

NCERT Solutions for Class 9 SST Geography

Chapter 4 Climate

1. Choose the correct answer from the four alternatives given below.

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

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

Answer: Mawsynram

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

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

Answer: Loo

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

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

Answer: Western disturbances

(iv) Monsoon arrives in India approximately in:

(a) Early May

(b) Early July

(c) Early June

(d) Early August

Answer: Early June

(v) Which one of the following characterises the cold-weather season 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

Answer: Warm days and cold nights.

2. Answer the following questions briefly.

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

Answer: The climate of any place is primarily influenced by six factors. Latitude, height, pressure, the wind system, the continent's distance from the sea, ocean currents, and relief features

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

Answer: The climate of India is referred to as "monsoon" type. A specific seasonal pattern defines the monsoon type of climate. The weather significantly varies from season to season. The term "monsoon" describes the yearly seasonal change in wind direction. The interior of the country is where these changes are most apparent. While there is variety in the pattern of rainfall, there

is not much change in temperature in the coastal regions. The wind system known as the "monsoon" reverses direction seasonally.

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

Answer: This phenomenon is being experienced in parts of northwest India. The Thar desert is the cause of this impact. The Thar Desert experiences daytime highs of up to 50°C and overnight lows of about 15°C.

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

Answer: Southwest monsoon winds are responsible for rainfall along the Malabar Coast.

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

Answer: A slender belt of westerly winds blowing at an altitude above 12,000 meters is known as a jet stream. They move at a range of speeds, from around 110 km/h in the summer to roughly 184 km/h in the winter. There are many different jet streams, but the mid-latitude and sub-tropical jet streams are the most reliable. Subtropical westerly jet streams are those that are found at latitudes between 27 and 30 degrees north. Throughout the year, with the exception of the summer, these jet streams flow south of the Himalayas.

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

Answer: The Arabic word "mausim," which literally means "season," is the source of the English word "monsoon." The term "monsoon" describes the yearly seasonal change in wind direction.

Rainfall during the monsoon season only lasts a few days at a time. There are intervals without rain in between them. these are called "break." in monsoon

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

Answer: The monsoon's unifying effect on the Indian subcontinent is very observable. Despite the moderating effect, other variables have generated, the climate on the Indian subcontinent is highly variable. The nation as a whole is affected by the monsoon's rainfall and great variations in the temperature

conditions. A cyclic cycle of seasons is created by seasonal changes in wind patterns and the accompanying weather.

This phenomenon is important to the Indian landscape, its animal and plant life, its complete agricultural cycle, and the way of life of the people, including their festivals. Indians from the north to the south and from the east to the west look forward to the monsoon every year. By supplying water to start agricultural activity, these monsoon winds unite the entire nation. The river valleys that carry this water come together to form one unified river valley.

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

Answer: In Northern India, rainfall decreases from the east to the west as the moisture content of the winds declines. Every year, rainfall across the western coast and northeastern India about 400 cm.

4. Give reasons as to why.

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

Answer: Changes in pressure at different locations are what lead to the seasonal reversal of the wind. Pressure is one of the key factors influencing a variety of behaviors. A significant factor in the yearly change in wind direction over the Indian subcontinent is El Nino.

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

Answer: The weather completely changes when the southwest monsoon arrives in India. The South West Monsoon winds control rainfall. By July, it has spread far across the nation, moving quickly.

(iii) The Tamil Nadu coast receives winter rainfall.

Answer: Tamil Nadu's coast suffers winter rains. because of the North-East monsoon winds that blow there after crossing the Bay of Bengal and collecting up moisture there.

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

Answer: The low-pressure conditions over northwest India are moved to the Bay of Bengal. Cyclonic depressions that arise over the Andaman Sea are linked to this alteration in weather patterns. These cyclones typically cross India's eastern coast, where they produce large amounts of rain. Cyclones occasionally strike the delta region of the eastern coast.

