**PHYSICAL FEATURES OF INDIA**

**Introduction**:

India is a vast country with varied land forms. Our country has practically all major physical features of the earth, i.e., mountains, plains, deserts, plateaus and islands.

**Formation of the Physical Features:**

* There are different types of rocks; some are very hard, like marble and are very soft like soap stone.
* The colour of soil varies from one place to the other because soil is formed out of different types of rocks.
* Most of these variations are caused due to differences in rock formations.
* The relief features of India are formed by geological formations, weathering, erosion and deposition, have created and modified the relief to its present form.
* Earth scientists have attempted to explain the formation of physical features with the help of some theories based on certain evidences.
* According to ‘**Theory of Tectonics**’, the crust of the earth has been formed out of seven major and some minor plates.
* Due to the movement of the plates, stresses are caused within the plates and the continental rocks above.
* This leads to folding, faulting and volcanic activity.
* Some plates come towards each other and form convergent boundary.
* When two plates come together, they either collide and crumble, or one may slide under the other. At times, they may also move horizontally past each other and form transform boundary.

**Oldest landform – Himalayas**

* The oldest landmass was a part of the Gondwana land which included India, Australia, South Africa, South America and Antarctica as one single land mass.
* Due to convectional currents, this land mass split into a number of pieces.
* The Indo-Australian plate drifted apart and moved towards north.
* This resulted in the collision of the Indo-Australian plate with the European Plate.
* Due to this collision, the Tethys were folded and the Himalayas were formed.

**Formation of the Northern Plains:**

* The uplifting of the Himalayas resulted in the formation of a large basin.
* Gradually this basin got filled with the sediments by the rivers flowing from the mountains.
* A flat land of extensive alluvial deposits led to the formation of the northern plains of India.

**Major physiographic divisions:**

* The Himalayan Mountains
* The Northern Plains
* The Peninsular Plateau
* The Indian Desert
* The Coastline Plains
* The Islands

1. **The Himalayan Mountains**

* They are geologically young and structurally fold mountains.
* They stretch over the northern borders of India.
* These mountain ranges run in a west-east direction from the Indus to the Brahmaputra. The Himalayas covers a distance of about 2,400 Km. Their width from 400 Km in Kashmir to 150 Km in Arunachal Pradesh.
* The Himalaya consists of three parallel ranges in its longitudinal extent.

**The Greater or the Inner Himalayas:**

* This is the northern-most range also called the Himadri.
* It is the most continuous range consisting of the loftiest peaks with an average height of 6,000 metres.
* All prominent Himalayan peaks lie here.
* They are asymmetrical in nature.
* The core is composed of granite.
* It is perennially covered with snow, and a number of glaciers descend from this range.

**The Lesser Himalayas or Himachal:**

* This range lies to the south of the Himadri and forms the most rugged mountain system.
* The ranges are mainly composed of highly compressed and altered rocks.
* The altitude varies between 3,700 and 4,500 metres and the average width is of 50 Km.
* The Pir Panjal range forms the longest and the most important range.
* The 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.

**The Shiwaliks:**

* This is the outer-most range of the Himalayas.
* They extend over a width of 10-50 Km.
* They have an altitude varying between 900 and 1100 metres.
* These ranges are composed of unconsolidated sediments brought down by rivers from the main Himalayan ranges located farther north.
* These valleys are covered with thick gravel and alluvium.
* 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.

**Regional Division of the Himalayas:**

* These divisions have been demarcated by river valley.
* The part lying Indus and Satluj are known as Kashmir and Himachal Himalaya from west to east respectively.
* The part of the Himalayas lying between Satluj and Kali rivers in known as Kumaon Himalayas.
* The Kali and Teesta rivers demarcate the Nepal Himalayas.
* The part lying between Teesta and Dihang rivers is known as Assam Himalayas.
* The Brahmaputra marks the eastern-most boundary of the Himalayas.

**The Eastern Hills or the Purvachal:**

* Beyond the Dihang gorge, the Himalayas bend sharply to the south and spread along the eastern boundary of India.
* These hills running through the north-eastern states.
* They are mostly composed of strong sandstones, which are sedimentary rocks.
* They are covered with dense forests and run as parallel ranges and valley.
* The Purvachal comprises the Patkai hill, the Naga hills, the Manipur hills and the Mizo hills.

1. **The Northern Plains**

* The northern plain has been formed the three major river systems, namely – the Indus, the Ganga and the Brahmaputra along with their tributaries.
* This plain is formed of alluvial soil.
* The plain which is about of 7 lakh sq. km.
* The plain which about 2400 km long and 240 to 320 km broad, is a densely populated area.
* The northern plains are favourable for agriculture because of a rich soil cover, adequate water supply and favourable climate.
* As the velocity of the river decreases, riverine islands are formed.
* The rivers in their lower course split into numerous channels called distributaries due to the deposition of silt.
* The Northern Plain is broadly divided into three sections.

**The Punjab Plains:**

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

**The Ganga Plains:**

* The Ganga plain extends between Ghaggar and Teesta rivers.
* It is spread over the states of North India, Haryana, Delhi, U.P., Bihar, Jharkhand and West Bengal to its East.

