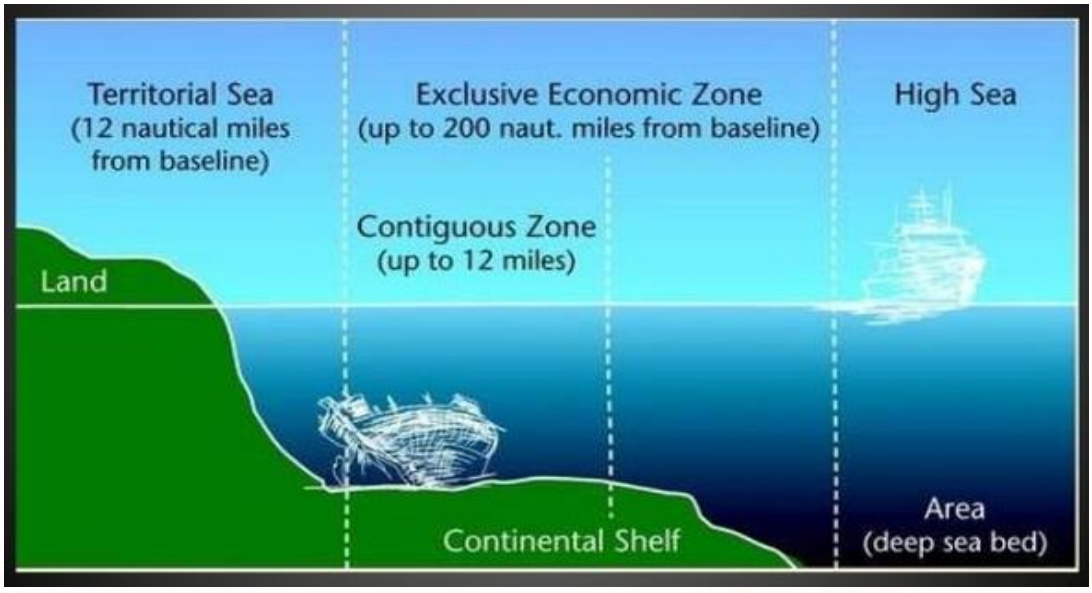
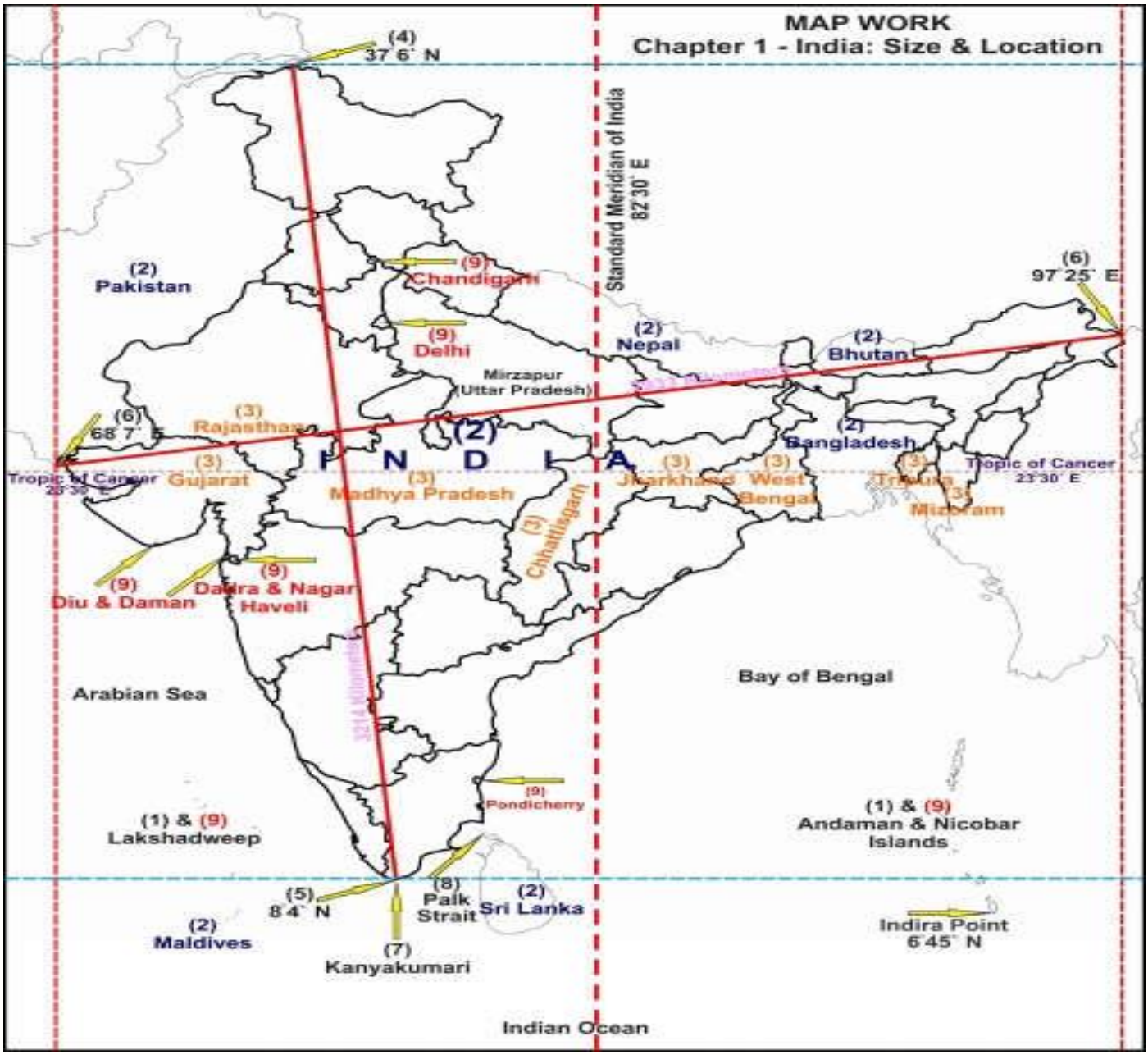
Geography of India