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

Answer: The rainfall in some areas of Rajasthan, Gujarat, and the leeward side of the Western Ghats is dependent on the Arabian Sea branch of the South-Western Monsoon. The Western Ghats receive a branch of the Arabian Sea, which discharges the majority of its moisture on its windward side. By the time it reaches the Leeward side, the majority of its moisture has been lost, making the Leeward side prone to drought. As a result, whereas places with excessive rainfall are susceptible to flooding, areas with low rainfall are vulnerable to drought.

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

Answer: The Indian Peninsula showed considerable regional climate variations. As example,

For example,

- In the summer, some areas of Rajasthan have temperatures of 50°C, whilst Jammu and Kashmir have temperatures of about 20°C. On the Deccan plateau, the hottest temperature ever recorded in March is roughly 38 °C. In April, the mercury hovers around 42 degrees Celsius in Gujarat and Madhya Pradesh. In the country's northwest, temperatures of 45 °C are typical for the month of May.
- The Himalayan region has negative wintertime temperatures. Wintertime temperatures in northwest India can vary from zero to fifteen degrees. The temperature in Chennai stays at a pleasant 25°C during the same season. The same difference may be witnessed in summer when Chennai is comfortable at 30°C and Rajasthan can reach temperatures of over 47°C.

6. Discuss the mechanisms of the monsoon.

Answer:

1. Land and water are differentially heated and cooled by the sun. the difference between land and aquatic bodies' rates of heating and cooling results in India's landmass experiencing low pressure, while the ocean's surface experiences high pressure.
2. The ITCZ's (Inter Tropical Convergence Zone) summertime movement over the Ganga Plain. The normal position of the Inter Tropical Convergence Zone (ITCZ) is 5°N of the equator. During the summer, it moves over the Ganga plains. During the monsoon season, it is also referred to as the monsoon trough.
3. The Indian Monsoon is impacted by the high-pressure area that is present east of Madagascar.
4. Low pressure is brought on by the Tibetan plateau's high summer heating.
5. During the summer, the tropical easterly jet stream passes over the Indian Peninsula and the westerly jet stream flows to the north of the Himalayas.
6. The monsoon is impacted by the Southern Oscillation, or SO, a cyclical shift in pressure conditions between the Pacific and Indian oceans.

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

Answer: Northern India has cold weather from mid-November to February. The coldest months in the northern section of India are December and January. In Chennai, the temperature is between 24° and 25°C, whereas it fluctuates between 10° and 15°C in the northern plains. The typical weather features include a clear sky, low humidity, low temperatures, and weak changeable winds. There are pleasant days and chilly nights.

The arrival of cyclonic disturbances from the west and northwest is a defining aspect of the cold weather season over the northern plains. These low-pressure systems develop across western Asia and the Mediterranean Sea before moving into India with the westerly flow. They bring about snowfall in the mountains and winter rains over the plains. The rabi crop depends heavily on the small amount of winter rain. Locally, this rainfall is known as mahawat.

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

Answer: The monsoon season lasts between 100 to 120 days, beginning in early June and ending in mid-September. Because the precise timing of arrival and departure varies from year to year, monsoon winds are uncertain..The typical rainfall abruptly increases around the time of its arrival and then continues steadily for many days. When compared to the pre-monsoon showers, this is described as the monsoon's "burst." Across the nation, the rainfall is not evenly distributed. By the first week of June, the monsoon typically makes its way to the southernmost point of the Indian peninsula.

Effects of the monsoon rainfall in India: Monsoon is very important for India and its agriculture. As soon as they get there, its impact is evident. Crops are negatively impacted by late, low, or excessive rainfall. People around the nation eagerly await its arrival. The farmers are prepared to plant their seeds, and agricultural work starts. India benefits from a variety of climate patterns thanks to the monsoon. Therefore, despite the fact that there are significant regional variations, it unifies the nation and its citizens.