1 INDIA–SIZE AND LOCATION

Chapter at a Glance

India

Location

- **Location:** India is located in Northern hemisphere.
- **Latitudinal Extent** is 8°4' N–37°6' N of India which influences the duration of day and night.
- **Longitudinal Extent:** 68°7' E to 97°25' E is Indian longitudinal extent due to which there is a 2 hour difference between Arunachal Pradesh and Gujarat.
- **Tropic of Cancer:** (23°30'N) divides India into 2 halves.
- **Islands:** Lakshadweep Islands is in the Arabian Sea, Andaman and Nicobar Islands in the Bay of Bengal.

Size

- **Area:** India has a total area of 3.28 million square km. It is 2.4% of the world's total area.
- **Size of India:** India is 7th largest country in the world after Russia, Canada, U.S.A, China Brazil and Australia.
- **Boundaries of India:** India is bounded by the Himalayas in the north, northwest and northeast, the Arabian Sea to the west, the Bay of Bengal to the east and the Indian Ocean to the south.
- **India's land boundary** is 15,200 km with the Coastline of 7516.6 km.
- **Standard Meridian:** To overcome this difference India has selected 82°30' E as the standard meridian of India.

India and the World

Significance of the India's central location

- India is located in the centre between east Asia and west Asia.
- The trans Indian Ocean routes which connect the countries of Europe in the west and countries of east Asia provides a strategic central location to India.
- The Deccan Peninsula protrudes into Indian ocean, helping India to have close contact with west Asia, Africa and Europe from the western coast and with southeast and east Asia from the eastern coast.
- Indian Ocean gets it name from India since India has a long coastline on this ocean.

Contacts

- India's contacts through land routes are much old than those through the sea as people were afraid of travel by sea.
- These land routes were through the mountain passes.
- The ancient travellers exchanged ideas and commodities as they moved through these routes.
- The ideas of *Upanishads*, *Ramayana*, stories of *Panchatantra*, Indian numerals and the decimal system spread to many parts of the world.
- Similarly the influence of greek sculpture, the architectural styles of domes and minarates of west Asia can be seen in India.

Water bodies around India

- **Bay**
  - Bay of Bengal
- **Gulfs**
  - Gulf of Kutchch
  - Gulf of Mannar
  - Gulf of Khambat (Cambay)
- **Seas**
  - Arabian Sea
  - Lakshadweep Sea
  - Andaman Sea
- **Ocean**
  - Indian Ocean
- **Strait**
  - Palk Strait

Neighbouring Countries of India

- Pakistan and Afganistan in the west.
- China (Tibet), Nepal and Bhutan in north.
- Myanmar and Bangladesh in the east.
- Sri Lanka and Maldives in the south.

Countries of the Indian Subcontinent

- Pakistan in the west.
- Sri Lanka in the south-east
- Afghanistan in the north-west
- Maldives in the south
- India in the centre
- Myanmar and Bangladesh in the east
- China (Tibet), Bhutan and Nepal in the north

2 PHYSICAL FEATURES OF INDIA

Chapter at a Glance

Physical Features of India

- Theory of Plate Tectonics
- History of Indian Subcontinent (formation)
- Formation of Himalayas and Northern Plains of India

Theory of Plate Tectonics

The earth's crust has been formed out of seven major and some minor plates

Types of Plate Movements

- **Convergent Boundary**
  - When two plates come towards each other.
  - It leads to collision, crumble or one plate may slide under the other. Resulting into folding, faulting and volcanic activity.
- **Divergent Boundary**
  - When two plates move away from one another.
  - It leads to faulting or breaking of rocks.
- **Transform Boundary**
  - When two plates move past horizontally.

History of the Indian Subcontinent (formation)

Oldest landmass—Gondwana land

↓

Gondwana land—included India, Australia, South Africa, South America and Antarctica as one single landmass.

↓

Convectional currents toss the earth's crust into a number of pieces.

↓

Led to the drifting of the Indo-Australian plate.

↓

Its northward drift led to its collision with the much larger Eurasian plate.

↓

This in turn led to the folding of the sedimentary rocks found in the Tethys Sea and led to the formation of mountain system of western Asia and Himalayas.

