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G.S. PAPER

INDIAN & WEST BENGAL GEOGRAPHY

S.No.	. Chapter Name			
1.	India -Size and Location			
	Indian Standard Meridian			
2.	Physiographic Divisions of India			
	Himalayan Mountains			
	Great Plains of India			
	Coastal Plains			
	Indian Desert			
	Peninsular Plateau			
	Islands of India			
3.	Volcanism and Earthquake	48		
	• Volcano			
	Earthquake			
4.	Indian Drainage System	55		
	Types of Drainage Patterns			
	Drainage system of India			
	River Regime			
	River Capture			
	Shifting Courses of Rivers			
	Interlinking of rivers			
	• Lakes			
	Water Resources of India			
	Inter-State River Water Disputes			
	Watershed Management			
	Rainwater harvesting			
	Waterfalls			
5.	Climate of India	96		
	Seasons in India			
	Factors Influencing Indian Climate			
	Indian Monsoon			
	Climatic Regions of India			
	• Drought			
	• Floods			
6.	Soils in India			
	Types of Soils in India			
	Problems of Indian soil			
	Soil Conservation			
7.	Natural Resources of India	133		
	Types of Non-Renewable Resources			
	Mineral Resources			
	Biotic Resources In India			

8.	Energy resources	162
	Conventional Sources	
	Non-conventional sources	
	Energy Crisis	
	India's Energy Consumption	
	Energy Security	
	Government Initiatives for Energy Conservation	
9.	Industrial Regions of India	182
	Major Industrial Regions of India	
	Minor Industrial Regions	
	Mjor Industries in India	
10.	Transportation in India	185
	Road Transport	
	Rail Transport	
	Water Transport	
	Air Transport	
11.	Agriculture	203
	Types of Agricultural Revolution in India	
	Cropping System and Cropping Pattern in India	
	Farming Systems	
	Cropping Seasons in India	
	Crop Classification	
	Important Crops of India	

WEST BENGAL GEOGRAPHY

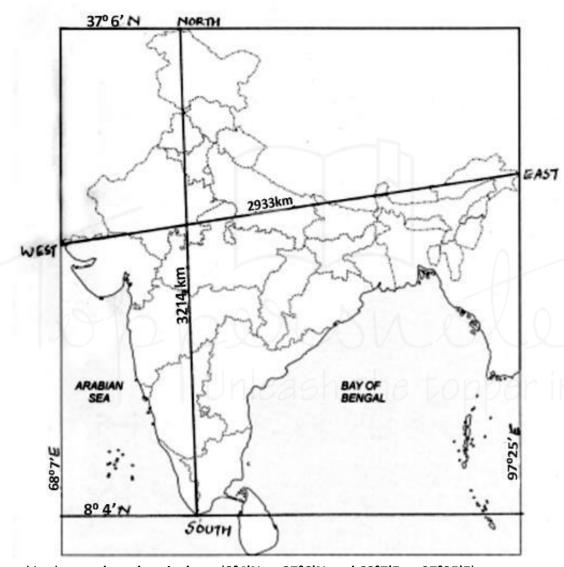
S.No.	Chapter Name	Page No.
1.	Location and Boundary of West Bengal	218
	 Location and Size 	
	Boundary and Extent	
2.	Physiographic Division of West Bengal	220
	The Northern Mountains	
	Terai-Duar Region	
	Northern Plain	
	Southern Plain Region	
	Sundarban Delta	
	Coastal Fringe	
3.	Drainage System of West Bengal	224
	Rivers of West Bengal	
	 Lakes of West Bengal 	
	Water Falls in West Bengal	
	Wetlands in West Bengal	
4.	Climate of West Bengal	234
	 Factors affecting Climate of West Bengal 	
	 General Characteristics of Climate of West Bengal 	
	 Seasons in West Bengal 	
	 Floods in West Bengal 	
	Cyclones in West Bengal	
5.	Soils of West Bengal	241
	Mountain And Forest Soil	
	Old Alluvium	
	New Alluvium	
	Red Soil	
	Laterite soil	
	Clayey Saline Soil	
	Soil Erosion in West Bengal	
6.	Natural Vegetation and Wildlife of West Bengal	244
	 Forest Area and Forest Cover 	
	 Classification of Forest in West Bengal 	
	 National Parks and Wildlife Sanctuaries in West Bengal 	
	Wildlife Sanctuaries in West Bengal	
	Elephant Reserves in West Bengal	
	Zoological Parks of West Bengal	
7	Mineral and Energy Resources of West Bengal	251
	Mineral Resources	
	Energy Resources in West Bengal	

