

1. India: Relief Features

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1. Question

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 $68^{\circ}7'E$ and $97^{\circ}25'E$. 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 $1440 \div 360 = 4\text{min}$)

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



To avoid confusion of time difference along the longitudes $82^{\circ}30'E$ is considered as the Standard Meridian of India. Therefore, all the places in India have the same time.

2. Question

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.

3. Question

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.

4. Question

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.

5. Question

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.

6. Question

On an outline map of India, show the following:

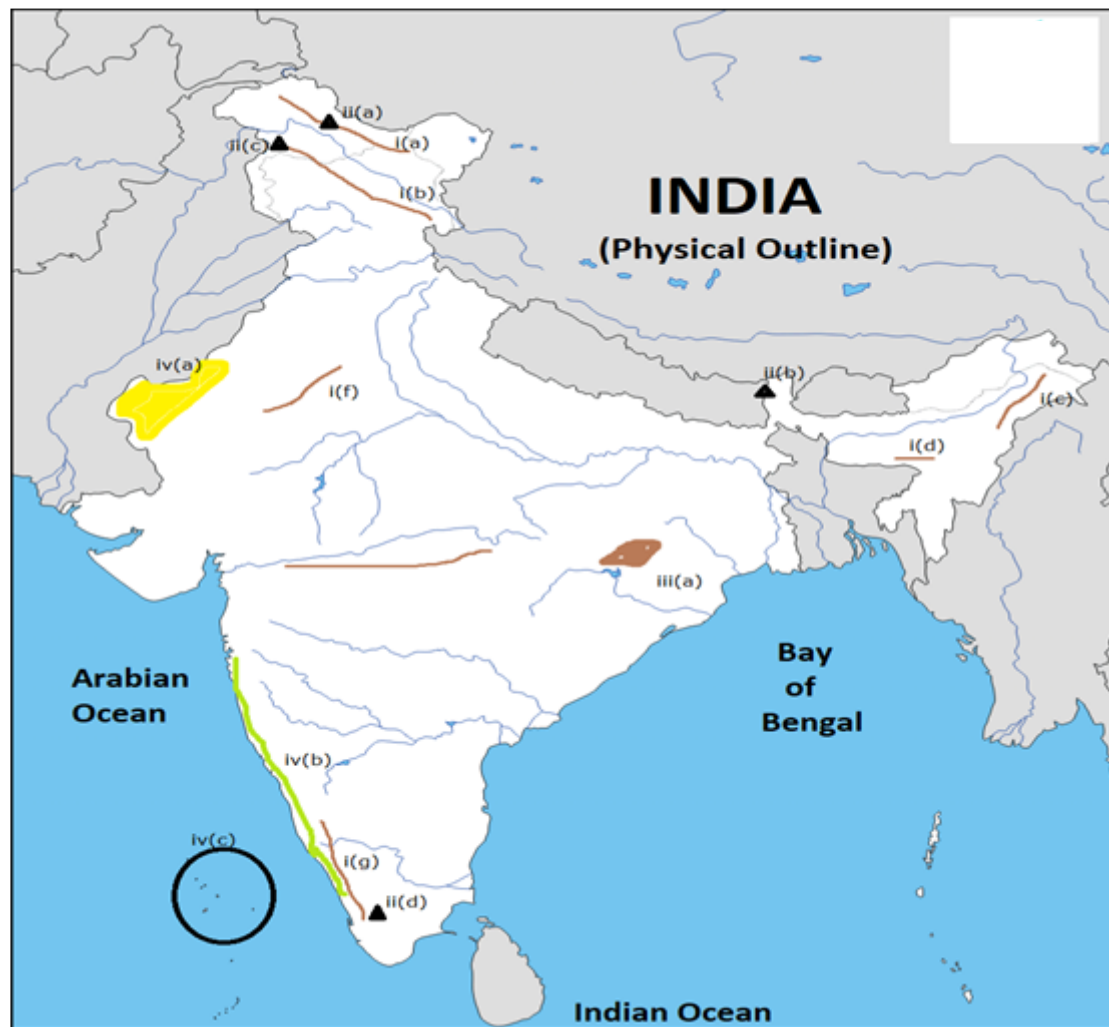
(i) Mountain and hill ranges – the Karakoram, the Zaskar, the Patkai Bum, the Jaintia, the Vindhya range, the Aravali, and the Cardamom hills.

