

SITUATION AND SIZE

India, the seventh largest country in terms of area in the world, is well marked off from the rest of Asia by mountains and the sea, which gives the country a distinct geographical entity. Bounded by the Himalayas in the North, it stretches southwards and at the Tropic of Cancer, tapers off into the Indian Ocean between the Bay of Bengal on the east and the Arabian Sea on the West. It covers an area of 32, 87,631 sq.km.

Lying entirely in the northern hemisphere, the mainland extends between latitudes $8^{\circ}4'$ and $37^{\circ}6'$ North and Longitudes $68^{\circ}7'$ and $97^{\circ}25'$ east and measures about 3214 km from North to South between the extreme latitudes and about 2,933 km from east to west between the extreme longitudes. It has a land frontier of about 15,200 km. the length of the coastline of mainland of India is 7500 km and the two island groups of Lakshadweep and Andaman and Nicobar have a coastline of length 1, 416.5 km combinedly.

TERMS RELATED

1. **Tropic of Cancer:** The $23\frac{1}{2}^{\circ}$ N latitude (an imaginary line of circle on the earth's surface) where the sun is overhead, i.e., lies in the mid of the celestial sphere on 21st June every year.
2. **Latitude:** The angular distance of a point/place on the earth's surface with respect to the equator.
3. **Longitude:** The angular distance of a point/ place on the earth's surface with respect to the prime meridian of the earth.
4. **Frontier:** A politico – geographical area lying beyond defined borders of a political unit into which expansion cloud takes place.
5. **Lakshadweep:** The name given to the group of coral islands found in The Arabian Sea. The main islands belonging to this group are Amindivi, Kaveratti and Minicoy islands.
6. **Border:** It implies the physical limit of sovereignty and Jurisdiction of state.
7. **Gulf:** A large and deep inlet of sea. It is usually narrow than a bay.
8. **Strait:** A narrow passage of water connecting two large bodies of water.

RELIEF FEATURES AND PHYSICAL DIVISIONS OF INDIA

The physical shape of the surface of the earth is known as relief. The relief of India is better understood by dividing the country into various physiographic units the physiographic survey of the Indian landmass can be carried out by dividing the country into the following physical units.

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| 1. Northern Mountains or The Himalayas | 2. Northern Plains | 3. Peninsular Plateau |
| 4. Western and Eastern Coastal Plains | 5. The Islands. | |

NORTHERN MOUNTAINS

These mountains form a part of the great Himalayan Ranges, which extend beyond Indian landmass and are among the youngest fold mountains of the world. These mountains are characterized by the following features:

1. Youthful
2. Great deal of folding a deformation, betraying their initially weak character.
3. Tectonic origin (not merely relict masses)
4. Great erosive power of rivers.

LONGITUDINAL SURVEY OF THE HIMALAYAS

India has been longitudinally classified into the following five sections:

1. **Kashmir Himalayas:** This section lies in between the river Indus in the west and river Chenab in the east. It has the largest share of snow land and glaciers. The valley of Kashmir lies in this section, and this section is drained by the rivers like Jhelum and Chenab.
2. **Punjab Himalayas:** This section of the Himalayas lies in between the rivers Chenab and Satluj. It has bare, rugged northern slopes with plateaus having lakes such as Mansarovar and Rakas. This section is important from the point of view of the horticulture and scenic beauty.
3. **Kumaun Himalayas:** This section extends from Satluj to Kali River valleys and is said to have 360 lakes such as Nainital and Bhimtal. This section has pilgrimage centres like Badrinath and Gangotri which makes it important from the tourist point of view.
4. **Central Himalayas:** This section extends from Kali to Tista and has the distinction of having some of the highest peaks in the world including Mount Everest.
5. **Assam Himalayas:** This section extends from Tista to Brahmaputra. Naga Tib and Patkai Bum hills of this section form the water shed between India and Myanmar.

