

Key Terms to remember

- Weather is the momentary state of the atmosphere while climate refers to the average of the weather conditions over a longer period of time.
- Weather changes quickly, may be within a day or week but climate changes slowly and may be noted after 50 years or even more.
- Monsoon means the climate associated with seasonal reversal in the direction of winds.
- India has hot monsoonal climate.

Describe Regional variations in the Monsoon Climate of India

- While in the summer the temperature touches 55°C in the western Rajasthan, it drops down to as low as minus 45°C in winter around Leh.
- While on a December night, temperature in Drass (Ladakh) may drop down to minus 45°C but in Chennai on the same night it records 20°C or 22°C.
- While snowfall occurs in the Himalayas, it only rains over the rest of the country.
- Tura situated in the Garo Hills of Meghalaya may receive an amount of rainfall in a single day which is equal to 10 years of rainfall at Jaisalmer.
- Most parts of the country get rainfall during June-September, but on the coastal areas of Tamil Nadu, it rains in the beginning of the winter season.

EXPLAIN THE FACTORS DETERMINING THE CLIMATE OF INDIA

Factors related to Location and Relief

- Latitude: The Tropic of Cancer passes through the central part of India. Thus, northern part of the India lies in sub-tropical zone and while the southern part lies in the tropical zone.
- The Himalayan Mountains: The lofty Himalayas in the north act as an effective climatic divide. They protect the subcontinent from the cold northern winds.
- Distribution of Land and Water: India is bordered by the Indian Ocean on three sides in the south. This creates different air pressure zones in different seasons.
- Distance from the Sea: With a long coastline, large coastal areas have an equable climate. Areas in the interior of India are far away from the sea have extremes of climate.
- Altitude: Temperature decreases with height. Due to thin air, places in the mountains are cooler than places on the plains.
- Relief: It affects the temperature, air pressure, direction and speed of wind and the amount and distribution of rainfall.

The Cold Weather Season

- The cold weather season sets in by mid-November in northern India. December and January are the coldest months in the northern plain.
- The mean daily temperature remains below 21°C over most parts of northern India.
- The excessive cold in north India is due to the snowfall in the nearby Himalayan ranges.
- The Peninsular region of India, however, does not have any cold weather season.
- During the winters, northern region receive rainfall due to mid-latitude cyclonic depressions called western disturbance.

The Hot Weather Season

- April, May and June are the months of summer in north India. In most parts of India, temperatures recorded are between 30°-32°C.
- The summer months are a period of excessive heat and low air pressure in the northern half of the country.
- In the Rajasthan, the dry and hot winds known as 'Loo', blow in the afternoon till midnight.
- Dust storms in the evening are very common during May in Punjab, Haryana, Rajasthan and Uttar Pradesh.
- Some Famous local storms of this season are Mango Shower and Blossom Shower in Kerala, Nor Westers in Bengal and Assam and Loo in the Northern plains.

The Southwest Monsoon Season

- By early June the trade winds coming from the Indian Ocean bring with them rains and are called southwest monsoon.
- Sudden thunder and lightning of these monsoon winds is termed as the "burst" of the monsoon.
- The monsoon winds approach India from Arabian Sea and Bay of Bengal.
- Rainfall received from the southwest monsoons occurs between June and September.
- The monsoon rainfall are uncertain sometimes they are delayed or arrive earlier than usual.

Season of Retreating Monsoon

- The months of October and November are known for retreating monsoons.
- The retreating southwest monsoon season is marked by clear skies and rise in temperature.
- High temperature and humidity during this season are commonly known as the 'October heat'.
- The weather in the retreating monsoon is dry in north India but rainfall occurs in the Tamil Nadu coast.
- Tropical cyclones originate over the Andaman Sea and bring disaster in eastern coastal plains.

Monsoons and the Economic Life in India

- The entire agricultural cycle of India on which 64 per cent people of India depend is based on southwest monsoon.
- Regional variations in monsoon climate help in growing various types of crops.
- Variability of rainfall brings droughts or floods every year in some parts of the country.
- Agricultural prosperity of India depends very much on timely and adequately distributed rainfall.
- Sudden monsoon burst creates problem of soil erosion over large areas in India.