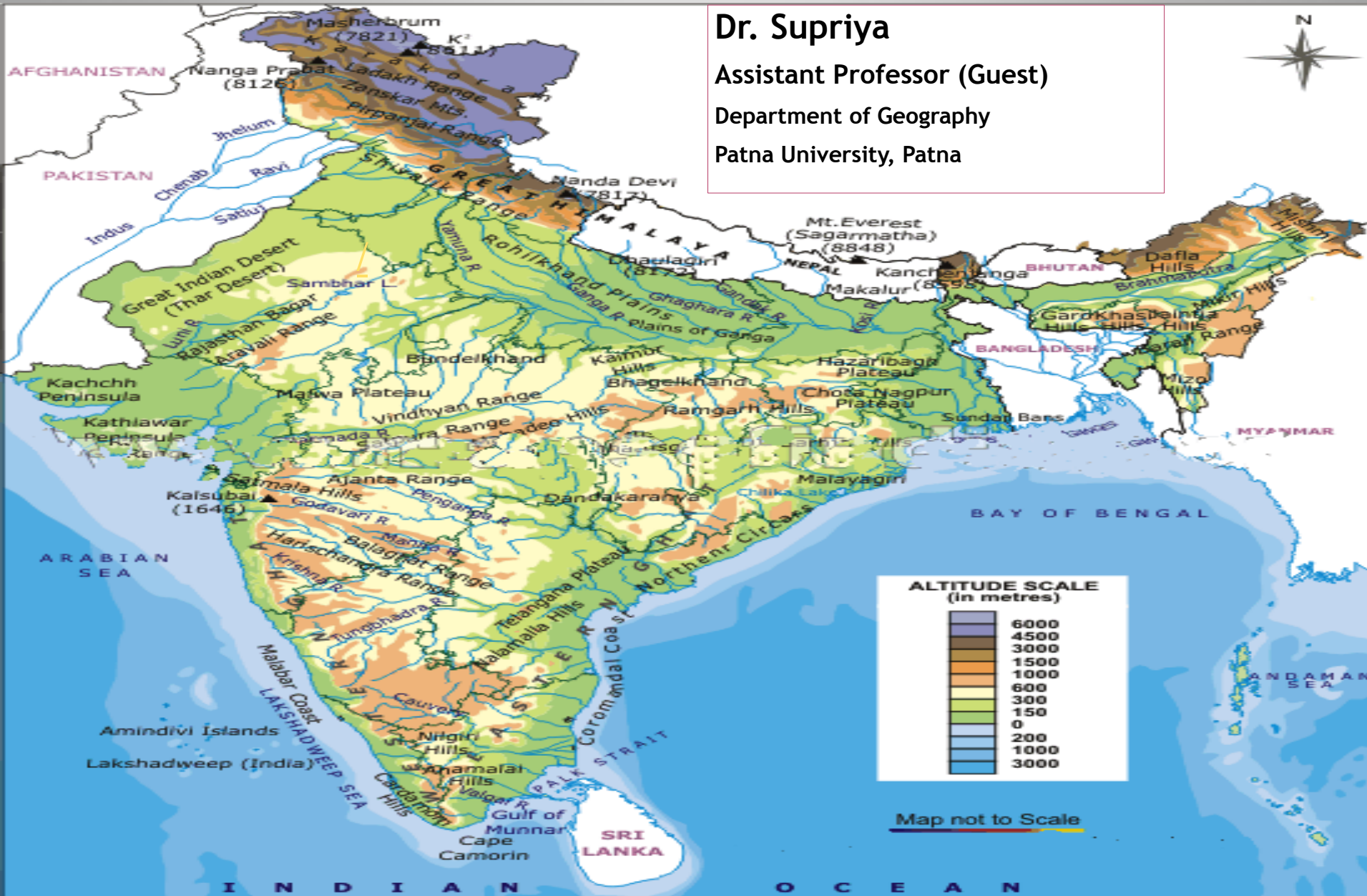




# INDIA: PHYSIOGRAPHY & RELIEF

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Map not to Scale

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# INTRODUCTION

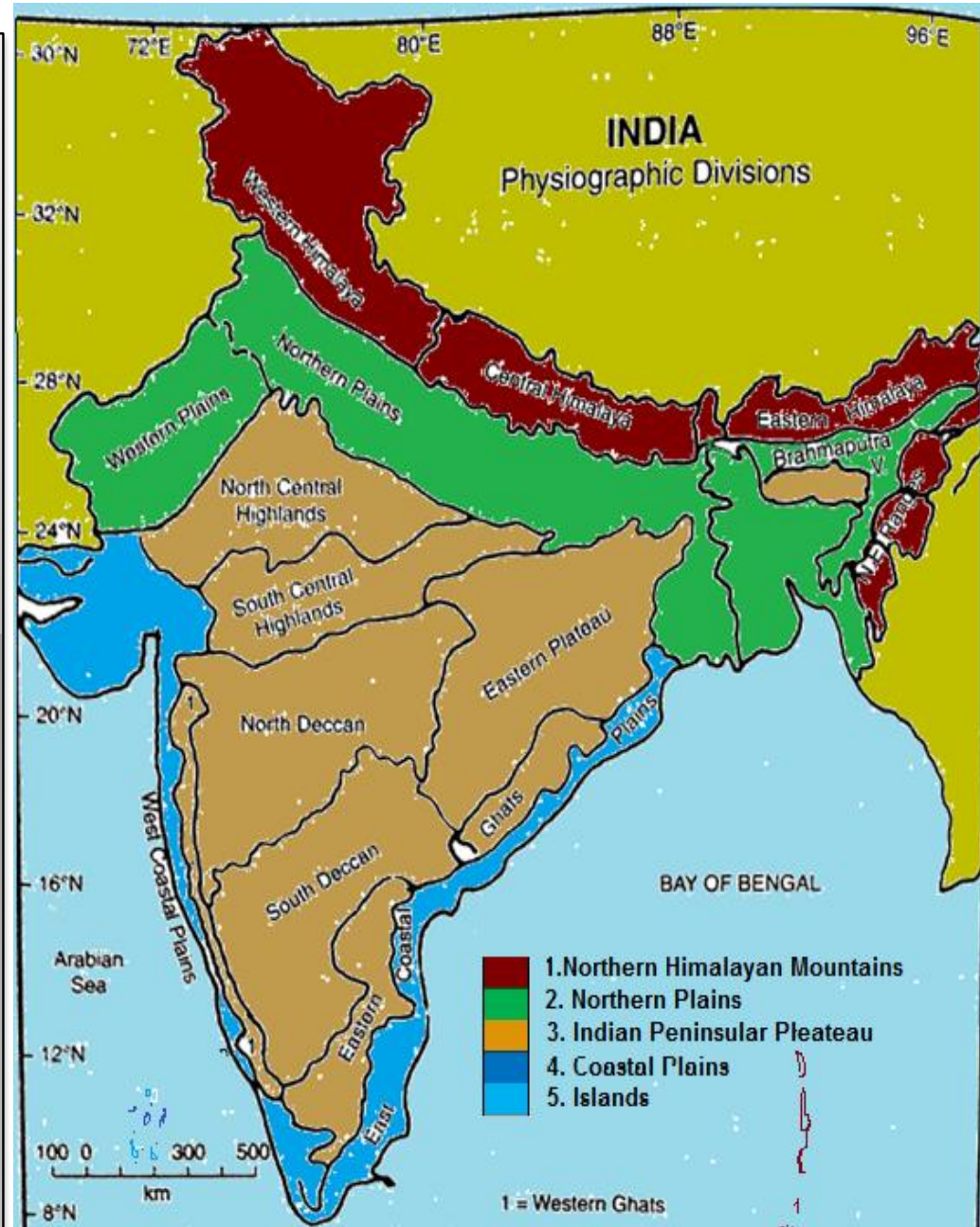
- **A Physiographic regions or Relief regions** are geographic areas that share distinct properties like landforms, rock type, and their evolutionary history. Physiographic used in border context of division with detailed description of the relief features in terms of major, meso and micro divisions.
- India has vast differences across the landscape. There are mountains, rivers, plains, rolling hills, and low-lying coastal lands. When scientists try to categorize regions based on their physical characteristics, we get the development of physiographic regions.
- The physiographic and relief features of India is found diverse because of its long geological history reflects in its geological structure and the rocks system of India.
- Indian rock belongs to different geologic periods, dating as far back as the **Eoarchean Era**. Its geographical land area can be classified into **Archaean System; Dharwar System, Cuddapah System; Vindhyan System; Gondwana System, Deccan Trap; Tertiary System; Quaternary System** (*See Geological structure e-content*).
- The land of India displays great physical variation. Geologically, the Peninsular Plateau constitutes one of the ancient landmasses on the earth's surface. It was supposed to be one of the most stable land blocks.
