Chapter - 1

INDIA - RELIEF FEATURES

I Key points:

1. India lies totally in the Northern Hemisphere of the globe.
2. India mainland lies between 8°.4' and 37°.6' North latitudes and 68°.7' and 97°.25' East longitudes.
3. For India the central longitude 82°.30' East is taken as Standard Meridian.
4. India Standard Time (IST) is 5 ½ hours ahead Greenwich Mean Time (GMT).
5. World land forms originated from Angara land (Laurasia) and Gondwanaland.
6. The India peninsula was part of Gondwanaland.
7. India plate moved North-East and collided Eurasian plate resulting the formation of the Himalayas.
8. Greater Himalayas average height is 6100 mts.
9. The Pir Panjal and Mahabharata ranges are in the part of lesser Himalayas.
10. Valley of Kashmir, the Kangra and Kulu, Hill Stations Simla, Mussoorie, Nainital, Ranikhet are in lesser Himalayas.
11. The Valleys lying between the Himachal and Shivaliks are Duns. The prominent Duns are Dehradun, Kotli Dun and Patli Dun.
12. The eastern most boundary of the Himalayas is the Brahmaputra valley.
13. The divisions of the Himalayas in Arunachal Pradesh beyond the Dihang valley is known as Purvanchal.
14. Regionally the purvanchal are known as patkai hills, the Naga hills, Manipuri hills, Khasi and Mizo hills.
15. The Himalayas are reason for summer rains and monsoon type climate in India.
16. 'Doab' means two rivers. In the western part of great northern plain the 'Doab' features dominate the fertile land.
17. Ganga plain extends from the rivers Ghaggar to Teesta.
18. Gravel and pebble sediments feature is known as 'Bhabar'.
19. Swampy and Marshy region called Terai.
20. The Southern most tip of the Peninsular Plateau is Kanyakumari.
21. The India Plateau is slightly tilted towards east.
22. Chhotanagpur plateau is rich in mineral resources.
23. Western Ghats, Eastern Ghats and Nilgiris form Western, Eastern and Southern boundaries to the Deccan plateau.
24. The famous hill Station Udagamandalam, popularly known as Ooty, is located in Nilgiris.
25. Doda Betta (2637 mts) is the highest peak in Western Ghats.
26. The highest peak in Eastern Ghats is Aroya Konda found at Chinthapalli (1680 mts, in A.P.).
27. The Peninsular plateau is formed with black soils due to volcanic activity.
28. The Thar Desert is located on the leeward side of Aravalis.
29. The Thar Desert receives very low amount of rainfall (100 to 150 mm per year).
30. 'Luni' is the only river in the Thar Desert.
31. 'Indira Gandhi Canal' is the longest canal in Country (650 kms) watering part of the Thar desert.
32. The western coast starts from the Rann of Kutch and ends at Kanya Kumari.
33. Lake Kolleru and Pulicat are in Andhra Pradesh.
34. In Andaman and Nicobar, Narkondam and Barren are volcanic origin.
35. The Southern most tip of India is found in Nicobar called as 'Indira Point'.
II Concepts

1. **Perennial:** Continuing throughout the entire year as a stream. The seasonal cycle of accumulation of ice, movement and melting of glaciers are sources for the perennial rivers of Greater Himalayas.

2. **Coral reefs:** Underwater structures made from calcium and carbonate secreted by corals. Coral is an animal that lives under the sea on the bed and lives on a skeleton that it has created. Coral begins out as a small polyp and attaches itself to a good spot and then starts creating a skeleton to live on. Coral gets food by algae, algae are attracted to the skeletal structure because for the algae to live.

3. **Coastal Plains:** A plain adjacent to a coast is called coastal plain. The southern part of the peninsula is bordered by narrow coastal strips along the Arabian Sea on the west and the Bay of Bangal on the east.

4. **Peninsula:** A place/piece of the which is surrounded by water on three sides but connected to the main land on one side. The peninsular plateau is a table land composed of the old crystalline, igneous and metamorphic rocks. It was formed due to the breaking and drifting of the Gondwanaland and thus making it a part of the oldest landmass.