CROSS SECTIONAL OR TRANSVERSAL SURVEY OF INDIA

Transversally the Himalayas can be subdivided into three mountain ranges:

1. **Greater/Inner Himalayas or Himadri:** The average breadth of this section varies between 120 and 190 km and average height is 6000m. This is composed of archaic rocks like granites, gneisses and Schists. Some of the highest mountain peaks of the world lie in this section. Such as Mount Everest, Kanchanjunga and Makalu. Some of the mountain passes through which people cross this section are Burel pass and Zaskara in Kashmir, Shipkila and Baralehala in Himachal Pradesh, Thega la and Nitala in Uttar Pradesh and Jelep la and in Sikkim. The Indus forms the deepest Gorge in POK of section of the Himalayas near Nanga Parbat.
2. **Lesser Himalayas/Himachal:** This section has an average breadth of 60-80 km, and an average height of 3500 – 5000 m and comprises mainly of metamorphic and unfossiliferous sedimentary rocks. Important ranges include Pir Panjali, Dhauladhar, Nagtib, Massourie, range and Mahabharat range. Most of the hill stations like Shimla, Massourie, Nainital and Almora lie in this section.
3. **Sub/Outer Himalayas or Shivaliks:** This section has a breadth of 15 – 50 km and an average height between 1000 – 1500 m. These ranges are mainly made of fluvial deposits. This section is characterized by longitudinal valleys known as DUNES such as Dehradun, Patli Dun and others.

SIGNIFICANCE OF THE HIMALAYAS

The Himalayas are the main source of the North Indian rivers which provide i) water for drinking, ii) irrigate the fertile North Indian plain and iii) are used as major source of generating hydel power. These rivers also bring fertile soils to the Indian plains.

The Himalayas also have a profound influence on the sub-continental climate. They protect India from the cold winds blowing from the north during winters and do not allow the south-west monsoons to cross over the north. The Himalayas have rich reserves of some important minerals and a variety of flora and fauna. The Himalayas have a great potential as a tourist centre.

Q5. 2) THE NORTHERN PLAINS

The northern plains or the Great Indian Plains lies to the south of the northern mountains. This region is a vast alluvial plain stretching for about 2,500 kms from west to east. In fact, it is one of the largest stretches of alluvium in the world. This plain is flat lowland with an elevation of less than 300 metres above sea level.

The Northern plains of India are constituted by two large river basins. These are:

a) The Indus River Basin

b) The Ganga-Brahmaputra Basin

- a) **The Indus River Basin:** This region is drained by the Indus and its Tributaries. The Indus rises beyond the Himalayas, near Lake Mansarovar and flows in northwest directions. The Indus flowing westwards enters Leh division of Jammu & Kashmir State and then takes a southward turn after entering Pakistan. It drains into Arabian Sea. Its main tributaries are the Jhelum, Chenab, Ravi, Beas and Satluj. Only a part of the Indus basin lies in India.
- b) **The Ganga-Brahmaputra Basin:** The western and the central part of the great plains or we can say the core of the northern plain is formed by the Ganga and its tributaries. The Indus Basin is separated from the Ganga basin by a low watershed. East of this watershed extends the vast plains of Ganga and its tributaries. The Alaknanda and the Bhagirathi are the two source streams of the Ganga. They unite at Devprayag. It is the longest river in India. The Yamuna, Ghaghra, Gandak and Kosi are the major tributaries of the Ganga river system. All of these rivers rise in the Himalayas. The Ganga receives some tributaries from peninsular plateau also. The major tributaries from peninsular sides are Chambal, Betwa, Son and Damodar.

The eastern most part of the Great Plains is formed by the Brahmaputra River. The Brahmaputra rises in Tibet, where it is called Tsangpo and enters India in the northeast in Arunachal Pradesh. It flows westwards through Assam and then turns to the south to enter Bangladesh. The Brahmaputra plains are relatively narrow lowlands extending over a length of about 700 kms. The Ganga in its lower reaches joins the Brahmaputra and the combined river divides itself into many distributaries and forms the world's largest delta (Sundarban Delta) in West Bengal and Bangladesh. These rivers have been depositing alluvium in this region for thousands of years making it one of the most fertile plains of the world.