❖ INDIA – LOCATION & SIZE

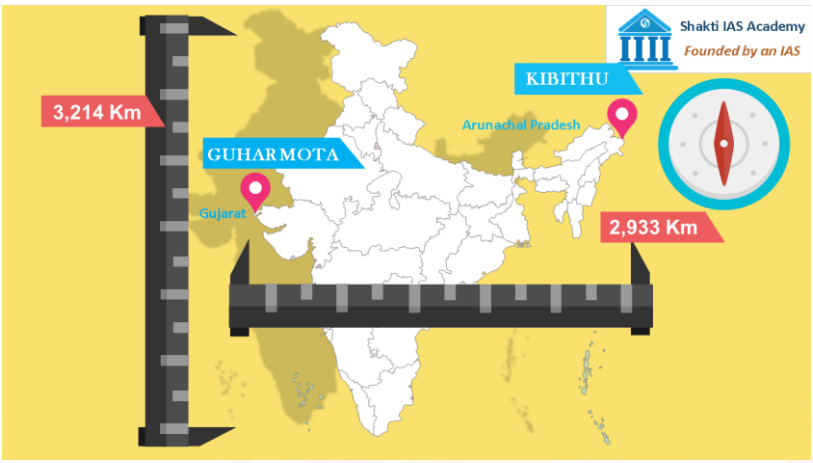
- The mainland of India, extends from Kashmir in the north to Kanniyakumari in the south and Arunachal Pradesh in the east to Gujarat in the west.
- India's territorial limit further extends towards the sea upto 12 nautical miles (about 21.9 km) from the coast.
- India's southern boundary extends upto 6°45' N latitude in the Bay of Bengal.
- The latitudinal and longitudinal extent of India are roughly about 30 degrees.





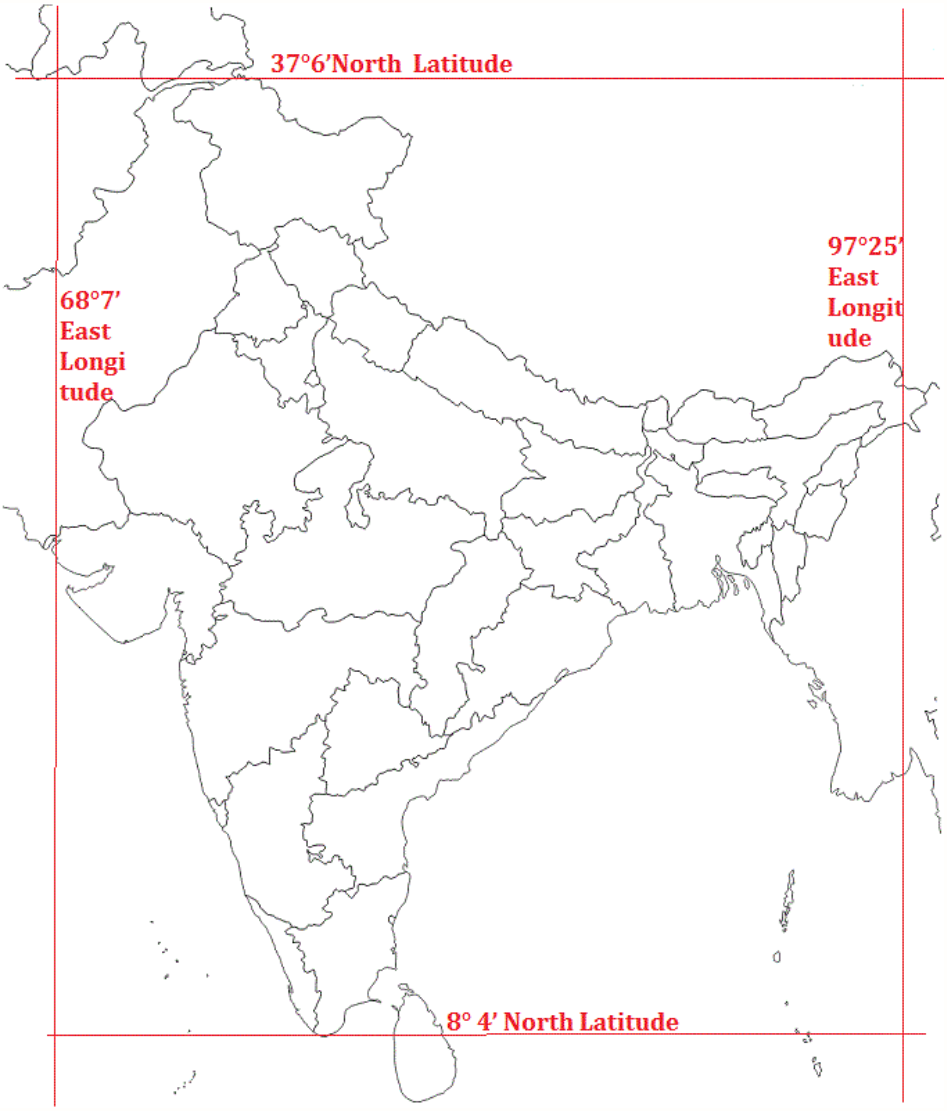
INDIA – LOCATION

- The actual distance measured from north to south extremity is 3,214 km, and that from east to west is only 2,933 km.
- The southern part of the country lies within the tropics and the northern part lies in the sub-tropical zone or the warm temperate zone.
- This location is responsible for large variations in land forms, climate, soil types and natural vegetation in the country.