8	Agriculture and Allied Sectors of West Bengal	260
	Agro-Climatic Zones	
	Major Crops of West Bengal	
	Agri-Export Zones of West Bengal	
	Horticulture And Floriculture In West Bengal	
	Irrigation In West Bengal	
	Animal Husbandry in West Bengal	
	Fisheries In West Bengal	
9	Demography of West Bengal	272
	West Bengal Population	
	Castes And Tribes Of West Bengal	
10	Industries in West Bengal	277
	Major Industries in West Bengal	
	Industrial Region of West Bengal	
	Small Scale and Cottage Industries	
	Special Economic Zone (SEZ)	
	Industrial Parks in West Bengal	
11	Transportation and Communication of West Bengal	284
	Transport System in West Bengal	
	Communication in West Bengal	
12	Tourism in West Bengal	292
	Historical Places in West Bengal	
	Religious Centers of West Bengal	
	Famous Museums of West Bengal	
	Famous Hill Stations in West Bengal	
	Famous Beaches of West Bengal	



India -Size and Location





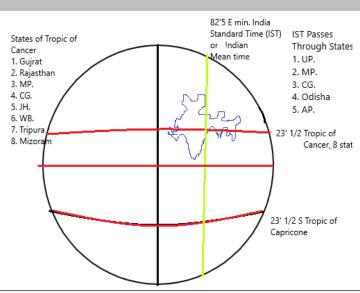
- Situated in the northern hemisphere (8°4'N to 37°6'N and 68°7'E to 97°25'E)
- Bounded by
 - O North: the Great Himalayas
 - West: Arabian SeaEast: Bay of Bengal
 - o **South**: the Indian Ocean.
- 7th largest country in the world.
- Northernmost point: Indira Col
- Southernmost point: Indira Point in the Andaman and Nicobar Islands.
- Easternmost point: near Kibithu in Anjaw district of Arunachal Pradesh
- Westernmost point: Sir Creek in Kutch, near the "Guhar Mota" in Gujarat.



- **Length**: 3214 Km
- Width: 2933 Km (longitudinal difference: 30⁰ or 2 hours)
- Area: 32,87,263 sq. km (2.42% of the world)
- Population: 2nd largest country in the world (17.5% of world's population)
- Total land boundary=15,200 km.
- Total Sea boundary= 7516.5 Km (without islands 6100 Km)
- Border Countries:
 - O North-west: Afghanistan and Pakistan
 - India-Pakistan border: Radcliffe line
 - Pakistan-Afghanistan border: Durand Line.
 - o North: China, Bhutan and Nepal
 - India-China border: McMahon line.
 - O East: Myanmar, Bangladesh (India has longest boundary with Bangladesh)
 - O **South**: Sri Lanka separated by Palk Strait and Gulf of Mannar.
- States sharing International borders:
 - o Bangladesh: total boundary= 4096km
 - 5 States: West Bengal, Mizoram, Meghalaya, Tripura, and Assam
 - o China:Total boundary=3488km
 - 3 States and1 UT: Himachal Pradesh, UttarakhandandSikkim andLadakh
 - o Pakistan: Total boundary= 3323km
 - 4 States and1 UT: Jammu andKashmir, Punjab, Gujarat, Rajasthan andLadakh
 - Nepal: Total boundary= 1751km
 - 5 States: Uttar Pradesh, Bihar, Uttarakhand, Sikkim, West Bengal
 - Myanmar: Total boundary= 1643km
 - 4 States: Arunachal Pradesh, Manipur, Mizoram, and Nagaland
 - o Bhutan: Total boundary= 699km
 - 4 States: Arunachal Pradesh, Assam, Sikkim, andWest Bengal
 - Afghanistan:total boundary= 106km
 - 1 UT: Ladakh

Indian Standard Meridian

- 82°30'E Meridian crossing through Mirzapur, UP is India's Standard Meridian.
- Ahead of mean time by 5 hours and 30 minutes.
- Tropic of cancer (23°30′N) passes through
 - Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, West Bengal, Mizoram, and Tripura.