5. **Laurasia:** Laurasia was the northernmost of two continents that formed part of the Pangaea - Super continent from approximately 200 million years ago. World landforms originated from two giant lands namely Angara land (Laurasia) and Gondwanaland.

6. **Duns:** The longitudinal valley lying between Himalaya and the Shiwaliks are known as 'Duns'. Dehra Dun, Kothi Dum and Pathi Dum are some of the well-known Duns.

7. **Angara Land:** The landmass to the north of Tethys sea was called Angara land. Ancient continental mass consisted of modern continents of Asia and Europe.

8. **Gondwanaland:** The landmass to the South of Tethys sea was called Gondwanaland. Ancient continental mass consisted South America, Africa, India, Australia and Antarctica.

9. **Shivalik:** The southernmost range of Himalayas. A mountain rage of the outer Himalayas.

10. **Purvanchal:** In Arunachal Pradesh beyond the Dihang valley, the Himalayas take hairpin bend to the south and act as eastern boundary of India and run through the north eastern states. These division are known as "Purvanchal".

11. **Leeward:** Towards the side sheltered from the wind is leeward.
1. Which are the major physiographic divisions of India? Contrast the relief of the Himalayas region with that of the peninsular plateau.

I. The major physiographic divisions of India:

The relief divisions of Indian landmass can be divided into the following groups.

1. The Himalayas  
2. The Indo-Gangetic plain  
3. The Peninsular plateau  
4. The coastal plains  
5. The Desert (The Thar)  
6. The Islands

II. The Himalayan region - The peninsular plateau:

<table>
<thead>
<tr>
<th>The Himalayan Region</th>
<th>The Peninsular Plateau</th>
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</thead>
<tbody>
<tr>
<td>1. The Himalayan Region is the northern border of India.</td>
<td>1. The Indian plateau is also known as the peninsular plateau as it is surrounded by the sea on three sides. It is located in the southern region of our country.</td>
</tr>
<tr>
<td>2. The highest mountain ranges of the world.</td>
<td>2. The central Highlands are formed of low hills. There is no high peak of world-wide fame in these hills.</td>
</tr>
<tr>
<td>3. These are formed of the sedimentary rocks.</td>
<td>3. It is mainly composed of the old crystalline, hard igneous and metamorphic rock.</td>
</tr>
<tr>
<td>4. They are formed at the edge of the Indo-Gangetic plains.</td>
<td>4. The western and Eastern Ghats form western and Eastern edges of the peninsular plateau.</td>
</tr>
<tr>
<td>5. May great perennial rivers like the Indus, the Ganges and the Brahmaputra originate from the Himalayas.</td>
<td>5. The Godavari, The Krishna, The Mahanadi, The Tapati and the Narmada originate from these hills. These rivers are not perennial.</td>
</tr>
<tr>
<td>6. In comparison to the plateau region Gangetic plain is wet.</td>
<td>6. In Comparison to Gangetic plains the plateau region is dry.</td>
</tr>
<tr>
<td>7. Everest, K2, Kanchenjunga are major mountain peaks of this region.</td>
<td>7. Anaimeedi, Dodabetta are the important peaks of this region.</td>
</tr>
<tr>
<td>8. It has three parallel ranges i.e, Himadri, Himachal and Shivaliks.</td>
<td>8. It has two divisions. They are the central highlands and the deccan plateau.</td>
</tr>
<tr>
<td>9. Important hill stations are found on the Himalayas (like Shimla, Mussorie).</td>
<td>9. Udagamandalam - a hill station is found on these hills.</td>
</tr>
<tr>
<td>10. Kara Koram, Western and Eastern Himalayas and Purvanchal ranges are found in this region.</td>
<td>10. Vindya, Sapara, Western and Eastern Ghats. Nilgiri hills are found here.</td>
</tr>
</tbody>
</table>
2. **What is the influence of the Himalayas on Indian Agriculture?**

**Himalayas - Indian Agriculture:**

1. The Himalayan rivers have a perennial flow since these are fed by the glaciers and bring a lot of Silt making the indo-gangetic plains very fertile.