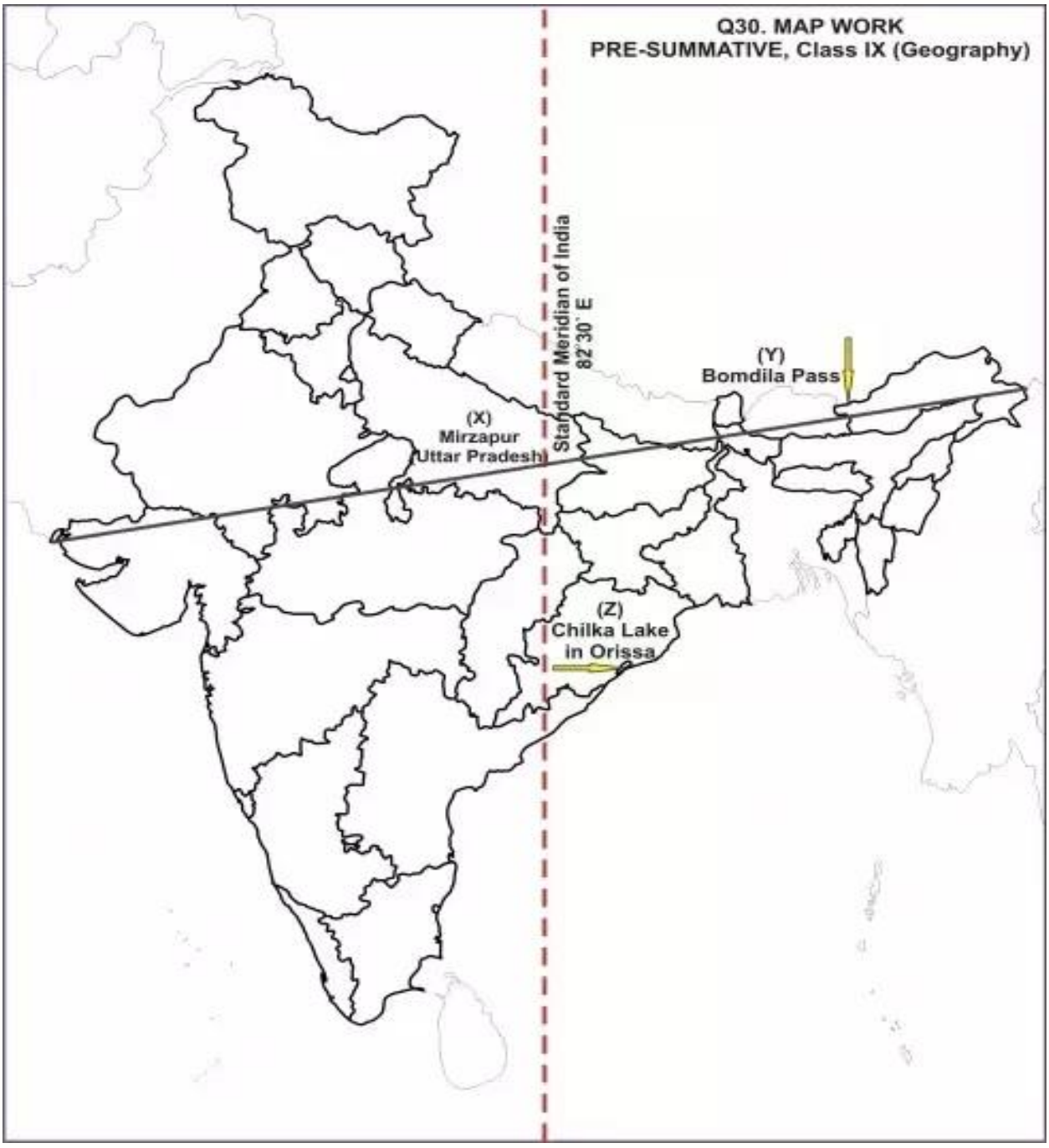


INDIA – LOCATION

- India extends from 8° 4' north to 37° 6' north latitude and 68° 7' east to 97° 25' east longitude. Its latitudinal and longitudinal extent is about thirty degrees.
- Away from the main land of India, the southern most point of the country in the Andaman and Nicobar Islands, the Pygmalion Point or Indira Point is located at 6° 45' north latitude.
- Its north-south extent from Indira Col in Kashmir to Kanniyakumari is 3,214 km



- Its east-west width from the Rann of Kachachh to Arunachal Pradesh is 2,933 km .
- The longitudinal difference between Saurashtra in the west and Arunachal Pradesh in the east is about 30
- The earth moves around its axis through 360 in 24 hours. Thus, a difference of 1 degree longitude will make a difference of 4 minutes in time. Therefore the difference of local time between Saurashtra and Arunachal Pradesh is 30 x 4= 120 minutes or 2 hours.
- Since Arunachal Pradesh is towards the east, it will have sunrise about two hours before the sunrise at Saurashtra.
- Thus, the sun is quite high in the sky at Arunachal Pradesh while Saurashtra still waits for the first ray of the sun.