SIGNIFICANCE OF NORTHERN PLAINS

This region is of immense economic significance; fertile soil, perennial water sources and a favourable climate have made this region ideal for agriculture. These plains have a heavy concentration of population and support 40% of India's population because of their immense productivity. Considering the traditional Indian regard for rivers, the Hardwar and Varanasi.

THE PENINSULAR PLATEAU

To the south of the Great plain of northern India lies the extensive peninsular plateau. This plateau covering nearly half of the area of India is triangular in shape with a broad base in the north and a narrow apex to the south. The peninsular plateau is made up of ancient igneous and metamorphic rocks. It is the oldest part of the Indian sub-continent. The plateau has an undulating surface with gentle slopes. This plateau is divided by the Narmada River into two parts; 1) The Central High Lands 2) The Deccan Plateau.

1. **The Central High Lands:** It is bound by the Aravalli range in the northwest merging gradually with the Ganga plain in the north. Aravalli range is one of the oldest mountain ranges in the world. The central high lands consist of a series of plateaus from west to east. The western part of the central high lands is known as the Malwa plateau. Its eastern part in south Bihar is known as Chhotanagpur plateau. The central part of these central highlands are drained by the rivers Chambal, Sind, Son and Damodar. All rivers rising in this join the Ganga system.

2. **The Deccan Plateau:** The part of the peninsular plateau extending south of the Vindhyas is called the Deccan Plateau (the word Deccan means south).

The western edge of the Deccan plateau is called the Western Ghats. (The word Ghat means small hills). The Western Ghats have an average height of 1,000 metres above the sea level and the height of these ghats increase from north to south. The western ghats rise steeply from the western coast of India and run parallel to the Arabian sea coast. The Sahyadri, the Nilgiri, the Annamalai and the cardamom hills. Anaimudi (2695 mts above sea level) is the highest peak of the peninsular India.

The Deccan Plateau slopes gently towards the east. The eastern edge of the Deccan plateau is called the eastern Ghats, consists of low discontinuous hills. The height of the eastern ghats varies from 300 to 900 metre above sea level. these Ghats run parallel to the Bay of Bengal coast.

The Eastern Ghats and the Western Ghats coverage in the Nilgiri Hills in the south. Hills and mountains of the peninsular India are remnants of the mountains of past. They have eroded by various agents of gradation over a long period of time.

The northwestern part of Deccan plateau is covered or made up of lava deposits. This region covering almost the whole of Maharashtra and parts of Gujarat and Madhya Pradesh, is called the Deccan Trap.

A large number of rivers flow through the Deccan plateau region. The river Narmada flowing through a narrow rift valley between the Vindhyas and the Satpuras and the river Tapi flowing south of Satpura range. These rivers flow westwards and join the Arabian Sea the other major rivers of the Deccan plateau including the Mahanadi, Godavari, Krishna and Kaveri, all flow in to the Bay of Bengal. All these 4 rivers make their deltas near the coast. The Godavari is the largest among the rivers of the Deccan plateau.

SIGNIFICANCE OF PENINSULAR PLATEAU

The peninsular plateau is geologically very rich in metallic and non-metallic minerals a large chunk of these comes from the Chotanagpur plateau. Its topography is ideally suited for tapping Hydel power potential of the peninsular rivers.

THE COASTAL PLAINS

On the western and the eastern margins of the Deccan plateau stretch the western and the eastern coastal plains.

The Western Coastal plain is broadest in the north and includes the plain of Gujarat as well. It narrows down towards south. South of Gujarat, it is known as the coast. The southern part of the coast is known as the Malabar Coast. The western coast plains having estuaries of the Narmada and the Tapi in the north and lagoons or backwaters in the south.

The Eastern Coastal plain is wider and more leveled than the western coast, in the north this plain merges with plains of the Ganga Brahmaputra delta. This plain includes the fertile deltas of the Mahanadi, Godavari, Krishna and Kaveri. The northern part of this coast is known as Northern circle and the southern part as Coromandel coast.