Physiographic Divisions of India



On the basis of physical features, India is divided into 6 physiographic divisions:

- 1. Northern and North-eastern Mountains
- 2. Northern Plain
- 3. Peninsular Plateau
- 4. Indian Desert
- 5. Coastal Plains
- 6. Islands

Himalayan Mountains PAMIR KNOT RELIEF A RELIEF THOUGH AND A SON RELIEF A RANGLADEN PAKISTAN A RANGLADEN Tropic of Caroer Tropic of Caroer

- Highest andthe youngest fold mountain ranges of the world.
- One of the highest earthquake-prone regions of the world.
- Length: runs west-northwest to east-southeast in an arc 2,500 km long.
 - O Western anchor: Nanga Parbat (lies just south of the northernmost bend of the Indus river)
 - Eastern anchor: Namcha Barwa (lies immediately west of the great bend of the Yarlung Tsangpo River)
- Width: 400 km 150 km (West- east).

Physical Features

 Soaring heights, steep-sided jagged peaks, valley and alpine glaciers often of stupendous size

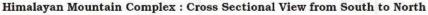




- Topography deeply cut by erosion, seemingly unfathomable river gorges, complex geologic structure, and series of elevational belts (or zones)
- Greater part of the Himalayas lies below the snow line.
- The mountain-building process that created the range is still active.
- Considerable stream erosion and gigantic landslides.

Sub Divisions of the Himalayas





North-South of Himalayas



1. Trans-Himalayan Ranges:

- Location: North of the Great Himalayas
- aka **Tibetan Himalaya** because most of it lies in Tibet.
- Lifted much before the Himalayas b/w Jurassic and Cretaceous
- Geologically not a part of the Himalayas.
- Start from Pamir Knot.
- Godwin Austen/ K2/ Qogir (8,611 m) second highest peak in the world / highest peak in the Indian Union found in Karakoram Range
- Length- 1,000 km in east-west direction.
- Average elevation 5000 m above mean sea level.
- Average width 40 km- 225 km (extremities -central part).
- Siachen glacier highest battlefield.



- Glacier Baltaro- largest mountain glacier from Karakoram range.
- **Karakoram pass** connects the **Aksai Chin** which is an erosional plateau of average height 5000m.
- Main ranges:
 - O Karakoram Range:
 - Northernmost range of the Trans-Himalayan Ranges in India
 - aka Krishnagiri range
 - Extends eastwards from Pamir for about 800 km.
 - Average elevation 5,500 m and above.
 - O Ladakh range:
 - North of the Zaskar Range
 - **Highest point** Rakaposhi
 - Lies to north of Leh.
 - Merges with the Kailash range in Tibet.
 - Important passes Khardung La, and Digar La.
 - Zaskar Range
 - A mountain range in the union territory of Ladakh.
 - Separates Zanskar from Ladakh.
 - Average height about 6,000 m.
 - Acts as a climatic barrier protecting Ladakh andZanskar from monsoon pleasantly warm and dry climate in the summer.
 - Major passes- Marbal Pass, Zojila Pass extreme northwest.
 - Major rivers- Hanle River, Khurna River, Zanskar River, Suru River (Indus), and Shingo River.
 - Kailas Range
 - Offshoot of the Ladakh Range.
 - **Highest peak** Mount Kailash (6714 m).
 - River Indus originates from the northern slopes of the Kailas range.

Ladakh Plateau

- Cold desert
- Lies to the north-east of the Karakoram Range.
- Dissected into a number of plains and mountains Soda Plains, Aksai Chin, Lingzi Tang,
 Depsang Plains and Chang Chenmo.
- Northwestern part Deosai mountains are the end of the Trans-Himalayan region

2. Great Himalaya:

- aka Himadri.
- Average height 6000 m
- Average width 25 km
- Extension Mt. Namcha Barwa to Nanga Parbat (2400 km)- one of the longest-running fold mountain ranges in the world.
- **Features:** High relief, deep gorges, vertical slopes, symmetrical convexity, and antecedent drainage.



- Terminates abruptly at the syntaxial bends.
 - O Nanga Parbat north-west
 - O Namcha Barwa north-east.
- Composed of metamorphic and sedimentary rocks.
- Core Batholith representing the intrusion of Magma (Granitic Magma)
- Have asymmetrical folds due to high compression and they have fractured rocks in the eastern part.
- 14 of the 28 tallest peaks in the world (> 8000 m) are situated here.
- Major passes Zojila Pass (connects Srinagar with Leh), Shipki La Pass, Burzil Pass, Nathu La Pass etc.
- Major glaciers Rongbuk glacier (largest in the Himadri), Gangotri, Zemu etc.
- Separated from lesser Himalayas by longitudinal valleys filled with sediments k/a Doons.
 - Eg. Patli Dun, Chaukamba Dun, DehraDun etc.