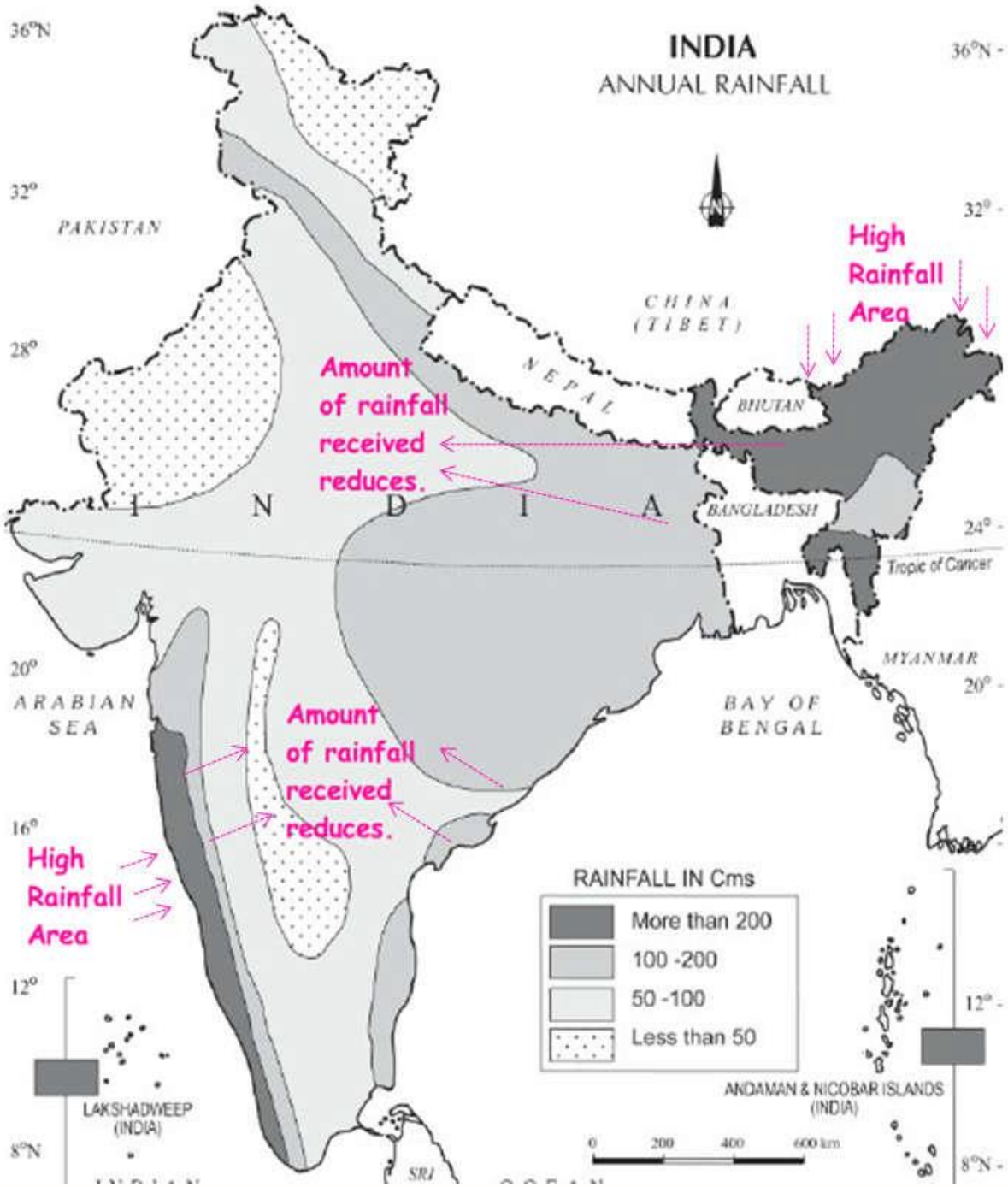
INDIA – LOCATION

- This difference in time might create confusion in air and rail timings and so many other things across the two states.
- To avoid this confusion, 82°30′ East longitude is taken as the Standard Time Meridian of India and its local time is taken a standard throughout the country.

INDIA

- With an area of 32,87,263 sq km India is the seventh largest country of the world.
- After Russia, Canada, U.S.A., China, Brazil, and Australia.
- India accounts for about 24 per cent of the total surface area of the world.
- India is nearly twenty times as large as Great Britain, the country which ruled us for about two centuries.
- The Tropic of Cancer passes through the middle of the country dividing it into two latitudinal halves being about 15 degree from either end.


60°E
64°
68°
72°
76°
80°
84°
88°
92°
96°
100°E
INDIAN STATES WHERE TROPIC OF CANCER PASSES
INDIA
ADJACENT COUNTRIES
36°N
32°
28
24°
20°
16°
12°
8°
AFGHANISTAN
PAKISTAN
CHINA (TIBET)
NEPAL
BHUTAN
BANGLADESH
MYANMAR
JAMMU AND KASHMIR
HIMACHAL PRADESH
PUNJAB
UTTARAKHAND
HARYANA
DELHI
RAJASTHAN
UTTAR PRADESH
BIHAR
SIKKIM
ARUNACHAL PRADESH
ASSAM
NAGALAND
MEGHALAYA
MANIPUR
JHARKHAND
WEST BENGAL
GUJARAT
MAHARASHTRA
CHHATTISGARH
ODISHA
ANDHRA PRADESH
KARNATAKA
GOA
KERALA
TAMIL NADU
PUDUCHERRY
Yanam (PUDUCHERRY)
Karaikal (PUDUCHERRY)
Mahe (PUDUCHERRY)
New Moore Is. (India)
Tropic of Cancer
ARABIAN SEA
BAY OF BENGAL
LAKSHADWEEP (INDIA)
ANDAMAN & NICOBAR ISLANDS (INDIA)
International Boundary
State Boundary
1. Gujarat
2. Rajasthan
3. Madhya Pradesh
4. Chhattisgarh
5. Jharkhand
6. West Bengal
7. Tripura
8. Mizoram

