

NCERT QUESTIONS WITH SOLUTIONS

1. Choose the right answer from the four alternatives given below :

(i) Which of the following places receives the highest rainfall in the world?

- (a) Silchar
- (b) Mawsynram
- (c) Cherrapunji
- (d) Guwahati

Ans. (b) Mawsynram

(ii) The wind blowing in the northern plains in summers is known as:

- (a) Kaal Baisakhi
- (b) Loo
- (c) Trade winds
- (d) None of the above

Ans. (b) Loo

(iii) Which one of the following causes rainfalls during winters in northwestern part of India?

- (a) Cyclonic depression
- (b) Retreating monsoon
- (c) Western disturbances
- (d) Southwest monsoon

Ans. (a) Cyclonic depression

(iv) Monsoon arrives in India approximately in :

- (a) Early may (b) Early July
- (c) Early June (d) Early august

Ans. (c) Early June

(v) Which one of the following characterises the cold weather in India?

- (a) Warm days and warm nights
- (b) Warm days and cold nights
- (c) Cool days and cold nights
- (d) Cold days and warm nights

Ans. (c) Cool days and cold nights

2. Answer the following questions briefly:

(i) What are the controls affecting the climate of India?

Ans. The elements affecting the climate are temperature, atmospheric pressure, wind, humidity and precipitation.

(ii) Why does India have a monsoon type of climate?

Ans. India is defined as a climatic region with monsoon climate. It is strongly governed by the monsoon winds.

(iii) Which part of India experiences the highest diurnal range of temperature and why?

Ans. The Thar desert had a wide difference between day and night temperatures. There is no sea around to moderate the range of variation of temperatures during day and night.

(iv) Which winds account for rainfall along the Malabar Coast?

Ans. Malabar coast gets rains from depressions and cyclones.

(v) What are jet streams and how do they affect the climate of India?

Ans. Jet stream are high velocity westerly winds blowing through a narrow zone in the upper troposphere. The westerly winds blowing through a narrow zone in the upper troposphere. The westerly flows are responsible for the western disturbances experienced in the north and north-western parts of the country. The easterly jet streams cause tropical depressions during the monsoon as well as October-November months.

(vi) Define monsoons. What do you understand by "break" in monsoon?

Ans. Monsoon 'break' refers to the happening of wet and dry spells during the rainy season. The monsoon rains take place only for a few days at a time. They are interspersed with rainless intervals.

(vii) Why is the monsoon considered a unifying bond?

Ans. The unifying influence of the monsoon on the Indian subcontinent is quite perceptible. The seasonal alteration of the wind systems and the associated weather conditions provide a rhythmic cycle of seasons. Even the uncertainties of rain and uneven distribution are very much typical of the monsoons. The Indian landscape, its animal and plant life, its entire agricultural calendar and the life of the people, including their festivities, revolve around this phenomenon. Year after year, people of India from north to south and from east to west, eagerly await the arrival of the monsoon. These monsoon winds bind the whole country by providing water to set the agricultural activities in motion. The river valleys which carry this water also unite as a single river valley unit.

3. Why does rainfall decrease from east to the west in Northern India?

Ans. June onwards, there is continued low pressure over the north-west region. This attracts trade winds from the Indian ocean. The winds are trapped by air circulation over India. These winds are loaded with abundant water vapours. The winds blow at a very fast speed. The hilly ranges of the northeast account for heavy rainfall in the region.

As these winds travel westwards the amount of moisture contained goes on depleting. There is as such a decrease in rainfall from east to west in northern India.

4. Give reasons as to why:

(i) Seasonal reversal of wind direction takes place over the Indian subcontinent.

Ans. With the reversal in the direction of the surface winds, the monsoons withdraw from the Northern Plains. This reversal occurs as the monsoon trough becomes weaker with the approach of winter months.

(ii) The bulk of rainfall in India is concentrated over a few months.

Ans. The bulk of rainfall is concentrated over the months of June-September. As winter approaches, there is a reversal in the direction of surface winds and monsoons withdraw from the northern plains.

(iii) The Tamil Nadu coast receives winter rainfall.

Ans. Winter rains in Tamil Nadu are caused by north-east trade winds (also known as northeast monsoons). That is the only part of India that gets rains during the winter months.

(iv) The delta region of the eastern coast is frequently struck by cyclones.