3. Middle/ Lesser/ Himachal Himalaya:

- Most rugged mountain system.
- Lies **b/w** the **Shiwaliks** in the south and the **Greater Himalayas** in the north.
- Composed of highly compressed and altered rocks.
- Average altitude 3,700 4,500 metres.
- Average width 50 to 80 Km.
- Pir Panjal range longest
 - Extends from Jhelum upper Beas river for over 300 km.
 - Rises to 5,000 metres and contains mostly volcanic rocks.
 - O Passes:
 - Pir Panjal Pass (3,480 m), the Bidil (4,270 m), Gulabgarh Pass (3,812 m) and Banihal Pass (2,835 m).
 - Banihal Pass- Jammu-Srinagar highway and Jammu-Baramulla railway.
 - O Rivers :
 - Kishanganga, the Jhelum and Chenab.
 - Important Valleys
 - Valley of Kashmir-
 - ✓ b/w the **Pir Panjal** and the **Zaskar Range** (average elevation- 1,585 m)
 - ✓ **Composed** of alluvial, lacustrine [lake deposits], fluvial [river action] and glacial deposits. {Fluvial Landforms, Glacial Landforms}
 - ✓ **Jhelum River meanders** through these deposits and cuts **a deep gorge** in Pir Panjal through which it drains.
 - Kangra Valley -
 - ✓ Extends from the foot of the Dhauladhar Range to the south of Beas.
 - Kulu Valley
 - ✓ In the upper course of the Ravi
 - ✓ A transverse valley.
- Most important range Dhaula Dhar and Mahabharat ranges.
- Includes famous valley of Kashmir, the Kangra and Kullu Valley in Himachal Pradesh.
 - Well known for its hill stations.
- Cut across by the Jhelum and Chenab river.



- Dhauladhar ranges extension of Pir Panjal into Himachal Pradesh cut across by the river Ravi.
- Mussoorie ranges divide the waters of Sutlej and Ganga
- Have steep, bare southern slopes [prevents soil formation] andmore gentle, forest covered northern slopes.
- Uttarakhand- marked by Mussoorie and Nag Tibba ranges.

Important ranges of Lesser Himalayas	Region	
Pir Panjal Range	J&K (south of Kashmir Valley)	
Dhauladhar Range	Himachal Pradesh	
Mussoorie Range and Nag Tibba Range	Uttarakhand	
Mahabharat Lekh	Nepal	

4. Sub-Himalayas/ Shiwaliks:

- aka Outer Himalayas.
- b/w Great Plains and Lesser Himalayas.
- **Altitude** 600-1500 metres.
- Length- 2,400 km Potwar Plateau to Brahmaputra valley.
- Southern slopes steep
- Northern slopes gentle.
- Width 50 km 15 km (Himachal Pradesh Arunachal Pradesh).
- Almost unbroken except for 80-90 km valley of Tista andRaidak River.
- Covered with thick forests from North-East India up to Nepal.
- Southern slopes in Punjab and Himachal Pradesh- almost NO forest cover.
- Highly dissected by seasonal streams Chos.
- Valleys part of synclines and hills part of anticlines
- Different names:

Region	Name of Shiwaliks		
Jammu Region	Jammu Hills		
Dafla, Miri, Abor andMishmi Hills	Arunachal Pradesh		
The Dhang Range, Dundwa Range	Uttarakhand		
Churia Ghat Hills	Nepal		

West Bengal Geography

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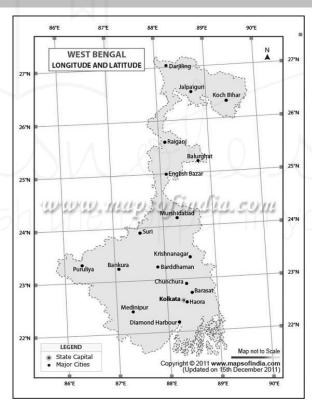
Location and Boundary of West Bengal

- West Bengal is **situated in the Eastern Region of India**, Stretching from the **Himalayas in the north** to the **Bay of Bengal in the south** with a distance of 700 Km.
- It is the only Indian State to have a Coastline as well as the Himalayas.
- Climate: humid subtropical to tropical type of climate.
- Came into existence on 15th August 1947.
- Being in the western part of the Undivided Bengal province, it has been given the name West Bengal.