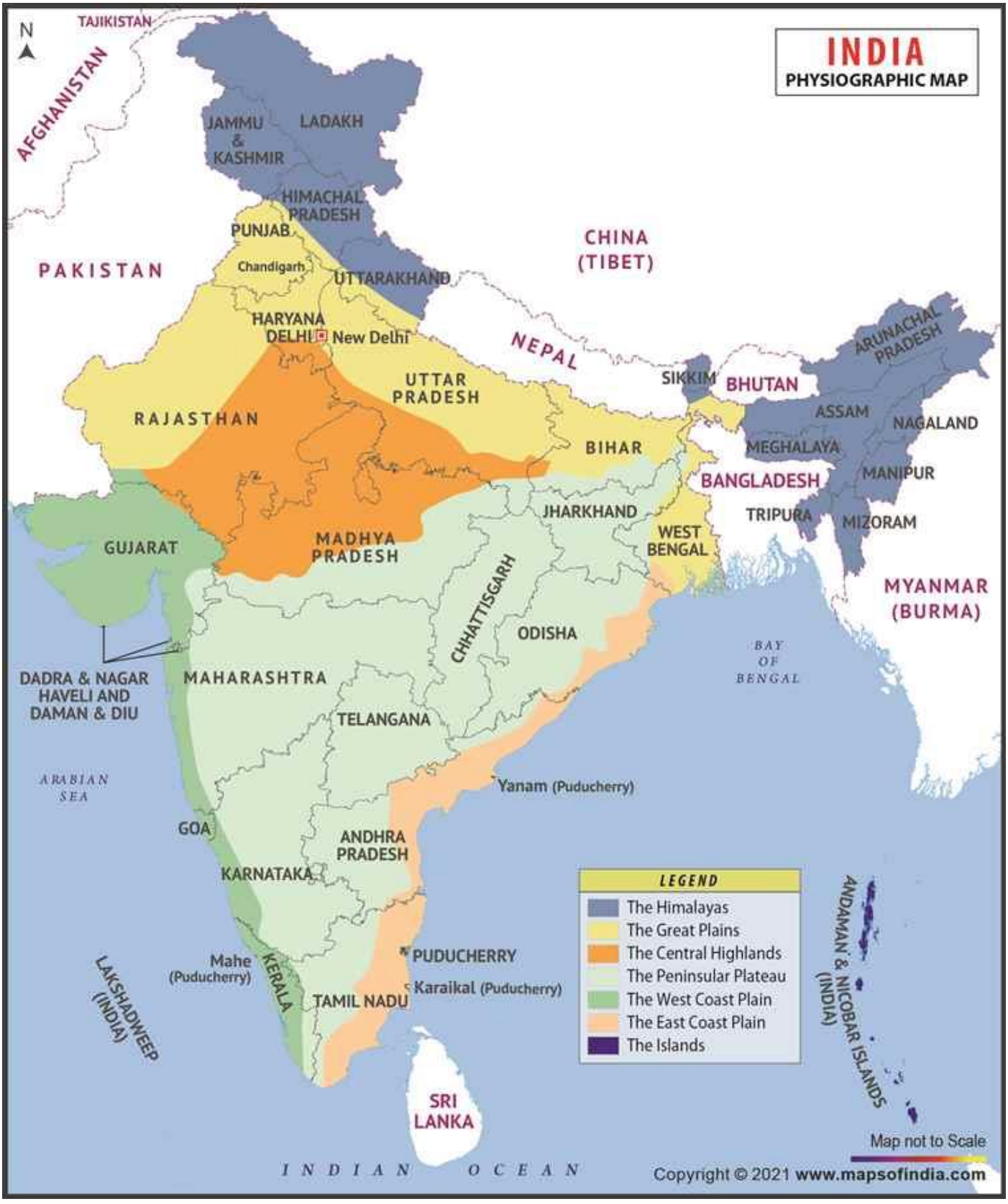


- Areas closer to the coast would experience greater rainfall.
- we move towards the interior areas, the moisture content of clouds decreses and hence the rainfall experienced would decrease.

Neighbouring Countries of India

- The neighbouring countries of India are Afghanistan, **China, Nepal, Bhutan, Pakistan, Myanmar, Maldives, Sri Lanka and Bangladesh** .
- Ladakh is the only union territory that has three international borders with Afghanistan, China, and Pakistan.
- Sri Lanka and the Maldives are the two neighboring countries that share a coastline with India.

Physiography of India

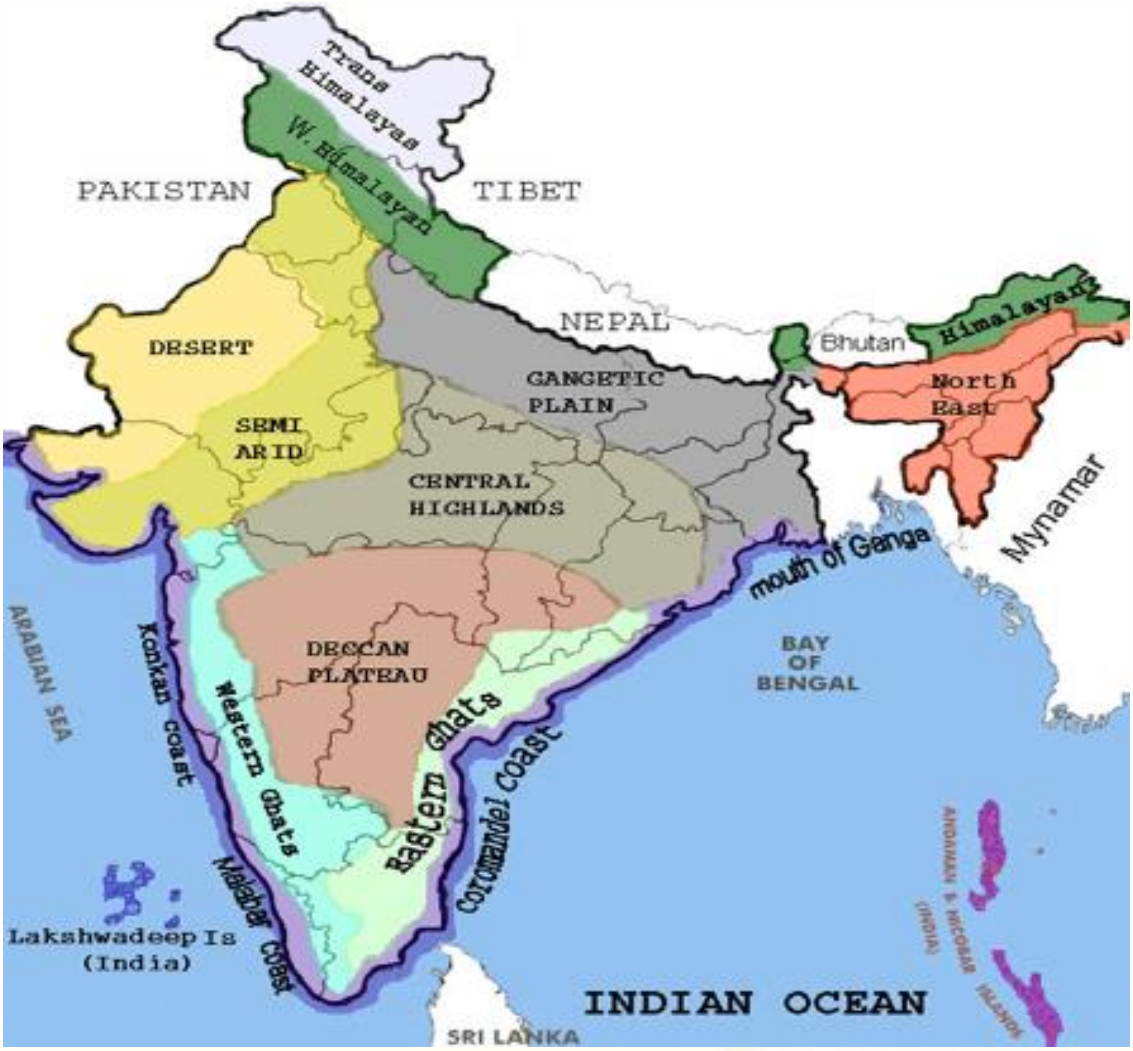


INTRODUCTION

- Physiography is that branch of geography which studies the present relief features of the earth's surface .
- The present surface features of India owe their formation to various geological events which took place in different geological periods.
- Endogenetic and exogenetic forces have been consistently working to shape the present land forms on the surface of the earth.
- The physiographic diversity of India embraces lofty young fold mountains, flat plains and one of the oldest plateaus of the world.