- The Himalayas and the Northern Plains are the most recent landforms. From the view point of geology, Himalayan mountains form an unstable zone. The whole mountain system of Himalaya represents a very youthful topography with high peaks, deep valleys and fast flowing rivers. The northern plains are formed of alluvial deposits. The peninsular plateau is composed of igneous and metamorphic rocks with gently rising hills and wide valleys.

# MAJOR PHYSIOGRAPHIC OR RELIEF REGION

On the basis of tectonic history, stratigraphy, physiography and relief features, India is divided into five major physiographic or relief regions:

1. The Northern Himalayan-Mountainous Region
2. The Indo-Gangetic-Brahmaputra Plain Region
3. The Indian Peninsular Region
4. The Coastal Plain Region
5. The Island Region

Relief Features	Height from mean sea level (MSL) in Meters	Extent in %
Mountains	Higher than 2135 m MSL	10.7
Hilly	305 - 2135 m MSL	18.6
Plateau	305 - 915 m MSL	27.7
Plains		43



# MAJOR PHYSIOGRAPHIC OR RELIEF REGION

## 1. The Northern Himalayan-Mountainous Region:

- It includes Himalayas, Trans Himalayan, Purvanchal and their extensions Arakan Yoma (Myanmar) and Andaman and Nicobar Islands (It will considered separately as Islands).
- It is the youngest and highly unstable (Continent-Continent Convergence) landmass of India which led to the region prone to tectonic movements or unstable.

## 2. The Indo-Gangetic-Brahmaputra Plain Region or The Great Northern Plain Region:

- It lies between the Peninsular and Himalayan region which is most youthful, monotonous, highly fertile alluvial region prone to tectonic forces.