Location and Size:

Country	India		
Capital	Kolkata		
Location	 Latitude: 27°13'15"N to 21°25'24"N Longitude: 85°48'20"E to 89°53'04"E 		
Area	88,752 sq. Km, 2.67% of total India's area		
Rank	14th area wise		

Tropic of Cancer passes through Purulia, Bankura,
 Bardhaman, and Nadia districts of West Bengal.



Boundary and Extent

- International
 - o East: Bangladesh (Longest boundary 2272 Km)
 - o North: Bhutan
 - North-West: Nepal (Smallest)
- National
 - North: Sikkim (Smallest)
 - o East: Assam

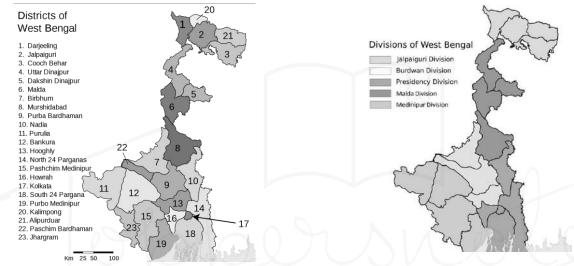




West: Jharkhand (Longest)

North-West: BiharSouth-West: Odisha

- Chicken's Neck / Silliguri Corridor / Mahananda Corridor: A narrow strip of land in West Bengal joins the landmarks of India to its north eastern state.
 - o It is 9 kilometers wide zone and lies in **Chopra of north Dinajpur**
 - O Land on the north of this corridor is mountainous and land on the south of this corridor is plain.
- West Bengal has the Raj Mahal Hills on North Western side and the Shillong plateau on its North Eastern borders.
- There are 23 districts and 5 divisions in West Bengal:

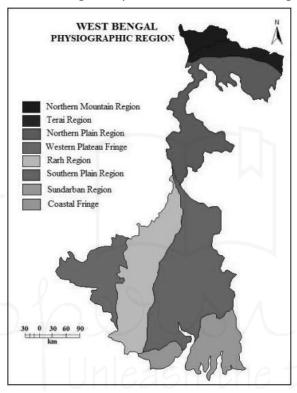


Presidency Division	Medinipur Division	Burdwan Division	Malda Division	Jalpaiguri Division
 Howrah District Kolkata District Nadia District North 24 Parganas District South 24 Parganas District 	 Bankura District Jhargram District Paschim Medinipur District Purba Medinipurur District Purulia District 	 Birbhum Paschim Bardhaman District Purba Bardhaman District Hooghly District 	 Dakshin Dinajpur District Malda District Murshidabad District Uttar Dinajpur District 	 Alipurduar District Cooch Behar District Darjeeling District Jalpaiguri District Kalimpong District

2 CHAPTER

Physiographic Division of West Bengal

On the basis of these features, West Bengal may be divided into following physical regions:



The Northern Mountains

- It is situated in the **Northern Western part of West Bengal** and belongs to the **Eastern Himalayas** range with deep Gorges and steep slops
- Covers: Darjeeling district and some parts of Jalpaiguri District.
- Teesta, Jaldhaka, & Raidak rivers flow in this region.
- Rivers Teesta Divides the northern mountains into two parts and forms deep gorges:

(A) Western Mountain Region:

- The two main mountain regions are the Singalia range and Darjeeling range.
- Singalia range:
 - o Located along the border of Darjeeling & Nepal.
 - Important peaks:
 - Sandukphu (3630 m Highest peak of the state),
 - Phalut (3595m),
 - Sabargram (3036m),
 - Tonglu (3121m).



Darjeeling range:

- Extends from the **Terai region** in the south **to steep mountains in the north**.
- It is also called the "Ghum" range.
- The world heritage toy train of Darjeeling runs from Siliguri to Darjeeling through Ghum (2247m). The highest railway station of the world.
- O Highest Peak: Tiger Hills (2567m) from where mount Kanchenjunga (8586m) can be seen.
- O Hill-town of **Kurseong** also lies in this range.

(B) Eastern Mountains Region

- Highest Peak: Richila (3121m)
- The Sinchula Range of these regions forms the boundary between the Bhutan and Jalpaiguri.
- The main mountain pass of this region is Buxa pass which joins India and Bhutan
- Important peaks: Renigango and ChotaSinchula.
- City of **Kalimpong** lies here.