2. The Himalayas act as barriers protecting the great plains of India from the cold winds of central Asia during severe winter. This helps Indian agriculture.

3. The Himalayas are reason for summer rains and monsoon type climate in regions that are beyond the Western Ghats of India.

4. The Himalayas act as a huge reservoir of water for the north Indian rivers. These great rivers carry alluvium from the Himalayas that it promotes agricultural production.

5. This region is suitable for construction of multi purpose projects which provide irrigation facilities to Indian agriculture.

6. The slopes of the Himalayas offer terraced cultivation - tea plantation can be take up on the hill slopes.

7. A wide variety of fruits like apples, grapes, walnut, peaches, apricot etc., are also grown in the Himalayas region.

8. The Himalayan region always support the Indian Agriculture, the backbone of our economy.
3. **Indo-Gangetic plains have high density of Indian Agriculture?**

1. The interaction of the three Himalayan rivers, Indus, Ganga, and Brahmaputra and their tributaries resulted in the formation of the Indo-Gangetic plains.

2. About 20 million years ago, it was a shallow basin that was gradually filled with varied alluvial soil that these rivers brought from the Himalayas. This alluvial soil is very fertile and supports cultivation of different type of crops.

3. The western part, the Punjab and Haryana plains has 'Doab' features which dominate the fertile land between the two rivers.

4. The central part, the Ganga plain is mainly spread in the states of UP, Bihar and partly in Haryana, jharkhand and West Bengal. This area is extremely fertile and excellent for farming. This makes the Indo-Gangetic plain a suitable place for Indian farmers to grow rice and wheat.

5. The Eastern part of the plain exists mostly in the Brahmaputra valley of Assom.

6. The Himalayas act as a huge reservoir of water for the north Indian rivers. This region is suitable for the construction of multipurpose projects which strengthens the Indian Agriculture.

7. Tropical deciduous forests dominate the region which provides timber, fuelwood, fodder, medicinal plants and hubs etc.

8. Transport is well developed in Indo-Gangetic plains. Construction of transport network is early in the plains.

9. The mountain areas with steep slopes have scarce population but the plain areas provides the most suitable land for human habitation.

10. Most flat land is available for the construction of houses as well as for cultivation. Owing to migration at the time of India's partition, most of the terai zone was used for agriculture. Thus the Indo-Gangetic plains have high density of population.
4. How are the eastern coastal plains and western coastal plains similar or different?

<table>
<thead>
<tr>
<th>The East Coastal plains</th>
<th>The Western Coastal Plains</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The eastern coastal plains are located between the Eastern ghats and the Bay of Bengal</td>
<td>1. The western coastal plains are located between the Western Ghats and the Arabian Sea.</td>
</tr>
<tr>
<td>2. This belt of plains are comparatively wider and flat.</td>
<td>2. The western coastal plain is narrow in width and uneven.</td>
</tr>
<tr>
<td>3. Eastern coastal plains are very fertile. Rivers Mahanadi, Godavari, Krishna, Cauvery deposit their sediments during delta formation.</td>
<td>3. This belf of plains are less fertile. No major river is engaged in deposition of sediments. There are no deltas.</td>
</tr>
<tr>
<td>4. It is divided into Bengal, Utkal circar and Coromandal coasts.</td>
<td>4. It is divided into Gujarat, Konkan, Koramandal and Malabar coasts.</td>
</tr>
<tr>
<td>5. The East coastal plain is famous for food crops.</td>
<td>5. The western coastal plain is famous for cash crops.</td>
</tr>
<tr>
<td>6. There are lakes like Chilka, Kolleru and Pulicat.</td>
<td>6. The plain has no lakes but it has lagoons and back waters.</td>
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<tr>
<td>7. These plains receive relatively lesser rainfall.</td>
<td>7. Western plain receive more rainfall.</td>
</tr>
<tr>
<td>8. More irrigation facilities are in this plain.</td>
<td>8. The western coastal plain has no irrigation facilities.</td>
</tr>
<tr>
<td>9. Deltas in these plains are agriculturally developed and also enables rich fishing resources.</td>
<td>9. This belt of plain zone enables rich fishing resources, but no proper agricultural development.</td>
</tr>
</tbody>
</table>
5. Plateau regions in India do not support agriculture as much as the plain regions. What are the reasons for this?