## 3. The Indian Peninsular Region:

- It includes the entire hills, plateaus and river valleys of south India, central India, Aravalis, Rajmahal hills, Meghalaya plateau, Kutchh-Kathiawar region. It is the oldest and the most rigid (stable) landmass of India.

## 4. The Coastal Plain Region:

- It is highly stable just like peninsular plateau, which divided it in two part - Eastern Coastal Plains and Western Coastal Plains.
- Its formed by deposition of sediments brought by rivers (fluvial deposits) from peninsular Plateau.

## 5. The Island Region:

- Indian Island is found in two major groups - Andaman and Nicobar & Lakshadweep islands.
- Lakshadweep islands are group of atolls occupied by coral reefs. Highly vulnerable to sea-level rise.
- Andaman and Nicobar islands - Continuation of Arakan Yoma which is tectonically active and has active volcanoes.

# 1. THE NORTHERN HIMALAN MOUNTENEIOUS REGION

It consists of the Himalaya and their off-shoots and foothills. This mountain are permanently snow-clods hence it is known as Himalayas Or Himadri.

- ◎ The Himalayas are Known as young and structurally fold mountains.
- ◎ This is the highest mountain range of the World.
- ◎ The highest peak of the world Mount Everest(8,848 meters) is situated in this area.
- ◎ It Spreads into the seven states like Jammu and kashmir, Panjab, Himachal Pradesh, Uttaranchal, West Bengal, Sikkim and Arunachal Pradesh.
- ◎ Himalayas are Classified into the Three Divisions.

## I. The Greater Himalayas Or Himadri

- ◎ It is the Northernmost and the highest range that lie to the north of the Himalayas.
- ◎ The ranges are made up of granite and gneisses.
- ◎ The Average height from MSL is about 6100 Meters.
- ◎ The highest peak of the world Mount Everest(8,848 meters) is situated in this area.
- ◎ The peak Mount Everest is also Known as Sagarmatha.
- ◎ The second highest peak in the world Mt. K2( 8611m), Peak kanchanjunga (8078m), Nandadevi(7817m) Nanga parbat (8126m) Are important peak of India

## **II. The Himachal /The Lesser Himalayas**

- It is also known as Middle Himalayas
- Average height varies from 1800m. to 3000m. from (MSL)
- Metamorphic rock structure due to Compression.
- This range is covered with dense vegetation like Pir panjal, Dhulandhar, Nag Tiba
- Such famous hill towns like Shimla, Almora, Darjeeling, Kalimpong and Gangtok.
- There are number of beautiful lakes around the Nainital.

## **III. Sub-Himalayan Foot hills or Siwalik**

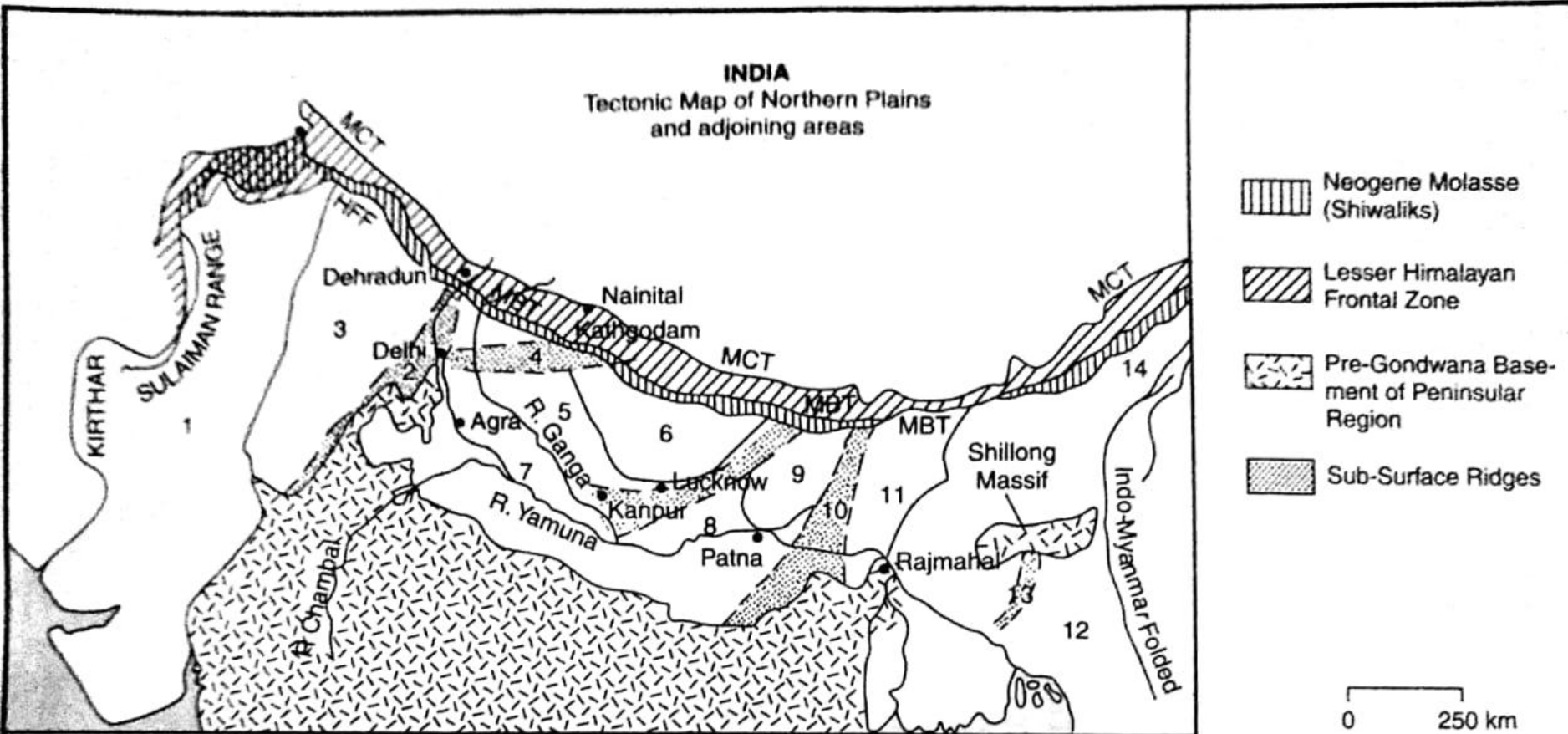
- This is the southernmost range of the Himalaya it also known as Outer Himalayas
- Average height varies from about 600 to 1500 m. from (MSL)
- There are some broad valleys with flat bottom this valleys are known as 'Dunes'
- In the sense the cities of this area are known as Deharadun and Patlidun. The Zoji La Pass in Jammu & Kashmir, Bara Lacha La in Sikkim are important Passes in Greater Himalayas
- The Great River Ganga, Yamuna, Gandak, Ghagra, Indus, Kosi river originates from these ranges.