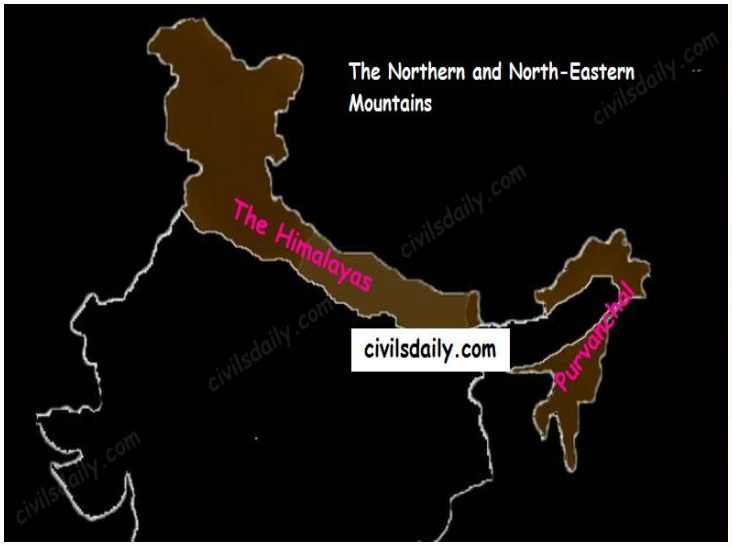
Physiographic divisions

- Physiography deals with the study of surface features .
- This includes the landforms (mountains and valleys, their shape and steepness), the way rivers flow across the land, and the way in which the land erodes.
- Geographers recognize physiographic divisions based on the shape of the land.
- The Indian landmass can be divided into the following broad physiographic units:
  1. The Northern and Northeastern Mountains
  2. The Northern plains
  3. The Thar Desert
  4. The Peninsular Plateau
  5. The Coastal Plains
  6. The Islands



The Northern and Northeastern Mountains

- The first physiographic division.
- It consists of:
  - The Himalayas
  - The Northeastern hills (Purvanchal).



The Himalayan Mountains

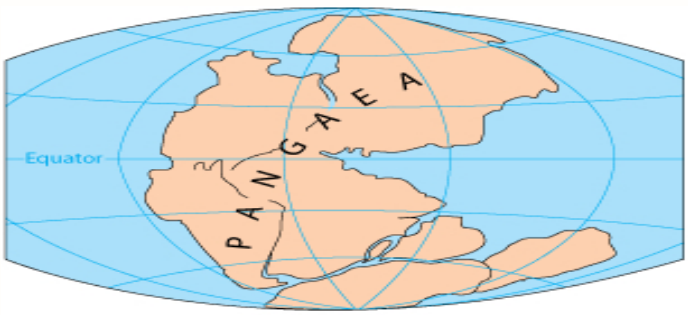
- The Himalayan mountains are also known as the Himadri, Himavan or Himachal.
- Himalayas consist of the youngest and the loftiest mountain chains in the world.
- The width of the Himalayas varies from 500 km in Kashmir to 200 km in Arunachal Pradesh.
- The total area of the Himalayan mountain region is nearly five lakh sq km.
- The Pamir, popularly known as the roof of the world is the connecting link between the Himalayas and the high ranges of Central Asia.

➢ Origin and development:

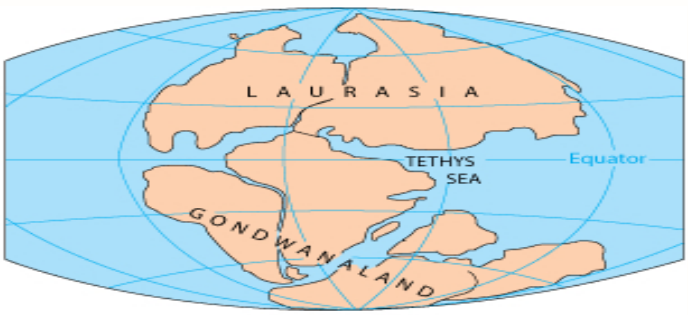
- According to the theory of Continental Drift, the world was made up of a single continent through most of the geologic time.
- That continent eventually separated and drifted the seven continents we have today.
- About 200 million years ago: Pangaea broke apart leading to the "Laurasia in North" and "Gondwanaland in South".
- Both the landmasses were separated by a shallow sea called "Tethys Sea".
- The size of Tethys Sea kept on decreasing due to movement of landmasses towards each other.

➢ About 40 to 50 million years ago:

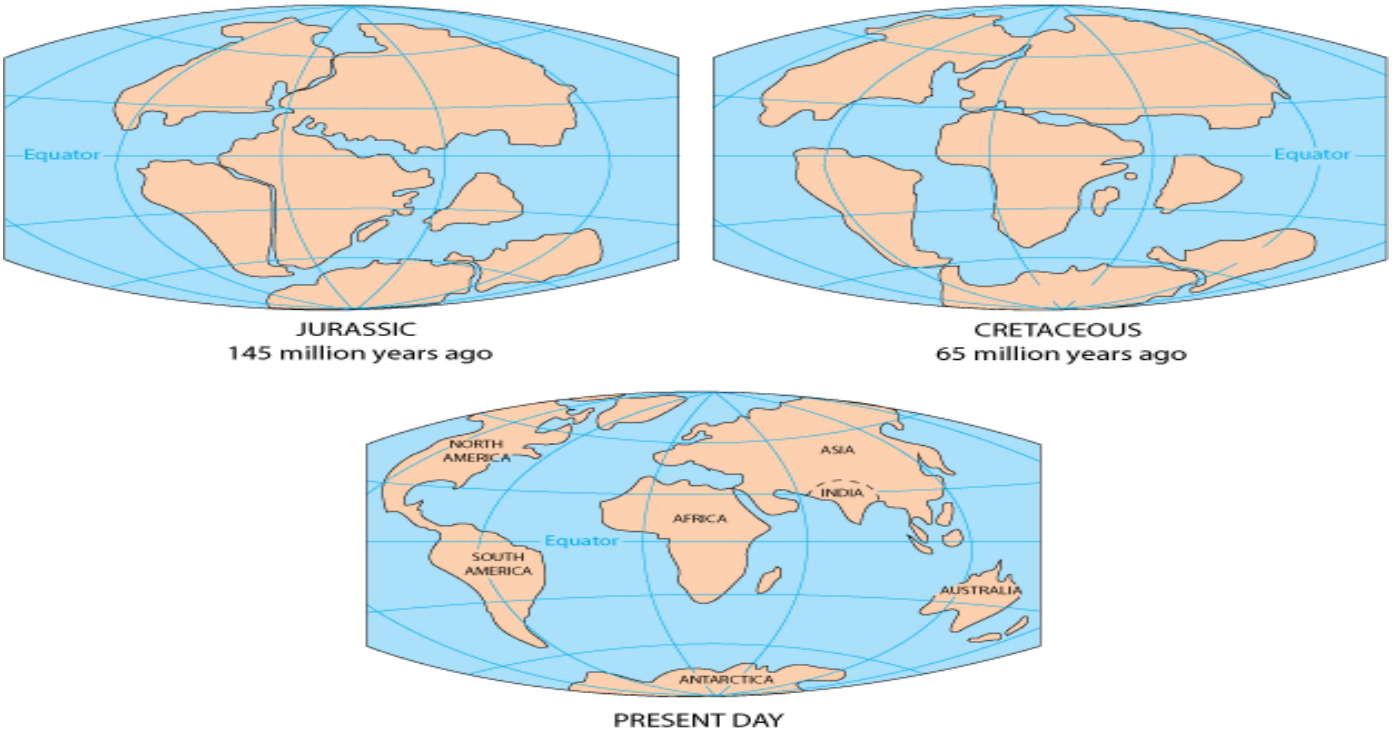
- The two large landmasses, India and Eurasia, driven by plate movement, collided.
- As a result the sediments accumulated in Tethys Sea (brought by rivers) were compressed, squeezed and series of folds were formed, one behind the other.
- Giving birth to folded mountains of the Himalaya.



