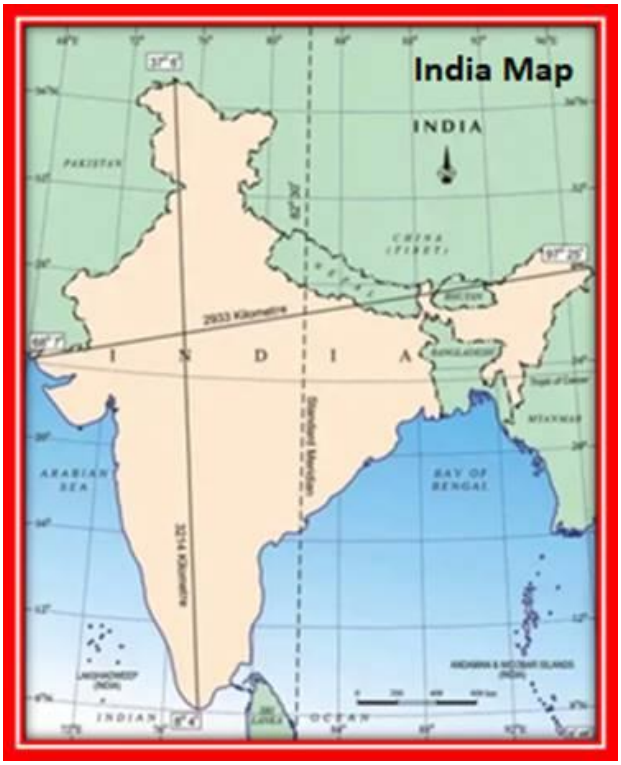
India: Relief Features

Question 1. The sun rises two hours earlier in Arunachal Pradesh as compared to Gujarat in the west. But the clocks show the same time. How does this happen?
Answer: India, the 7th largest country in the world and it has a vast longitudinal extent. India is located between 68°7'E and 97°25'E. The longitudinal difference between the easternmost (Arunachal Pradesh) and westernmost (Gujarat) limits is approximate 30°.



As we know that the sun takes 4 minutes to cross 1 longitude. (One rotation completed by earth in 24 hours (1440 min). Total no. of longitudes is 360. Therefore 1440 ÷ 360= 4min)

So, to cross 30 longitudes, it will take 120 minutes or 2 hours.

To avoid confusion of time difference along the longitudes 8230'E is considered as the Standard Meridian of India. Therefore, all the places in India have the same time.

Question 2. If the Himalayas would not have been situated where they are, how would the climatic conditions of the Indian subcontinent be?

Answer: The Great Himalayas are the great climatic moderator for the Indian subcontinent. They act as a barrier against the chilling Arctic winds. They deflect the Arctic winds back to China and Siberia. They also prevent Jetstreams from interfering the climatic conditions of India. Hence, they prevent North India from becoming a cold desert. It also traps the rain-bearing monsoon winds from escaping to the Asia continent and forcing them to rain in India.

Question 3. The Himalayas do not extend into which of the following states: Madhya Pradesh, Uttar Pradesh, Sikkim, Haryana, Punjab, Uttaranchal

Answer: The Himalayan ranges run in the west-east direction with a distance of about 2400 kms. The Himalayas comprise three parallel ranges. These ranges are separated with deep valleys and extensive plateaus. They extend from Jammu and Kashmir, Himachal radish, Uttarakhand, Sikkim, Arunachal Pradesh, Meghalaya, Nagaland, Manipur, Mizoram, Tripura.

Question 4. Which are the major physiographic divisions of India? Contrast the relief of the Himalayan region with that of the peninsular plateau.

Answer: Following are the major physiographic divisions of India-

i) The Great Himalayas

ii) The Northern Plains

iii) The Western Desert

iv) The Peninsular Plateau

v) The Coastal Plains

vi) The Island groups

The contrasting features of the Himalayan region and of the Peninsular plateau are as follows-

The Himalayan region	The Peninsular region
1. The Himalayan region is of recent geological origin and is comparatively new.	1. The region was a part of the Gondwana land and therefore, it is the oldest landmass of the Indian subcontinent.
2. The Himalayas are young fold mountains.	2. The Peninsular plateaus are formed because of faults.
3. It was formed due to the compressional force generated by the collision of the Indo Australian and Eurasian plates.	3. It was formed due to the breaking and drifting of the Gondwana land.
4. It has lofty mountains and deep valleys.	4. It has hills with a gentle slope and wide valleys.
5. Sedimentary rocks are the primary rocks in this region.	5. The region is predominantly composed of igneous and metamorphic rocks.
6. Geologically, it is located on the converging boundary of two plates and hence it is an unstable zone.	6. The region is rested on the old blocks of the Gondwana land which is comparatively a stable zone.

Question 5. What is the influence of the Himalayas on Indian agriculture?

Answer: The Himalayas has a profound influence on Indian agriculture. Following are the ways in which the Himalayas influence Indian agriculture –

a. Rivers – Agriculture is the mainstay of many people living in the northern region. The Himalayas are the source of water to the three major river systems namely, the Indus river system, the Ganga river system and the Brahmaputra river system. These three river systems altogether with numerous tributaries and distributaries have a large catchment area that they drain and provide life-giving water to the people living in the region. The agricultural lands are irrigated by the water of these rivers.

b. Rains – the Himalayas prevent the rain-bearing monsoon winds from escaping to Asia continent by obstructing its path and forcing them to rain in India. Monsoons are the main source of water/irrigation in India. Its failure results in drought and famine in many parts of India.

c. Fertile soil –River originating in the Himalayas carry loads of fertile alluvium while sculpting the valleys in its upper course. These sediments are deposits on the banks of the river when the river enters the plain and thus each year fertile soil deposited by the river which promotes agricultural production in the plain and delta region.