## 2. The Indo-Gangetic-Brahmaputra Plain Region

- ❖ The Extensive plains of north India lie between the Himalayas and the Peninsular Plateau.
- ❖ This vast plain have been formed by the deposition of the sediment of river Ganga, The Brahmaputra.
- ❖ They extend from east to west direction from the Brahmaputra in the east to the arid plains of Rajasthan in the west.
- ❖ Total length is 2400 Km. and width varies from 145 to 480km.
- ❖ Seven lakh Sqkm. Areas occupied.
- ❖ General slope is from west to east.
- ❖ These fertile plain are formed by two types of Alluvium Deposits.
- ❖ The New Alluvium that is deposited is know as Khadar. (Deposited Near the river bank.
- ❖ The Old Alluvium is called as Bhangar (Deposited away from the bank of the river.
- ❖ Bhabar is made of gravel & Coarse sand.
- ❖ The marshy land is called terai or NO Man's Land Because this region has dense forest cover.
- ❖ This plain Is classified into the four Sub divisions Rajasthan Plain, Panjab-haryana Plain, The Ganga Plain, The Bramaputra Plain.



# The Indo-Gangetic-Brahmaputra Plain Region



- |                              |                             |                           |
|------------------------------|-----------------------------|---------------------------|
| 1. Indus Basin               | 6. Sarda Depression         | 11. Purnia-Kasganj Graben |
| 2. Delhi-Hardwar Ridge       | 7. Faizabad Ridge           | 12. Bengal Basin          |
| 3. Punjab Shelf              | 8. East Uttar Pradesh Shelf | 13. Madhupur Ridge        |
| 4. Delhi-Muzaffarnagar Ridge | 9. Gandak Depression        | 14. Kopili Graben         |
| 5. West Uttar Pradesh Shelf  | 10. Munger-Saharsa Ridge    |                           |

# 3. The Indian Peninsular Plateau

- ❑ The peninsular Plateau lies towards the south of the Indo- Gangetic Plain.
- ❑ The shape of the plain is triangle its broad base to the north and the narrow apex to the south
- ❑ It is cover and area about 16 lak sq.km.
- ❑ Aravalli hill mark the North-Western boundary, Northern edge of the Bundelkhand Plateau, Eastern & Western Ghats at East and West and south Part is connect with the Indian Ocean.
- ❑ Average height of the plateau is 500-900 meter
- ❑ Peninsular Plateau is Divided into the Two Types

## **1. North Indian Peninsular Plateau.**

- ❑ It is Classified into Three region
  - i. The western Highland region
  - ii. The Central Highland region
  - iii. The Eastern High land region

## **2. Southern Indian Peninsular Plateau.**

- i. The Deccan Plateau.
- ii. The Western Ghat.
- iii. The Eastern Ghat.

