

India has a tropical monsoon type of climate.

This is because India lies in the tropical belt and its climate is influenced by the monsoon winds. The climate of India has many regional variations as the day temperature in June reaches  $48^{\circ}\text{--}50^{\circ}\text{C}$  at Bikaner, Rajasthan while it hardly reaches  $22^{\circ}\text{C}$  at Gulmarg.

In December month temperature during night time at Dras (Kargil) decreases by  $-40^{\circ}\text{C}$  while at Chennai it was  $20\text{--}22^{\circ}\text{C}$ . Mawsynram receives average rainfall of 1221 cm while Jaisalmer has annual rainfall of 12 cm.

### FACTORS INFLUENCING CLIMATE OF INDIA:-

1. Location and Latitudinal Extent: India extends roughly from  $8^{\circ}\text{N}$  to  $37^{\circ}\text{N}$  and Tropic of Cancer passes through it. Areas South to Tropic of Cancer are closer to the equator and experience high temperature throughout the year. Northern part lies in warm temperate zone.
2. Distance from the Sea: Areas lying near the coast or coastal areas have equable or maritime climate (due to the influence of sea breeze) whereas interior locations are deprived of moderating influence of sea and experience Continental Climate.
3. Northern Mountain: Himalayas protect India from bitterly cold and dry winds of Central Asia during winters. They also act as a physical barrier for

rain bearing South-West monsoon winds.

4. Physiography:- Places located at higher altitude have cooler climate even though they are located in the Peninsular India eg. Ooty. The South West Monsoon from Arabian sea strikes Western Ghats and cause rainfall in Western coastal plains (windward slopes) whereas parts of Eastern Maharashtra, Karnataka, Telengana, Andhra Pradesh and Tamil Nadu lie in rainshadow or leeward slope & remains dry.
5. Monsoon Winds:- The monsoon winds have almost a universal effect in bringing summer rain over the whole South Asia. The complete reversal of monsoon winds bring a sudden change in seasons. Harsh summer season gives way to rainy season.
6. Upper air Circulation:- (Jet Streams).
  - a) Westerly Jet Streams:- blow during winters over the sub tropical zone. It is bifurcated by Himalayan range. into the Northern branch blows along the Northern edge of Himalaya and Southern branch blow to South of Himalayas along  $25^{\circ}\text{N}$  latitude. It is responsible for bringing Western disturbances from mediterranean region to India (causing winter rainfall in NW India)
  - b) Easterly Jet Stream due to shift of Sun's vertical rays to the Northern hemisphere during summers, the Westerly Jet Stream is replaced by Easterly Jet Streams, which owes its origin to the heating of Tibetan Plateau.

7. Tropical Cyclone:- Tropical Cyclones originate in Bay of Bengal and Arabian Sea. They influence large parts of Peninsular India. Some cyclones are born during retreating monsoon season i.e. October and November.
8. El-Nino Effect:- El-Nino is a warm ocean-current which sometimes appear off the coast of Peru in South America during the month of December. It increases the surface temperature of the sea and affect the movement of monsoon winds in the Indian Ocean and causes weak drought like situation in the Indian sub-continent.

### THE FOUR SEASONS

Seasonal pattern of India is divided into four parts as

1. The Hot Dry Season (March to May).
2. Season of South West Monsoon (June to September).
3. Season of Retreating South West Monsoon (October to November)
4. The Cold Season (December to February).

1. Hot Dry Season:- As this season advances, sun's vertical rays move Northwards and large part of the country, South of Satpura range heated up. The Northern and Central parts of India experiences 'heat waves' (the normal maximum temperature of a particular region <sup>increased by</sup> 6°C to 7°C above normal). Most of the heat waves develops over Rajasthan, Haryana and Punjab.

In may and early June, High temperature in North-West India builds steep pressure gradient

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(Steep pressure gradient is when the pressure changes very rapidly and significantly between two areas). Under such conditions hot and dry, dust laden, strong winds known as 'loo' blows in the regions of Rajasthan, Haryana, Punjab, Jammu, Delhi, UP, Bihar and M.P. It is locally known as 'Aandhis' or blinding storms. These winds have temperature range between  $45^{\circ}\text{C}$  and  $50^{\circ}\text{C}$  which is hot enough to cause heatstrokes.

The strong convectional movement (warm air ascending) along with Westerly Jet Streams in upper troposphere leads to Thunderstorms in East and North East India. They normally originate over Chota Nagpur plateau and carried Eastward by Westerly winds known as 'Norwesters'.

- The period of maximum occurrence of these storms is the month of Vaisakh (mid-March to mid-April). Hence, in West Bengal it is known as 'Kali Baisakhi' means 'mass of black clouds of Vaisakh'.
- The rainfall brought by Norwesters is known as 'Spring storm showers'. This rainfall is useful for cultivation of tea, jute and rice.
- It is known as Tea Shower (Bordoli Chheerha) in Assam.
- In Tamil Nadu and Andhra Pradesh these rains are known as 'Mango showers' as it helps in ripening of mangoes.
- In Karnataka they are called 'Cherry blossoms' as it causes blossoming (budding and unfolding of flowers) of Coffee plants.

(4)

Home-Work:-

- A. Give reason for the following:-
1. The Northern Plains of India have a Continental type of Climate.
  2. Northern plains do not freeze in winters.
  3. Even in summer Shimla is cooler than Delhi.
  4. Mango Showers are beneficial local winds.
  5. Central Maharashtra receive little rainfall.
  6. Chennai has a lower annual range of temperature than Lucknow.
- B. Do Q.1,2,3,6,14, of Book's Back Exercise.

Note:-

Parents are requested to make their child go through the summary and make them read the topic thoroughly from the Book. Please ensure that the child must complete the Home work assignment.

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