(ii) Peaks – K2, Kanchenjunga, Nanga Parbat and the Anaimudi.

(iii) Plateaus - Chotanagapur and Malwa

(iv) The Indian Desert, Western Ghats, Lakshadweep Islands

Answer



(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

7. Question

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.
- (x) The states in which the Himalayas are extended to

Answer

- (i) Barren Islands (India)
- (ii) Pakistan, Sri Lanka, Nepal, Bangladesh, Bhutan, Myanmar
- (iii) Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, West Bengal, Tripura and Mizoram
- (iv) $37^{\circ}6' \text{ N}$
- (v) $8^{\circ}4' \text{ N}$
- (vi) $68^{\circ}7' \text{ E}$ and $97^{\circ}25' \text{ E}$
- (vii) Kanyakumari
- (viii) Palk Straits
- (ix) Delhi, Chandigarh, Puducherry, Dadra Nagar Haveli, Daman and Diu, Lakshadweep, Andaman and Nicobar.

(x) Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh, Assam, Jammu and Kashmir.

8. Question

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.

9. Question

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.

10. Question

Read about the Himalayas, Islands and Coastal plains and prepare a detailed table.

Answer

Name of the Region	Himalayas	Islands	Coastal Plains
Location	Located in the North and North-Eastern part of India. It is extended over the territories of neighbouring countries too.	Island territories of India are in two different water bodies namely, the Arabian sea (Lakshadweep) and the Bay of Bengal (Andaman and Nicobar).	Coastal plains are located on the western and eastern part of peninsular India along the coast.
Divisions	There are three parallel ranges – Himadri, Middle Himalayas and the Shiwaliks.	Andaman and Nicobar are divided by 10° channel. Lakshadweep consists of 36 small islands of which only 10 are inhabited.	It has two divisions – Eastern Coastal plains and Western Coastal plains
Qualities	Covered by snow and home to many glaciers from where many rivers of northern India originates.	Andaman and Nicobar islands are of volcanic origin. Whereas, Lakshadweep is the coral atoll.	Fertile land and suitable for agriculture.

11. Question

“Himalayas play a vital role in India’s development,” comment.

Answer

The importance of Himalayas in the development of India can be mentioned under followings heads -

- **Strategic importance:** The Himalayas acts as a natural frontier of India against the infiltration from the hostile neighbouring countries (China and Pakistan).
- **Climatic importance:** The Himalayas prevent northward movement of summer monsoon winds and force them to rain in India. Because of which India receives most of its water needs fulfilled by the monsoon. The Himalayas also acts as a climatic barrier by preventing cold Siberian from entering India and deflect them to China and other parts of Asia continent.
- **Physical importance:** The glaciers of the Himalayas are the source of water to many perennial rivers of North India. These rivers in their upper course erode the mountain ranges and deposit the alluvial soils when they enter the plains and delta region. The alluvial soil is highly productive and helps in producing the grain to sustain such a huge population.
- **Agricultural importance:** Rivers that originate in Himalayas deposits a lot of sediment when they enter their middle and mature course. This led to the

formation of India's most fertile agricultural grounds known as Northern Plains. The perennial water of the mighty rivers originating out of the Himalayas is utilized for irrigation, industrial and domestic purpose. Apart from this Himalayan slopes are very well utilised for tea plantation.

- **Economic importance:** There is huge hydro-electric power potential in the Himalayan region. Many hydroelectric power projects are already developed to satisfy rising power needs. The Himalayas are the source for - timber, medicinal Herbs & plants.