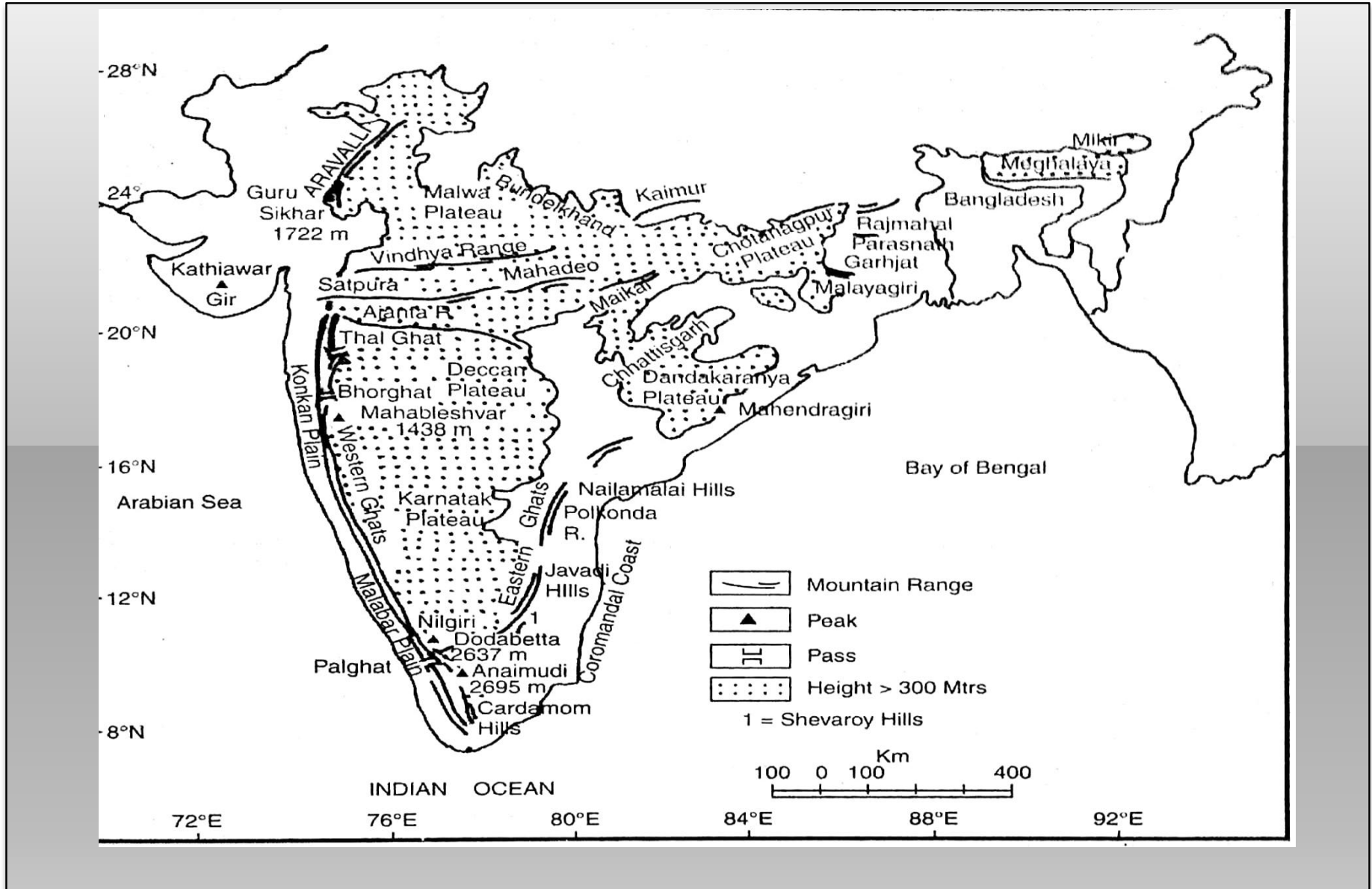
# 4. The Costal Plains

- ❑ The peninsular plateau is flanked by stretch of narrow costal strip along the Arabian Sea and Bay of Bengal on the east
- ❑ The plain along the Arabian sea is called as western costal plain.
- ❑ The plain along the Bay of Bengal Coast is called as Eastern Costal Plain.
- ❑ The eastern plain is broader than the western costal plain.