**The Brahmaputra Plain:**

* This part particularly lies in Assam.
* Division according to the variations in relief features:

**Bhabar**:

* This is formed by the deposition of pebbles by the rivers that descends from the mountains.
* It is a narrow belt of about 8 to 16 km in width lying parallel to the slopes of the Shiwaliks.
* All the streams disappear in this bhabar belt.

**Terai:**

* This is the region where the streams and rivers re-emerge and create a wet, swampy and marshy region.
* This was a thickly forested region full of wildlife which have been cleared to create agricultural land and to settle migrants from Pakistan after partition.

**Bhangar:**

* This is the largest part of the northern plain and is formed of older alluvium.
* It lies above the floodplains of the rivers and presents a terrace-like feature.
* The soil in this region contains calcareous deposits, locally known as kankar.

**Khadar:**

* These are newer, younger deposits of the floodplains.
* They are renewed almost every year and are ideal for intensive agriculture.

1. **The Peninsular Plateau**

* It 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.
* The plateau has broad and shallow valleys and rounded hills.
* This plateau consists of two broad divisions.

**The Central Highlands:**

* This part lies to the north of the Narmada River and covers a major area of the Malwa plateau.
* The Vindhyan range is bounded by the Satpura range on the south and the Aravalis on the northwest.
* Towards the west it gradually merges with the sandy and rocky desert of Rajasthan.
* The rivers here are Chambal, the Sind, the Betwa and the Ken.
* The Central Highlands are wider in the west but narrower in the east.
* The eastward extensions of this plateau are locally known as the Bundelkhand and Baghelkhand.
* The Chotanagpur plateau marks the further eastward extension, drained by the Damodar river.

**The Deccan Plateau:**

* It is a triangular landmass that lies to the south of the river Narmada.
* The Satpura range is to the south and the Mahadev, the Kaimur hills and the Maikal range are to its east.
* The Deccan Plateau is higher in the west and slopes gently eastwards.
* The Plateau extends to the northeast and is known as the Meghalaya, Karbi-Anglong Plateau and North Cachar Hills.
* It is separated by a fault from the Chotanagpur Plateau.
* Three prominent hill ranges from the west to the east are the Garo, the Khasi and the Jaintia Hills.

**Western Ghats**

* Western Ghats lie parallel to the western coast.
* They are continuous and can be crossed through passes only.
* The Western Ghats are higher than the Eastern Ghats.
* Their average elevation is 900-1600 metres.
* The Western Ghats cause orographic rain by facing the rain bearing moist winds to rise along the western slopes of the Ghats.
* The height of the Western Ghats progressively increases from north to south.
* The highest peaks include the Anai Mudi (2,695 metres) and the Doda Betta (2,637 metres).

**Eastern Ghats**

* The average elevation of the Eastern Ghats is 600 metres.
* The Eastern Ghats stretch from the Mahanadi Valley to the Nilgiris in the south.
* They are discontinuous and irregular and dissected by rivers draining into the Bay of Bengal.
* Mahendragiri (1,501 metres) is the highest peak in the Eastern Ghats.
* Shevroy Hills and the Javadi Hills are located to the southeast of the Eastern Ghats.

**Black Soil**

* The Peninsular plateau is known for the black soil area called the Deccan Trap.
* This is of volcanic origin; hence, the rocks are igneous.

**The Aravali Hills**

* The Aravali Hills lie on the western and northwestern margins of the peninsular plateau.
* These are highly eroded hills and are found as broken hills.
* They extend from Gujarat to Delhi in a southwest-northeast direction.

1. **The Indian Desert**

* It lies towards the western margins of the Aravali Hills.
* It is a sandy plain covered with sand dunes.
* This region receives very low rainfall below 150 mm per year.
* It has arid climate with low vegetation cover.
* Streams appear during the rainy season.
* Luni is the only large river in this region.
* Barchans cover larger areas but longitudinal dunes become more prominent near the Indo-Pakistan boundary.

1. **The Coastal Plains**

* These are stretch of narrow coastal strips, running along the Arabian Sea on the west and the Bay of Bengal on the east.
* The western coast, between the Western Ghats and the Arabian Sea, is 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.
* The southern stretch is referred to as the Malabar Coast.
* The plains along the Bay of Bengal are wide and level.
* In the northern part, it is called the Northern Circar.
* The southern part is known as the Coromandel 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. It is the largest salt water lake in India. It lies in the state of Odisha, to the south of the Mahanadi delta.

1. **The Islands**

**Lakshadweep Islands:**

* This group of islands is comprised of small coral islands.
* It covers small area of 32 sq km.
* Kavaratti island is the administrative headquarters of Lakshadweep.
* The Pitti island, which is uninhabited, has a bird sanctuary.

**Andaman and Nicobar Islands:**

* These are the elongated chain of islands located in the Bay of Bengal.
* They are bigger in size and are more numerous and scattered.
* The Andaman lies in the north and the Nicobar in the south.
* These islands lie close to equator and experience equatorial climate and have thick forest cover.
* India’s only active volcano is found on Barren island in Andaman and Nicobar group of islands.