The Western Plateau Fringe

- Covers: entire Puruliya district parts of Murshidabad, Bardhaman, Bankura, Birbhum and Midnapur districts.
- Average height: 300 meters. The land between the Kasai and Subarnarekha in Puruliya district is the most elevated part of the plateau.
- This region is the part of the Chhota Nagpur Plateau.
- This Plateau consists of small Hills which are called **Dungi or Tila**.
- Important Hills:
 - O Ajodhya (Gorgaburu, highest peak of Ajodhya) and Baghmundi in Purulia district.
 - Panchet and Bhandari of Purulia district
 - o Belpahari of the west Midnapore
 - O Mama-Bhanje and Mathurkali of Birbhum district.
 - Susunia and Biharinath
- The general slope of the plateau is to the east.
- Important Rivers: Damodar, Ajoy, Mayurakshi, Silai, Kansai and Subarnarekha.
 - These rivers are rain-fed and they flow toward the east.
- A hot water spring at Bakreswar also lies in the district of Birbhum.

Terai-Duar Region

- This region extends to the Siliguri division of the Darjeeling district, North and Eastern part of Jalpaiguri District and upper region of cooch Behar district.
- It is made up of sand gravels and pebbles brought down by the Himalayas Rivers like the Teesta, Torsa, Raidak, Jhaldaka and several other small rivulets.
- Average Height: 80-100 km
- The Teesta River has divides this area into two parts
 - Western part is known as Terai



- o Eastern part is known as Duars.
 - The Duars region is **further subdivided into** Siliguri for western duars middle of Jalpaiguri Duars and Eastern or Alipur Duars.

Northern Plain

- This region extends from the Southern end of the Terai to the northern bank of Ganges
- This region is divided into three categories:
 - Diara The area of new aluvium brought by the Kalindi River
 - Covers: the western part of the Malda district
 - Barind / Barendrabhumi A substantial Part in the south of West Dinajpur and the northeast of
 Malda
 - Made up with old aluvium
 - Tal lakes created by floodwater
 - The areas between the Mahananda and Kalindi rivers are prone the flood due to which Tals are created in these areas.

Southern Plain Region

 The Bhagirathi-Hugli which flows through the middle of this plain, divides the southern plain into two sub-regions, viz.

(A) Rarh Plain:

- Lies on the western bank of the Bhagirathi-Hugli and extends up to the western plateau margin.
- Popularly known as 'Rangamati'.
- It is almost flat and level with a gentle slope towards the south-east.
- Rivers: Ajoy, Damodar, Mayurakshi, Rupnarayan, Kansai, Khowai and Dwarkeshwar
- The land is formed by old alluvium.

(B) Bagri plain:

- Lies on the eastern bank of the Bhagirathi-Hugli and extends up to the Bangladesh border.
- Commonly known as the Ganga Delta
- Formed by new alluvium.
- The land is characterized by **lowlands**, marshes and oxbow lakes.
- The Ganga Delta may be divided into three sub-regions according to land-building processes :
 - Moribund Delta:
 - Located in the eastern bank of the Bhagirathi-Hugli river.
 - Covers the eastern part of Murshidabad, the entire parts of Nadia, and northern parts of 24 Paraganas.
 - Example of a perfect plain.
 - Mature Delta:
 - Located between the Sundarban in the south and the Moribund delta on the north.
 - Includes the middle portion of the North and South 24 Paraganas.



- In this region, the **process of formation of delta** has attained a **stage of maturity**; the land formation **approaches a plain**.
- O Active Delta:
 - Lies in the southern most part of 24 Paraganas (north and south)
 - The process of delta formation is active in the region on the mouth of rivers.

Sundarban Delta

- Location: Southern parts of the north and south 24 Paraganas
- Characterized by: Innumerable islands, tidal creeks and muddy lowlands, occupied by tidal forests named Sundarban.
- Largest mangrove forest in the world; listed in the UNESCO world heritage list separately as the Sundarbans and Sundarbans National Park respectively.
- 'Sundari' trees are found in abundance in this region and hence known as 'Sundarban'.
- It **consists of t**he Hoogly river estuary and newly created Ganga delta.
- **Formed by** the deposition of silt by its numerous **rivers** namely, Hoogly, Matla, Jamira, Gosaba, Saptamukhi, Haribhanga river, and their tributaries.

Coastal Fringe

- The coastal plain region is on the extreme south of the state.
- Part of the district of Purba Medinipur along the Bay of Bengal constitutes the coastal fringe.
- The **beach at Digha** in this region is a fast developing sea resort and becoming an important tourist spot.
- This emergent coastal plain is made up of sand and mud deposited by rivers as well as wind.