**I. Western Costal Plains:** Extend is Arabian sea from the Rann of Katchch in the north to Kanyakumari in the South.

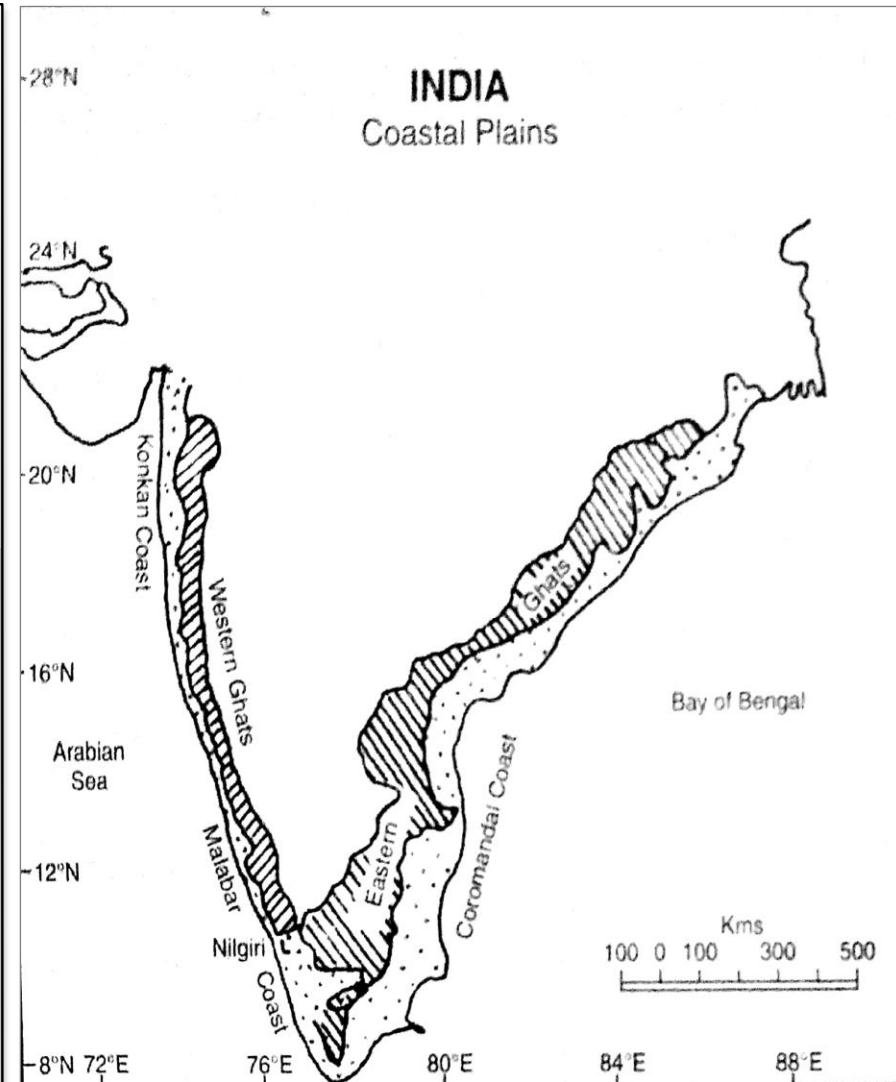
- Northern of the western Costal plain is Broader then Southwards
- North-South Extend of this plain is about 1500 km
- Average width is 65km.
- The Western coastal plain is classified into Four Parts
  - i. The great Runn of Kutchch.
  - ii. Konkan.
  - iii. Karnataka costal plain.
  - iv. Kerla costal plain.

# Major Relief features of Peninsular India



II. The Eastern Coastal Plain: The Eastern coastal plain of India extends along the Bay of Bengal from the Ganga delta in the north to Kanyakumari in the south.

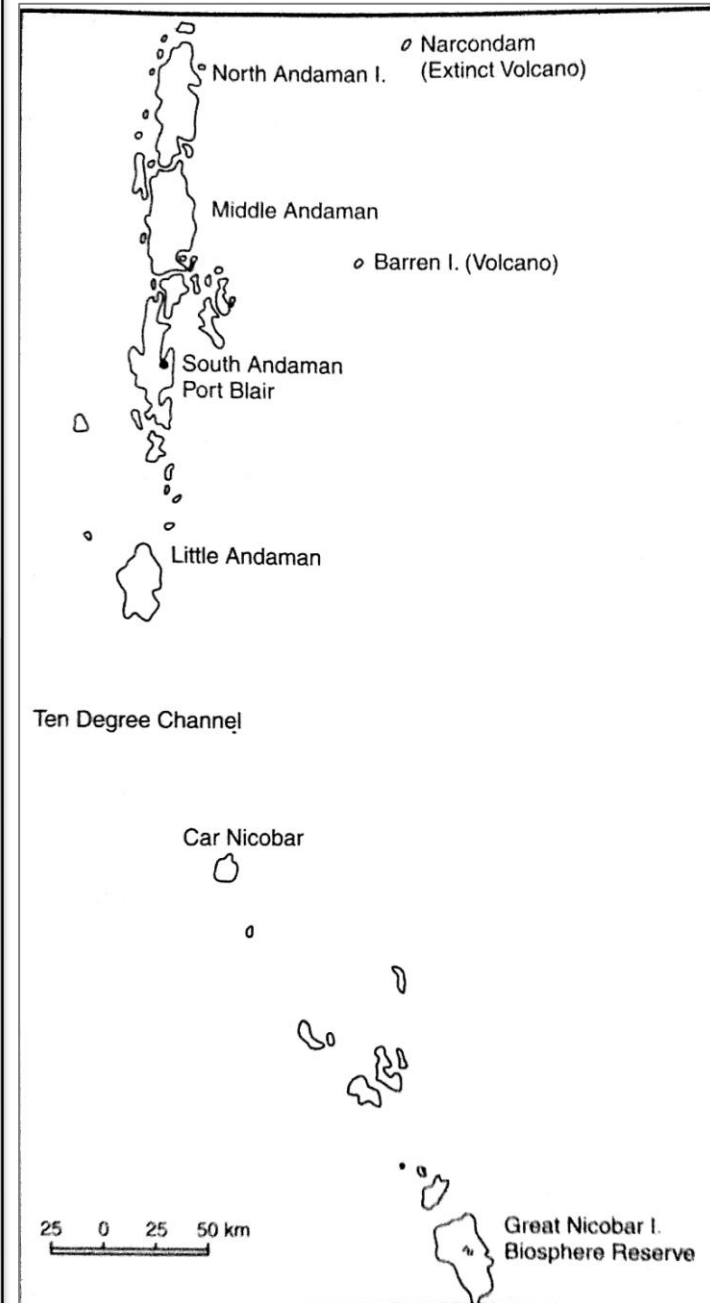
- It includes the coasts of West Bengal, Orissa, Andhra Pradesh & Tamilnadu.
- This coastal plain is formed by erosion of river Ganga, Godavari, Krishna & Kaveri. Width of this plain varies from 161 to 483 km.
- This plain is classified in three subdivisions.
  - i. The Utkal Plain
  - ii. The Andhra Plain
  - iii. The Tamilnadu Plain.