Question 6. Indo- Gangetic plains have a high density of population. Find the reasons.

Answer: Indo-Gangetic plains are the most populated region of India. There are many factors responsible for it, they are –

a. Perennial supply of water- Availability of water throughout the year make agricultural activities possible all through the year and more than one crop cycle in a year possible to support the population.

b. A strong network of road and rail - Gangetic plains have a strong network of road and rail network that connect it to all the parts of the country. The comparatively flat surface of the Indo-Gangetic plains provides the ideal conditions to construct roads and lay railway lines.

c. Many agro-based industries are located in this region. Providing work to the people and attracting people from other parts in the region.

Question 7. On an outline map of India, show the following:

(i) Mountain and hill ranges –

a. the Karakoram,

b. the Zaskar,

c. the Patkai Bum,

d. Jaintia,

e. the Vindhya range,

f. the Aravali, and

g. the Cardamom hills.

(ii) Peaks –

a. K2,

b. Kanchenjunga,

c. Nanga Parbat and

d. The Anaimudi.

(iii)Plateaus –

a. Chota Nagpur and

b. Malwa

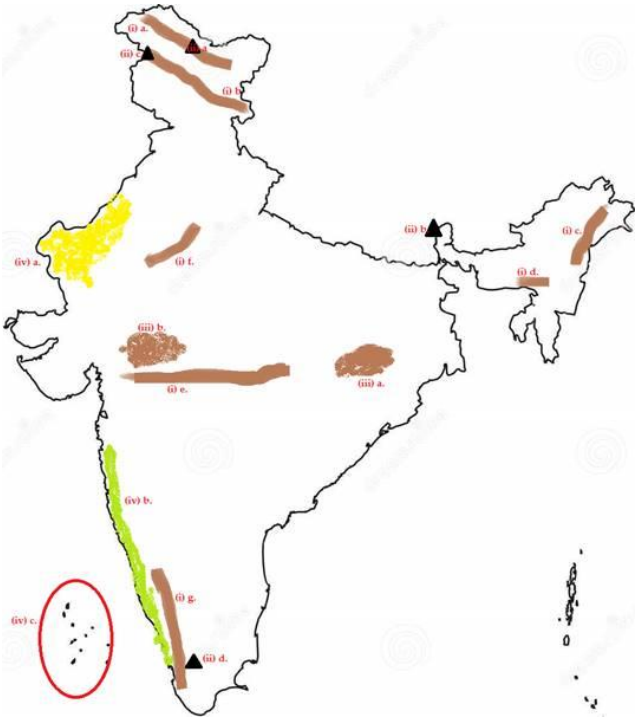
(iv)

a. The Indian Desert,

b. The Western Ghats,

c. Lakshadweep Islands

Answer:



Question 8. **Use an atlas and identify the following:**

(i) The Islands formed due to Volcanic eruption.

(ii) The countries constituting the Indian Subcontinent.

(iii) The states through which the Tropic of Cancer passes.

(iv) The northernmost latitude in degrees.

(v) The southernmost latitude of the Indian mainland in degrees.

(vi) The eastern and the westernmost longitudes in degrees.

(vii) The place situated on the three seas.

(viii)The strait separating Sri Lanka from India.

(ix) The Union Territories of India.

Answer:

(i) Barren Islands (India)

(ii) Pakistan, Srilanka, Nepal, Bangladesh, Bhutan, Myanmar

(iii) Gujarat, Rajasthan, Madhya Pradesh, Chhatisgarh, Jharkhand, West Bengal, Tripura and Mizoram

(iv) $37^0 6'$ N

(v) $8^0 4'$ N

(vi) 68°7'E and 97°25'E

(vii) Kanyakumari

(viii) Palk Straits

(ix) Delhi, Chandigarh, Puducherry, Dadra Nagar Haveli, Daman and Diu, Lakshadweep, Andaman and Nicobar.

Question 9. How are the Eastern coastal plains and western coastal plains similar or different?

Answer: The similarities between the Eastern and Western Coastal plains are as follows –

a. Both of the coastal plains are bordered by the water body.

b. Both are part of the peninsular block.

c. Both lie between the Deccan plateau and the water bodies.

d. Both fall under the same climatic zone.

The points of differences between the two are as follows –

Eastern Coastal Plains	Western Coastal Plains
1. These plains are located along the eastern coast of India and are bordered by the Bay of Bengal.	1. These plains are located along the western coast of India and are bordered by the Arabian sea.
2. These plains stretched smoothly from the north to the south with a broad plain and levelled surface.	2. These plains are frequently intersected by the mountain ridges.
3. These plains are broader in width (80-100 Km)	3. These plains are narrow in width (50-65 Km)
4. The rivers outflowing into the Bay of Bengal creates Deltas.	4. The rivers outflowing into the Arabian Sea do not make Delta.
5. The Eastern Coast is regular and smooth and therefore, unfit for making ports.	5. The Western Coast is highly undulating and indented which led to the formation of harbours. A large number of harbours are located along this coast.

Question 10. Plateau regions in India do not support agriculture as much as the plain regions –what are the reasons for this?

Answer: The foremost and primary reason is the soil and relief. The plateau region is the oldest tectonic block of the Indian subcontinent. It has a highly eroded surface and mainly consists of hard rocks. Due to this reason, there is a very thin layer of soil in this region that too is not fertile and lack humus content.

The next important reason is the lack of availability of water throughout the year. The rivers of this region are rain-fed thus in summers they hardly have water to support agriculture in the region.