PERMIAN
250 million years ago



TRIASSIC
200 million years ago


Equator
JURASSIC
145 million years ago
Equator
CRETACEOUS
65 million years ago
NORTH AMERICA
ASIA
INDIA
AFRICA
Equator
SOUTH AMERICA
AUSTRALIA
ANTARCTICA
PRESENT DAY


EURASIAN PLATE
INDIA
Today
10 million
years ago
SRI LANKA
38 million
years ago
Equator
55 million
years ago
INDIAN
OCEAN
71 million
years ago
"INDIA"
Land mass
SRI LANKA

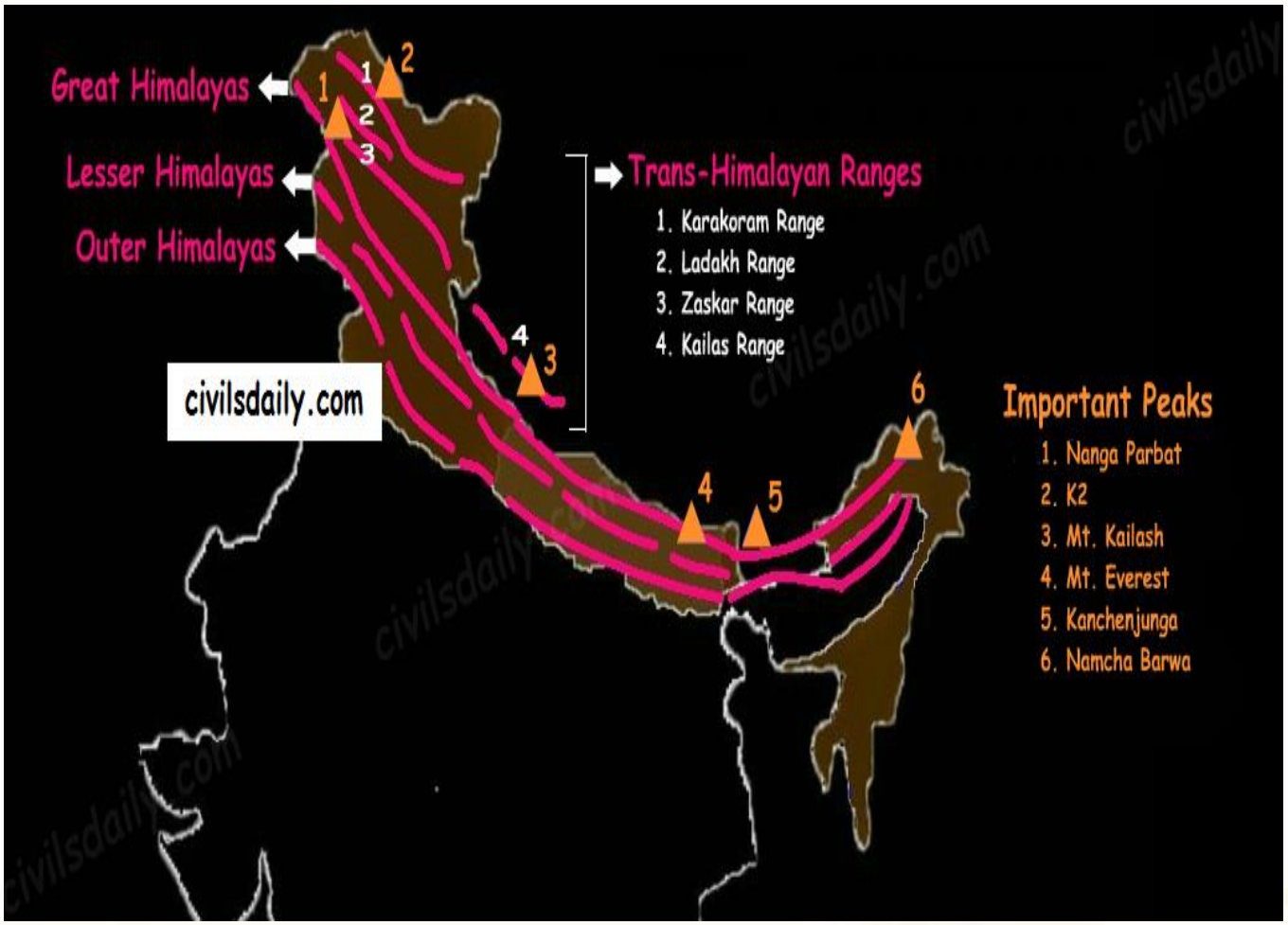
Evidence to prove that the Himalayas are still rising

1. **Fossil formation found in Shivalik hills:**
   - Similar fossils have also been found in the Tibet Plateau.
   - This indicates that in the past, Tibetan plateau and Shivalik hills shared a common location, similar level and thus similar vegetation, life etc.; then Tibetan plateau got uplifted.