# 5. The Islands

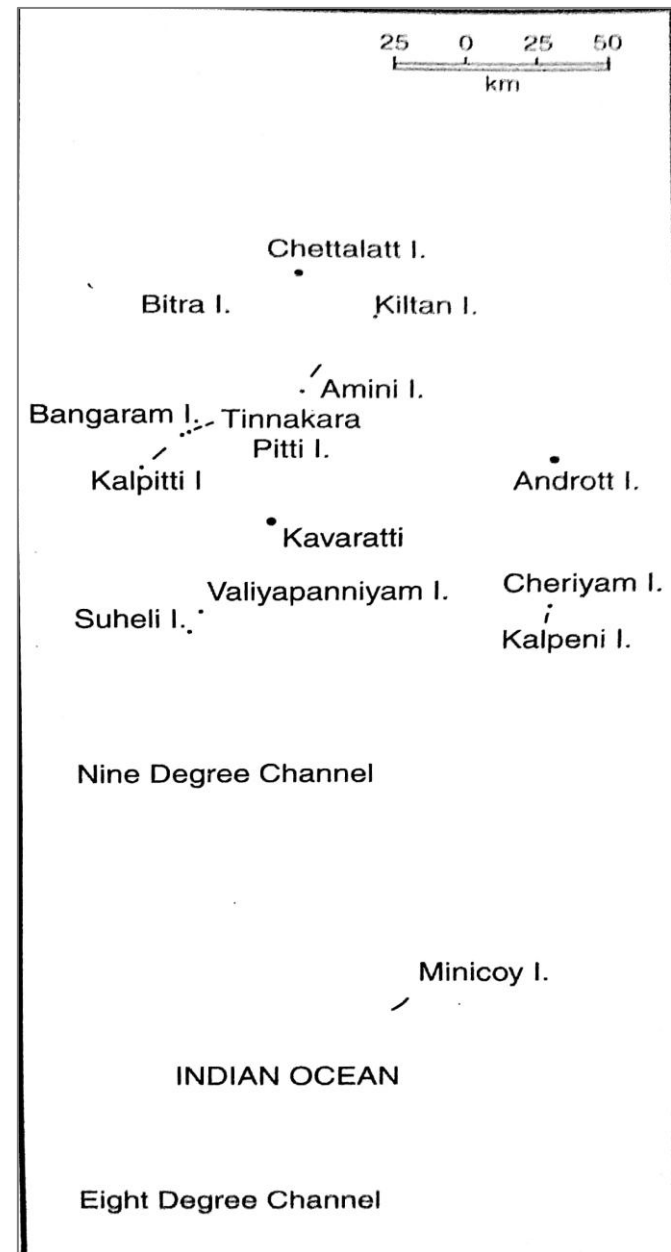
- There are 247 Islands in India.
- Islands are classified into two groups.
- This island is most useful for geostrategic location.
- This island also provides herbal products.
- i. **Islands in the Bay of Bengal:** 204 islands lie in the Bay of Bengal.
  - Andaman and Nicobar Islands are the main islands.
  - Andaman and Nicobar Islands were formed due to collision between the Indian Plate and the Burma Minor Plate (part of the Eurasian Plate) [Similar to the formation of the Himalayas].
  - Andaman and Nicobar Islands are a southward extension of the Arakan Yoma range (Myanmar) which itself is an extension of the Purvanchal Hills.
  - This archipelago is composed of 265 big and small islands [203 Andaman islands + 62 Nicobar Islands] [Numbers are just for understanding. You need not remember trivial facts].
  - The Andaman and Nicobar islands extend from 6° 45' N to 13° 45' N and from 92° 10' E to 94° 15' E for a distance of about 590 km.

- The Andaman islands are divided into three main islands i.e. **North, Middle and South**.
- **Duncan passage** separates **Little Andaman** from **South Andaman**.
- The **Great Andaman** group of islands in the north is separated by the **Ten Degree Channel** from the **Nicobar** group in the south.
- **Port Blair**, the **capital** of Andaman Nicobar Islands lies in the South Andaman.
- Among the Nicobar islands, the **Great Nicobar** is the **largest**. It is the southernmost island and is very close to Sumatra island of Indonesia. The **Car Nicobar** is the **northernmost**.
- Most of these islands are made of tertiary sandstone, limestone and shale resting on basic and ultrabasic volcanoes (Similar to Himalayas).
- The **Barren and Narcondam Islands**, north of Port Blair, are **volcanic islands** [these are the only active volcanoes in India. (There are no active volcanoes in main land India)].
- Some of the islands are fringed with coral reefs. Many of them are covered with thick forests. Most of the islands are mountainous.
- **Saddle peak (737 m)** in North Andaman is the **highest peak**.