Formation of Himalayas and Northern Plains of India

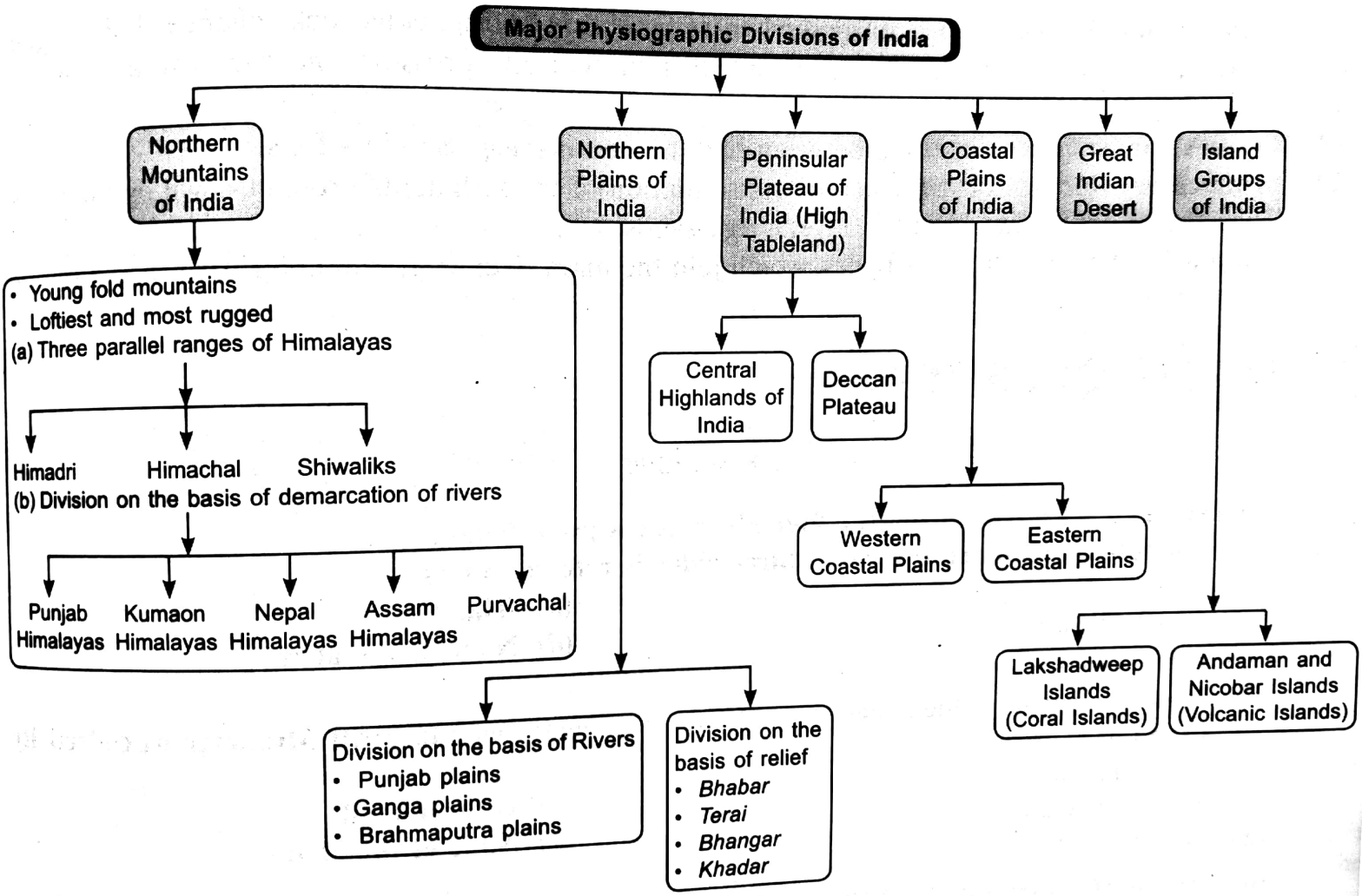
The Himalayas were formed out of the sediments of the Tethys Sea and subsidence of the northern flank of the peninsular plateau.

↓

The depression that was formed gradually got filled with sediments by the rivers.

↓

The deposition of the sediments led to the formation of the Northern Plains of India.