1. Plateau regions in India do not support agriculture as much as the plain regions. It is an area of fairly high level ground to the surrounding area.
2. Plain regions are more suitable for agriculture. A plain is a low lying land with leveled surface.
3. The physical features of plateau are not supportive to agriculture.
4. The rugged surface of plateau makes irrigation difficult.
5. The plains have more suitable irrigation facilities.
6. The plateau region does not have any perennial rivers.
7. The plains has many rivers. The plains have fertile lands that are drained by rivers. Large part of agriculture activity is taken up in the fertile plains than the plateau regions.
8. The plateaus often suffer from insufficient rainfall.
9. The plains are formed with alluvial soils which are very fertile where as the plateaus are covered by thin and light textured soils which are less fertile.
10. The plateau regions are rich in mineral deposits where as the plains are more suitable for agriculture.
6. On an outline map of India show the following
   i) Mountain and hill ranges - the Karakoram, the Zaskar, the Patkai Bum, the Jaintia, the Vindhya range, the Aravali, and the Cardamom hills.
   ii) Peaks, K2, Kanchenjunga, Nanga Parbat and the Animudi
   iii) Plateau-Chhotanagapur and Malva.
   iv) The Indian Desert, Western Ghats, Laksha dweep Islands.
2 Marks Questions

1. The Sun rises two hours earlier in Arunachal Pradesh as compared to Gujarat in the west. But the clock shows the same time. How does this happen?

A. 1. Arunachal Pradesh is in the eastern most part of India. Gujarat is in the western most part of India. The maximum distance between these two places is 3,000km.
   2. The time difference between Arunachal Pradesh and Gujarat is 2 hrs.
   3. The Sun rises two hours earlier in Arunachal Pradesh as compared to Gujarat in the west. This causes a time loss of two hours from Gujarat to Arunachal Pradesh.
   4. To remove the time difference, the time at 82 ½⁰ East longitude is taken as Indian standard time. Because of this reason all the clocks show the same time.

2. If the Himalayas would have not been in its present position, how would have been the climatic conditions of Indian Sub-Continent?

A. 1. The formation of the Himalayas influences the climate in various ways.
   2. The Himalayas act as barriers protecting the great plains of India from the cold winds of central Asia during severe winter.
   3. The Himalayas are reason for summer rains and monsoon type climate in regions that are beyond the western ghats of India.
   4. In its absence this region would have remained drier. India would have been tropical desert.

3. The Himalayas do not extend into which of the following states Madhya Pradesh, Uttar Pradesh, Sikkim, Haryana, Punjab, Uttarakhand?

A. The Himalayas do not extend into the following states.

4. Identify the following

   1. The Islands formed due to volcanic eruption
      Narcondam and Barren Islands

   2. The Countries constituting India Sub Continent
      Bangladesh, Srilanka, Maldives, Nepal, Bhutan, Pakistan, Tibet (China), Myanmar.

   3. The states through which the Tropic of Cancer Passes
      Gujarat, Rajasthan, Madhya Pradesh, Chattisgarth, Jarkhand, West Bengal, Tripura and Mizoram.
4. The Northern most latitude in degrees?
The Northern most latitude in degrees: 37°.6’ North latitude.

5. The Southern most latitude of the Indian mainland in degrees
The Southern most latitude of the Indian mainland in degrees: 8°.4’ North

6. The eastern and the western most longitudes in degrees
   Eastern most longitude: 97°.25’ East
   Western most longitude: 68°.7’ East

7. The place situated on the three seas
   Kanya Kumari is the place which is situated on the three seas.

8. The Strait Separating Srilanka from India?
The Palk straight separates Srilanka from India.

9. The Union Territories of India
   i) Andaman and Nicobar Islands
   ii) Chandigarh
   iii) Dadra and Nagar Haveli
   (iv) Daman and Diu
   (v) Lakshadweep
   (vi) NCT of Delhi and
   (vii) Puducherry