THE GREAT INDIAN DESERT

To the north west of the Aravallis lies the Great Indian Desert. It occupies a major part of the state of Rajasthan and extends to Sind into Pakistan as the Thar Desert. The land is generally sandy and covered with sand oil. The few small rivers that are seen here either drain into salt lakes or disappear into the sand. Thus, it is a region of inland drainage.

THE ISLANDS

India has in all 247 islands of which 204 lie in the Bay of Bengal the Andaman and Nicobar islands and the remaining in the Arabian Sea Lakshadweep islands and the Gulf of Mannar between India and Sri Lanka.

To the West of Kerala coast, there is a cluster of numerous small islands. They are collectively known as the Lakshadweep islands, none of which is more than a couple of kilometers either way. They are of coral origin.

In Eastern part of the Bay of Bengal, there are the Andaman and Nicobar islands. They are fairly large, and more numerous than the Lakshadweep. Some of them are of volcanic origin, others are submerged hill ranges. The southernmost part of India, called the Indira point, is located in Great Nicobar islands.

(Textual Questions)

INDIA AS WELL-KNIT GEOGRAPHICAL UNIT

The physical conditions vary from one part of India to the other, but these physical divisions together form one geographical unit. Not only are the physical divisions inter-related, they are inter-dependant also. The mountains of the north have in the past protected India from invasions from north thus helping India in prospering in peace. This region is important to its climatic role also these mountains play a vital role in causing rains in the northern plains by obstructing the monsoon winds, in the absence of this barrier, much of northern India would have been a desert. This region is important also for large forest and water power sources. The northern plains are among the most fertile agricultural areas in the world. Due to fertile soil and abundant water supply, these plains are a source of industrial raw materials such as cotton, jute and sugarcane.

The peninsular plateau is important for the mineral resources. It has large reserves of minerals such as coal, iron and many other important minerals. The plateau region also produces many crops such as oilseeds, pulses and millets. The coastal plains are also important for agricultural products.

Although each of the physical divisions of India is rich in resources of one type or the other and produces a variety of goods, none of these regions is capable of developing on its own. Still each region contributes to the welfare of the people of the whole country. These regions and their resources together make India a strong nation. Thus, in spite of the physical diversity, there is unity in India.

SUBCONTINENT

A subcontinent is a big geographical unit, which stands out distinctly from the rest of the continent.

THE INDIAN SUBCONTINENT

The countries that form the Indian sub-continent are Pakistan in the north-west, India at the core, Nepal in the North, Bhutan in the northeast and Bangladesh in the east.

The Indian subcontinent was formed millions of years ago. The area now occupied by the Himalayas and the northern plains of India was under a sea, called 'Tethys'. It was elongated and shallow sea sandwiched between the two giant landmasses-'The Angaraland' in the north and 'The Gondwanaland' in the south. Denudation of the two landmasses for millions of years resulted in deposition of silt into the Tethys. These two giant landmasses were slowly but steadily heading towards each other. Their collision resulted in the formation of the Himalayas. As the Himalayas began to gain in height, the rivers and other agents of denudation became increasingly active in eroding them and carrying huge amounts of silt to deposit in Tethys. The result was the formation of the Northern plains.

Q6. THE MIDDLE HIMALAYAS

The middle Himalayas lie to the south of the Himadri. They extend over an average width of 50 km and have an altitude of 3700, to 4500 metres. The Pir Panjal, the Dhauladhar and the Mahabharat ranges are part

of this group. Many important hill stations of north India – Dharmashala, Dalhousie, Shimla, Mussoorie and Darjeeling are located on this range.