## II. Island in the Arabian Sea: 43 islands situated in Arabian Sea

- In the Arabian Sea, there are three types of islands.
- **Amindivi Islands** (consisting of six main islands of Amini, Keltan, Chetlat, Kadmat, Bitra and Perumul Par). [*don't have to remember all these names*]
- **Laccadive Islands** (consisting of five major islands of Androth, Kalpeni, Kavaratti, Pitti and Suheli Par) and
- **Minicoy Island**.
- At present these islands are collectively known as Lakshadweep.
- The Lakshadweep Islands are a group of 25 small islands.
- They are widely scattered about 200-500 km southwest of the Kerala coast.
- **Amindivi Islands** are the northern most while the **Minicoy island** is the southernmost.
- All are tiny islands of coral origin {Atoll} and are
- surrounded by **fringing reefs**.





# MODEL QUESTIONS

Q 1. Describe the major physiographic division of India. ( long type)

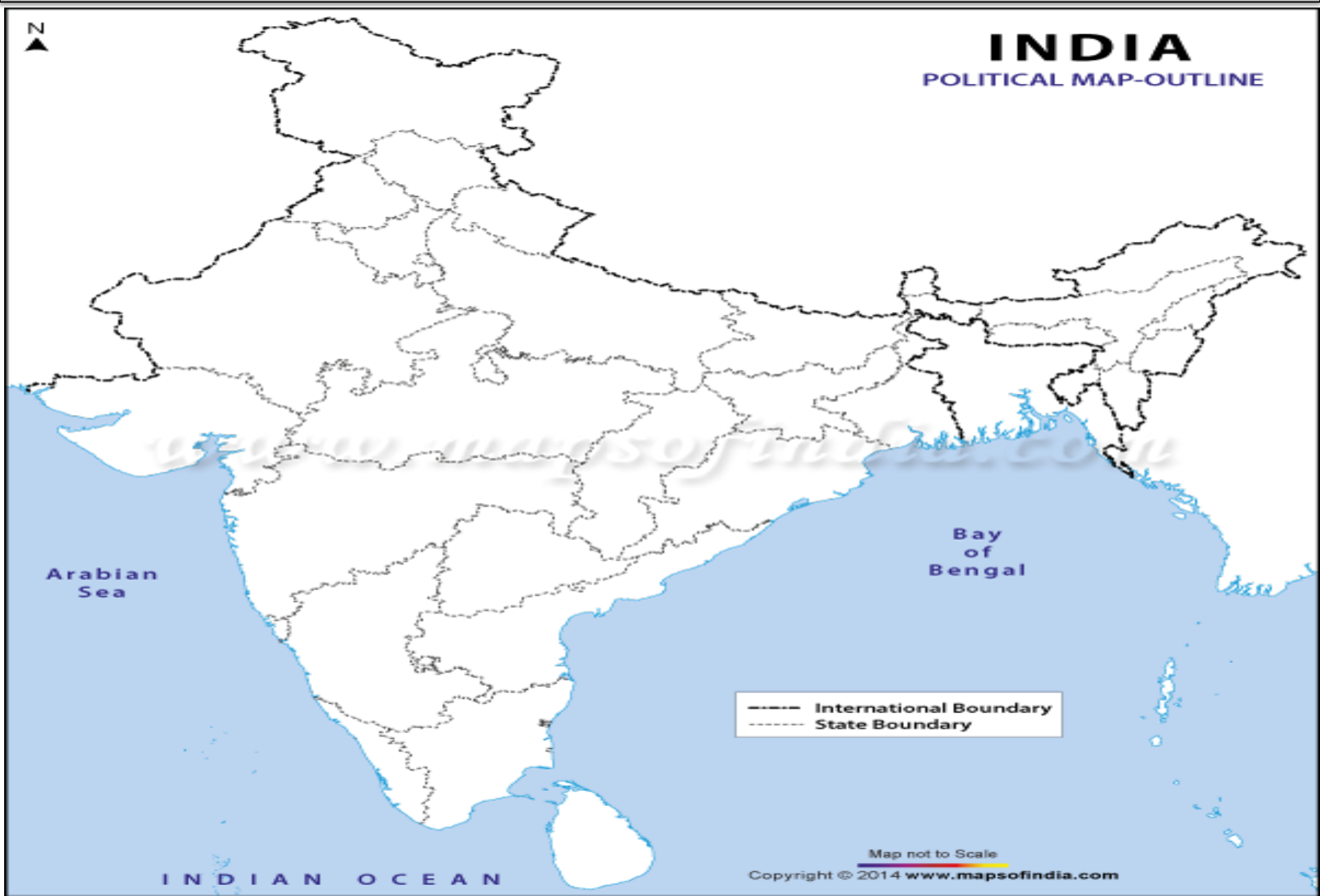
Q 2. “ A Landscape is the result of structure, processes and time.”  
establish the relation of the above statement with physiographic regions and major relief features of India. ( long type)

Q3. Describe the major topographical characteristics of Northern Himalayan Mountainous Region or The Indian Peninsular Plateau region.

Q4. Write short notes on the Regional division of different relief regions of India

- a. The Northern Mountain region
- b. The Northern Plains
- c. The Eastern Coastal Plains
- d. The Western coastal Plains
- e. The Islands

Q5. Represent the Major mountain ranges and peaks, plateau, plains, passes and on the given Map of India.



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