Ans. With the onset of winter season, there is a shift in low pressure conditions from the northwestern plains to the Bay of Bengal. During the middle of November, this shift results in the occurrence of cyclones. The deltas of Krishna and Kaveri rivers (and also Bangladesh) have to bear the fury of these cyclones year after year.

(v) Parts of Rajasthan, Gujarat and the leeward side of the Western ghats are drought prone.

Ans. Rainfall in India is influenced by location as well as relief features. Areas situated in the direction of the monsoon winds receive more rainfall. The rainfall goes on decreasing from east to west. The moisture content of the monsoons goes on decreasing as they move westward. Areas situated in extreme west and devoid of hilly ranges that intercept the monsoon remain drought prone.

5. Describe the regional variations in the climatic conditions of India with the help of suitable example.

Ans. There is regional variation in the climatic conditions of India. Temperature and precipitation vary from place to place and season to season.

(i) During the summer season, the temperature rises up to 50°C in parts to Rajasthan, whereas it may be around 20°C in Pahalgam in Kashmir.

(ii) During the winter season at night the temperature in Drass in Kashmir may be minus 45°C, whereas in Thiruvananthapuram in Kerala may have a temperature of 20°C.

(iii) In Andaman Islands, the difference between the temperatures of day and night may be hardly 7° - 8°C.

(iv) Coastal areas experience less contrast in the temperature, whereas seasonal contrasts are more in the interior of the country.

(v) There is decrease in rainfall generally from east to west in the northern plains.

(vi) Most parts of India receive rainfall from June – September, whereas some parts like the Tamil Nadu coast gets a large portion of its rain during October and November.

6. Discuss the mechanism of monsoons.

Ans. The north-east trade winds that blow during the winter months get replaced as the summer season sets in. There is continued low pressure over the north-west region. This attracts trade winds from the Southern Hemisphere. Coming from the Indian Ocean, these winds cross over the Bay of Bengal and the Arabian sea. They are then trapped by air circulation taking place over India. These winds are loaded with moisture and blow at a very fast speed. The rain caused by south-west monsoon is not uniform. The areas of western Ghats situated in the direction of the winds get more get more rainfall than the other side.

The cyclonic depressions formed at the head of the Bay of Bengal cause uneven and uncertain distribution of rainfall. These depressions move towards the low-pressure monsoon trough which is not steadily placed. For a variety of reasons, they move northwards or southwards. When the axis of the trough moves close to the Himalayas, there are heavy rains in the Himalayan regions.

There plains get dry spells. With the approach of winter, the monsoon trough becomes weaker. There is reversal in the direction of surface winds with the approach of winter. The monsoons now withdraw from the Northern plains. The shift in the low-pressure conditions from north-western plains to the Bay of Bengal causes cyclones and rains in the coromandel coast.

7. Give an account of weather conditions and characteristics of the cold season.

Ans. The winter season lasts from the month of December to February. The season is mostly dry. Cold is severe in the northern parts of the country. The southern parts have only mild cold. In the northern plains the days may be generally warm, but the nights are cold. Places situated at high altitudes have snowfall. Light rainfall may occur during the winter months caused by western disturbances. These disturbances are caused by shallow cyclonic depressions originating over the east Mediterranean Sea. Travelling eastward, these depressions reach the north-western parts of India. On their way these get loaded with moisture from the Caspian Sea and the Persian Gulf. The western disturbances are responsible for snowfall in the western Himalayan regions apart from light rains over north-western parts of the country.

Winter rains are often followed by cold waves. Tamil Nadu gets rains in winter by the northeast trade winds.

8. Give the characteristics and effects of the monsoon rainfall in India.

Ans. The monsoon rainfall in India is not evenly distributed. Rainy season has a longer spell in the eastern parts of the country. The northwest gets rains for barely two months. The duration of the rainy season is longer in the south than in the north. The southwest monsoon pours more water over areas of Western Ghats that are situated in the direction of the winds. The quantity of rainfall is heavy in the hilly regions of the north-east. It keeps declining as the winds move westwards. Patna gets more rain than Allahabad. Similarly, Delhi gets much less rain than Kolkata. Monsoons are not steady. Rainy days are interspersed with rainless days. When the rains are heavy, the rivers get flooded causing heavy damage in the plains year after year. A dry spell would cause as much misery as the river floods. The arrival and departure of monsoons is uncertain. So is the extent of rainfall in any given rainy season. These characteristics of monsoon has a very destabilizing effect on Indian economy that continues to be predominantly agricultural and severely dependent on rainfed irrigation.