

Class: 9th                      Subject: Geography

Study Material              Ch.4.Climate

In this chapter, you will learn about the atmospheric conditions of India. you will get the answers to many questions such as why do we wear woollens in December or why is it hot and uncomfortable in the month of May, and why it rains in June – July?

Climate refers to the sum total of weather conditions and variations over a large area for a long period of time (more than thirty years).

Weather refers to the state of the atmosphere over an area at any point of time.

The elements of weather and climate are the same, i.e. temperature, atmospheric pressure, wind, humidity and precipitation. On the basis of the monthly atmospheric conditions, the year is divided into seasons such as:

Winter

Summer

Rainy Seasons

Climatic Controls

The climate of any place depends on the following factors:

1) Latitude

The amount of solar energy received varies according to latitude due to the curvature of the earth. That's why air temperature generally decreases from the equator towards the poles.

2) Altitude

The atmosphere becomes less dense and temperature decreases when we go to the higher altitude from the earth surface. This is the reason why hills are cooler during summers.

3) Pressure and wind system

The pressure and wind system of any area depends on the latitude and altitude of the place. It influences the temperature and rainfall pattern.

#### 4) Distance from the sea

The sea exerts a moderating influence on the climate. As the distance from the sea increases, its moderating influence decreases and people experience extreme weather conditions. This condition is known as continentality i.e. very hot during summers and very cold during winters.

#### 5) Ocean currents

Ocean currents along with onshore winds affect the climate of the coastal areas. For example, any coastal area with warm or cold currents flowing past it, will be warmed or cooled if the winds are onshore.

#### 6) Relief features

Relief plays a major role in determining the climate of a place. High mountains act as barriers for cold or hot winds. They may also cause precipitation if they are high enough and lie in the path of rain-bearing winds. Precipitation is any form of moisture which falls to the earth. It includes rain, snow, hail and sleet.

### Factors Affecting India's Climate

#### Latitude:

The Tropic of Cancer passes through the middle of the country from the Rann of Kachchh in the west to Mizoram in the east. India's climate has characteristics of tropical as well as subtropical climates.

#### Altitude

India has mountains to the north and also has a vast coastal area where the maximum elevation is about 30 metres. Owing to the mountains, subcontinent experiences comparatively milder winters as compared to central Asia.

#### Pressure and Winds

The climate and weather conditions in India are governed by the following atmospheric conditions:

#### Pressure and surface winds

#### Upper air circulation

#### Western cyclonic disturbances and tropical cyclones

Air moves from the high-pressure area over the southern Indian Ocean, in a south-easterly direction, crosses the equator and turns right towards the low-pressure areas over the Indian subcontinent. These are known as the Southwest Monsoon winds. These winds blow over the warm oceans, gather moisture and bring widespread rainfall over the territories of India.

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