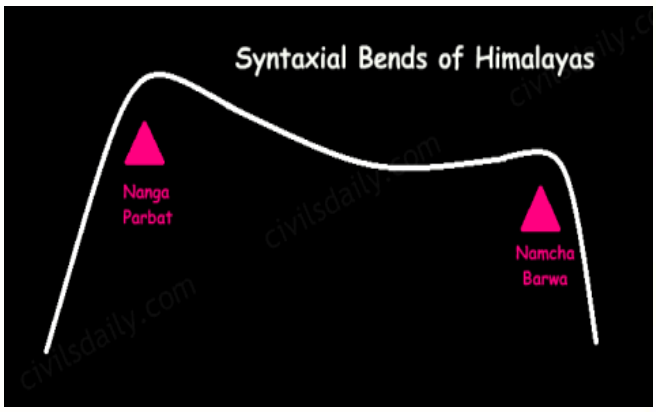
2. **Desiccation of lakes of Tibet:**
   - In the Tibet plateau, we find deposits which are generally found in lakes.
   - This indicates that lakes once existed in Tibet but because of upliftment the water got discharged and deposits remained.
3. **Frequent Earthquakes**
4. **Youthful nature of rivers (High erosion, v-shaped valleys etc.)**

The North-South Division of the Himalayas

- The Himalayas consist of a series of parallel mountain ranges:
  1. The Greater Himalayan range, which includes:
     - The Great Himalayas(Himadri),
     - The Trans-Himalayan range
  2. The Lesser Himalayas (or Himachal), and
  3. The Outer Himalayas (or Shiwalik).



Characteristic Features of the Himalayas



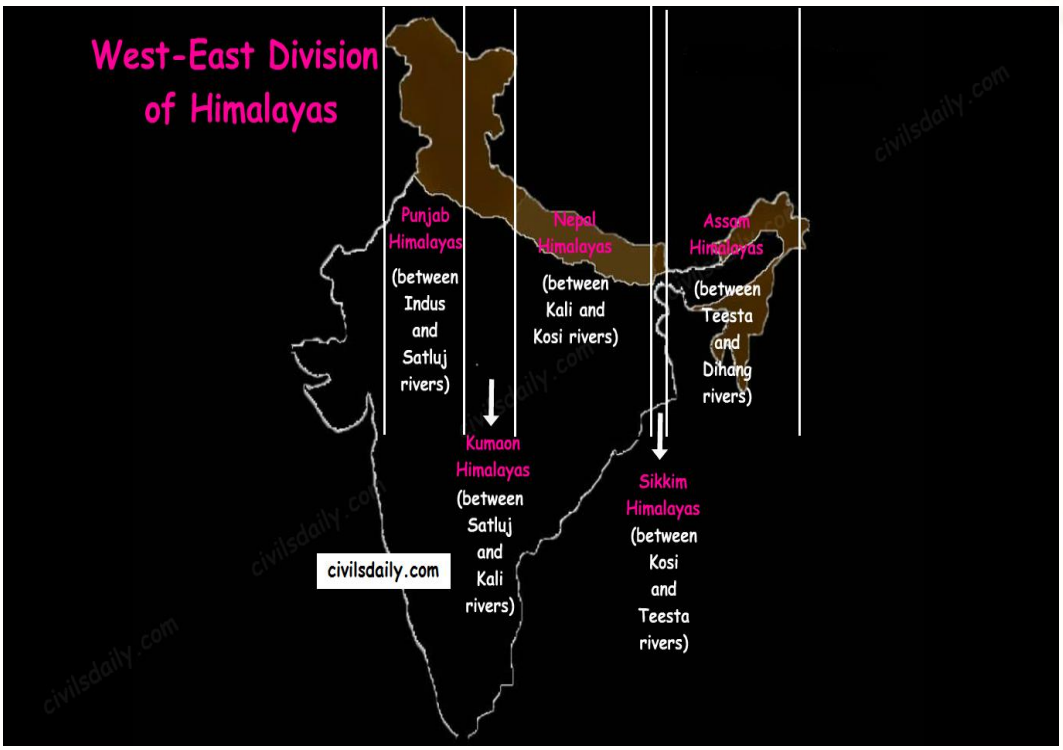
- **The Syntaxial Bends of the Himalayas :**
  The general east-west trend of the Himalayas terminates suddenly at its western and easter extremities and the ranges are sharply bent southward in deep knee-bend flextures which are called syntaxial bends.

- **The Himalayas are wider in the west than in the east:**
  - The width varies from 400 km in Ladakh to 150 km in Arunachal Pradesh.
  - The main reason behind this difference is that the compressive force was more in the east than in the west.
  - That is why high mountain peaks like Mount Everest and Kanchenjunga are present in the Eastern Himalayas.
- **The ranges are separated by deep valleys creating a highly dissected topography.**
- **The southern slopes of the Himalayas facing India are steeper and those facing the Tibetan side are generally gentler.**

Longitudinal divisions of Himalayas from west to east:

- Besides the longitudinal divisions, the Himalayas have been divided on the basis of regions from west to east.
- These divisions have been demarcated by river valleys.
  - Punjab Himalayas
  - A large portion of Punjab Himalayas is in Jammu and Kashmir and Himachal Pradesh.
  - They are also called the Kashmir and Himachal Himalaya.
  - Major ranges: Karakoram, Ladakh, Pir Panjal, Zaskar and Dhaola Dhar.
  - The general elevation falls westwards.
- The Kashmir Himalayas are also famous for Karewa formations.
- 'Karewas' in Kashmiri language refer to the lake deposits, found in the flat- topped terraces of the Kashmir valley and on the flanks of the Pir Panjal range.
- Karewas are the thick deposits of glacial clay and other materials embedded with moraines.

- Kumaon Himalayas
- Nepal Himalayas
  Tallest section of Himalayas
- Sikkim Himalayas
- Assam Himalayas



The importance of Himalayan Region:

- **Climatic Influence**
  - The altitude of the Himalayas, their sprawl and extension intercept the summer monsoon.
  - They also prevent the cold Siberian air masses from entering into India.

- Defence
- Source of perennial rivers
- Source of fertile soils
- Generation of hydroelectricity
- Forest wealth
- Orchards
- Minerals
  - The Himalayan region is rich in minerals e.g. gold, silver, copper, lead etc. are known to occur.
  - Coal is found in Kashmir. But at present level of technological advancement, it is not possible to extract these minerals.
  - Also, it is not economically viable.
- Tourism
- Pilgrimage