DRAINAGE 3

Chapter at a Glance

Drainage

The Drainage
The river system of an area

Drainage Basin
An area drained by a single river system

Water Divide
An upland/elevated area separating two drainage basins

Drainage Patterns

- **Dendritic**
  River with its tributaries resembles the branches of a tree
- **Trellis**
  Tributaries join the main river at right angles
- **Rectangular**
  Formed on a strongly jointed rocky terrain
- **Radial**
  Streams flow in different directions from a central peak or dome-like structure

Drainage Systems in India are controlled by the relief features of the sub-continent

Major Groups of Indian Rivers

- **The Himalayan Rivers**
- **The Peninsular Rivers**

The Himalayan Rivers

Indus River
Length: 2,900 km

Source
- In Tibet near Mansarowar lake
- Enters India in Ladakh region of Jammu & Kashmir

Tributaries
- The Zaskar, the Nubra, the Shyok and the Hunza in Kashmir
- Other Tributaries are the Satluj, the Ravi, the Beas, the Jhelum and the Chennab join Indus at Mithankot in Pakistan

River Delta
River Indus ultimately drains into the Arabian Sea east of Karachi forming a delta

Ganga River
Length: Over 2,500 km

Source
- Headwater of River Ganga is Bhagirathi fed by the Gangotri Glacier
- Joined by Alaknanda at Devaprayag in Uttarakhand

Tributaries
- The Yamuna, the Ghaghara, the Gandak and the Kosi
- Tributaries coming from Peninsular India are the Chambal, the Betwa and the Son
- Joined by all its tributaries the Ganga river enters Bangladesh where it is joined by Brahmaputra river

Brahmaputra River

Source
- Rises in Tibet east of Mansarowar lake.
- At Namcha Barwa it takes a U-turn to enter India in Arunachal Pradesh through a Gorge. In Arunachal Pradesh it is call Dihang.

Tributaries
Dibang, the Lohit, the Kenula and many others in Assam.

Largest Delta
Both the rivers forms Sunderbans, the largest and fastest growing delta in the world

Peninsular Rivers

The Narmada Basin
Narmada basin formed by Narmada river

Source
Amarkantak hills in Madhya Pradesh and falls into the Arabian Sea

Tributaries
Short and join the main river at right angles

Drainage Basin
Drains the states of Madhya Pradesh and Gujarat

Tapi Basin
Tapi basin formed by Tapi river

Source
Rises in the Satpura ranges in Betul district of Madhya Pradesh and drains into the Arabian Sea

Drainage Basin
Basin drains the states of Gujarat, Maharashtra and Madhya Pradesh

Godavari Basin
Godavari basin formed by Godavari river

Distincet Feature
Largest Peninsular river

Source
Slopes of Western Ghats in the Nasik district of Maharashtra and drains into the Bay of Bengal

Length
1500 km

Drainage Basin
Drains the states of Maharashtra (50% area), Madhya Pradesh, Odisha and Andhra Pradesh

Tributaries
The Purna, the Wardha, the Pranhita, the Manjra, the Wainganga and the Penganga

Dakshin Ganga
Godavari so called because of its large length and area coverage

Mahanadi Basin
Mahanadi basin formed by Mahanadi river

Source
Highlands of Chhattisgarh and flows through Odisha to reach the Bay of Bengal

Length
860 km long

Drainage Basin
Covers the states of Maharashtra, Chhattisgarh, Jharkhand and Odisha

Krishna Basin
Krishna basin formed by Krishna river

Source
Rises from a spring near Mahabaleshwar and drains into the Bay of Bengal

Length
1400 km

Tributaries
The Tungabhadra, the Koyana, the Ghatprabha, the Musi and the Bhima

Drainage Basin
Covers the states of Maharashtra, Karnataka and Andhra Pradesh

Kaveri Basin
Kaveri basin formed by Kaveri river

Source
Brahmagri range of the Western Ghats and reaches the Bay of Bengal in south Cuddalore in Tamil Nadu

Length
760 km

Main Tributaries
Amravati, Bhavani, Hemavati and Kabini

Drainage Basin
Parts of Karnataka, Kerala and Tamil Nadu

Other Peninsular Rivers
- Brahmani
- Baitarni
- Damoder
- Sabarmrekha

All these rivers drain into the Bay of Bengal

Lakes of India

Lake
A body of water that lies in a hollow in the earth's surface and is surrounded by land

Salt water lakes or Lagoons
Example: Chilika lake, Pulicat lake, Kollero lake

Fresh water lakes
Example: **Wular lake** (Largest in India), Dal, Bhimtal, Nainital, Loktak and Barapani lake

Man made lakes
Example: Guru Gobind Sagar lake of Bhakra Nangal Dam