranks first in production, followed by Maharashtra in second place.

Sugarcane

- Sugarcane production in Peninsular India is better than in North India.
- Favorable physical conditions for sugarcane cultivation exist here.
- High yield, higher sugar content, and a longer crushing season are the specialties of this region.

11. "The Peninsular Plateau is considered the storehouse of minerals in India." Explain this statement by describing the major mineral belts found in India and the key minerals associated with them.

Answer:

The Peninsular Plateau is exceptionally rich in mineral resources, with most deposits concentrated in its crystalline rock formations and hills. The major mineral belts are:

North-Eastern Plateau Region:

- This is the wealthiest mineral belt in India
- It includes the Chota Nagpur Plateau, covering states like Jharkhand, West Bengal, and Odisha. Key minerals found here include **coal, iron ore, manganese, mica, bauxite, and copper.**

Central Belt:

- This region covers Chhattisgarh, Madhya Pradesh, Telangana, Andhra Pradesh, and parts of Maharashtra.
- It is known for its deposits of **manganese, bauxite, limestone, marble, coal, mica, and iron ore.**

Southern Belt:

- Located across the Karnataka Plateau and adjacent parts of Tamil Nadu.
- This belt is particularly rich in **iron ore, bauxite, and chromite.**

South-Western Belt:

- Comprising the Western Karnataka and Goa regions.
- This area is a significant source of **iron ore and manganese.**

North-Western Belt:

- Extending along the Aravalli range in Rajasthan and neighboring parts of Gujarat.
- This belt is known for non-ferrous minerals like **copper, lead, zinc, and uranium**, as well as **mica and gypsum**.

12. "Despite challenges in topography and climate, the Peninsular Plateau has seen a significant increase in human settlement." Explain the factors that contributed to this growth.

Answer:

Initially, the Peninsular Plateau had a moderate population due to its rugged terrain and harsh climate, which were not ideal for extensive agriculture. However, several factors led to increased settlement:

- The start of mineral-based activities attracted people to the region for labor and trade.
- The growth of road and rail transport networks facilitated easier movement and access to the interior.
- The emergence of industries based on the available minerals provided significant employment opportunities.
- Improved irrigation facilities and modern technology opened up possibilities for large-scale commercial farming.
- Large cities developed around state capitals and industrial centers, further increasing the population density.