Q1. TEXTUAL QUESTIONS

- i) The island group lying in the Bay of Bengal is the Andaman and Nicobar islands.
- ii) Kanyakumari is the place that is situated on three seas.
- iii) The Andaman and Nicobar Islands and the Lakshdweep lie to the south west of India.
- iv) The Suez canal reduces the distance between India and Europe by 7000kms.
- v) A ship going from Singapore to Mogadishu has to cross the Indian Ocean.
- vi) The countries constituting the Indian sub-continent are India, Pakistan, Nepal, Bangladesh, and Bhutan.
- vii) The neighbouring states of J&K States are Punjab and Himachal Pradesh.
- viii) District headquarters of Kashmir division are Srinagar, Budgam, Anantnag, Pulwama, Baramulla, Kupwara.
- ix) The districts of Jammu are :
Jammu, Kathua, Udhampur, Doda, Rajouri, Poonch.
- x) There is a difference of 30 minutes between IST and PST because India is ahead of GMT by 5 hours whereas Pakistan is only 5 hours ahead of GMT.

Q2. The Tropic of Cancer passes right through the centre of India and divides it roughly into halves. The southern half of country lies within the tropics and the northern half belongs to the subtropical zone. The places lying south of the Tropic of Cancer will have the sun overhead at least twice every year. Now, Ahmedabad and Kolkata lie to the south of the Tropic of Cancer and are very close to it. Thus, they have the sun overhead twice a year.

Q3. The Indian mainland extends over a distance of 3214 km north to south and 2,933 km east to west. There is a huge time difference between the two extremes. Thus, India needs a prime meridian. As such, time along the standard meridian of India ($82^{\circ} 30'$ E) passing through Allahabad is taken as the standard time of the whole country.

Q4. On notes:

Q5. The central location of India at the head of the Indian Ocean is of great advantage to her. Countries of east Africa, west Asia, south and south East Asia, could be reached through sea routes. This has helped India to establish close cultural and commercial contacts with many countries.

Q6. India's contact with the outside world has continued through the ages. India exchanged ideas and commodities with the outside world. She gave the world the ideas of the Upanishads and the Ramayana, the Panchtantra, the Indian numerals and the decimal system. Many commodities were spices, Muslims were taken to different countries. India imported the Greek Sculpture, the architectural styles of dome and minarets from west Asia.

Q1. TEXTUAL QUESTION (CHAPTER RELIEF)

- i. The two forces which are responsible for shaping the present landform features of India are the internal movements below the earth's crust and external forces operating on the earth.
- ii. Radioactive decay in the interior of the earth produces heat, which escapes towards the surface producing convection currents in the molten rocks. These rising currents tear the crust apart, dividing it into large fragments called tectonic plates.

- iii. The continents Sout – America, Africa, Australia and Antarctica.
- iv. A bhabar is a narrow belt of 8 to 16 km covered with pebbles lying along the foot of the Shivaliks form the Indus to the Tista.
- v. The three major division of the Himalayas from north to south are the Shiwalik, the Himachal and the Himadiri.
- vi. When the Himalays were being formed , the western part of the plateau subsides. The Indian Ocean advanced to occupy this depression and the Arabian sea was formed.
- vii. The Shiwaliks are made of unconsolidated sediments at a very high altitude. Thus, these are prone to landslides.
- viii. The two passes of the eastern Himalayas are Nothula and Bomdila.
- ix. The Maliva plateau lies between n the Arawali and the Vidhyan ranges .
- x. The Lakshadweep island group of India has coral origin.
- xi. The Physiographic division of J&K State are Jammu , Kashmir and Ladakh.
- xii. A loo is a strong, hot and dry wing blowing during day over northern and north-western India.
- xiii. The Karakoram
- xiv. The glaciers of Karakoram range are the Baltoro and the Siachin.
- xv. The outer plains of J&K state consist of Akhnoor, R.S. Pora, Samba and Kathua.

Q3. Crores of years ago, India was a part of the Gondwanaland, the convection currents of the mantle fractured it into a number of pieces. The Indo-Australian plate got separated from the Gondwanaland and drifted slowly towards north. It collided with the much larger Eurasian plate in the northern hemisphere. The northern edge of the Indo-Australian plate was pushed beneath the Eurasian plate. Under the impact of this collision, the sedimentary rocks of the enclosed ocean were folded to form the mountain system of the Himalayas.

