

CLASS NOTES

Class: IX

Topic: Climate – Controls affecting the climate of a place

Subject: Geography

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.

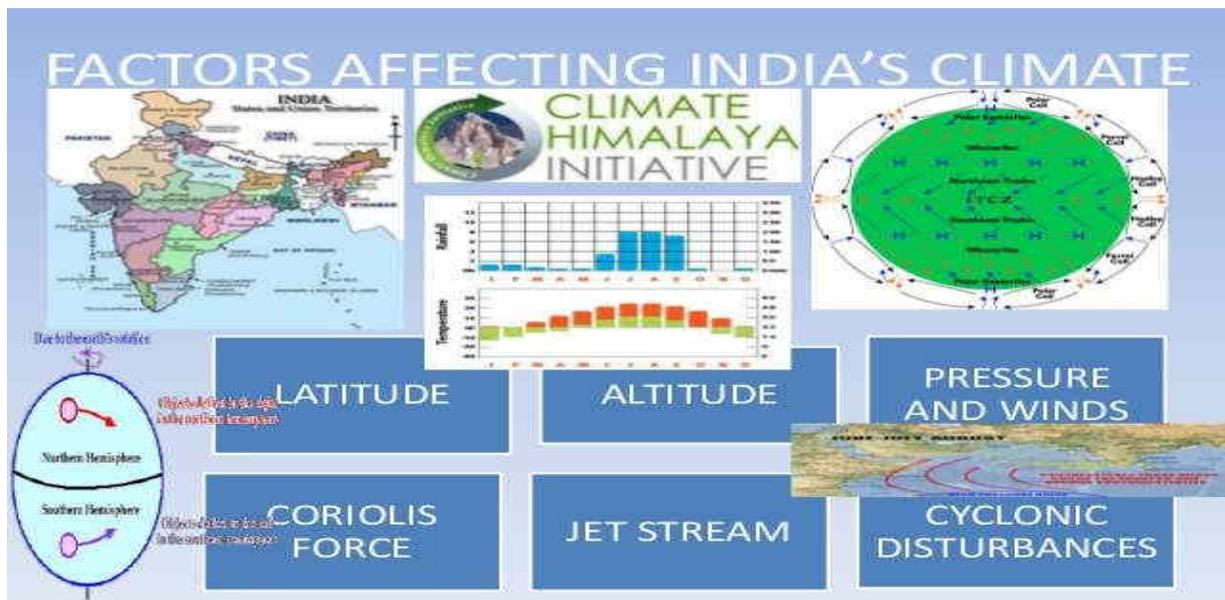
Pressure and Winds

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

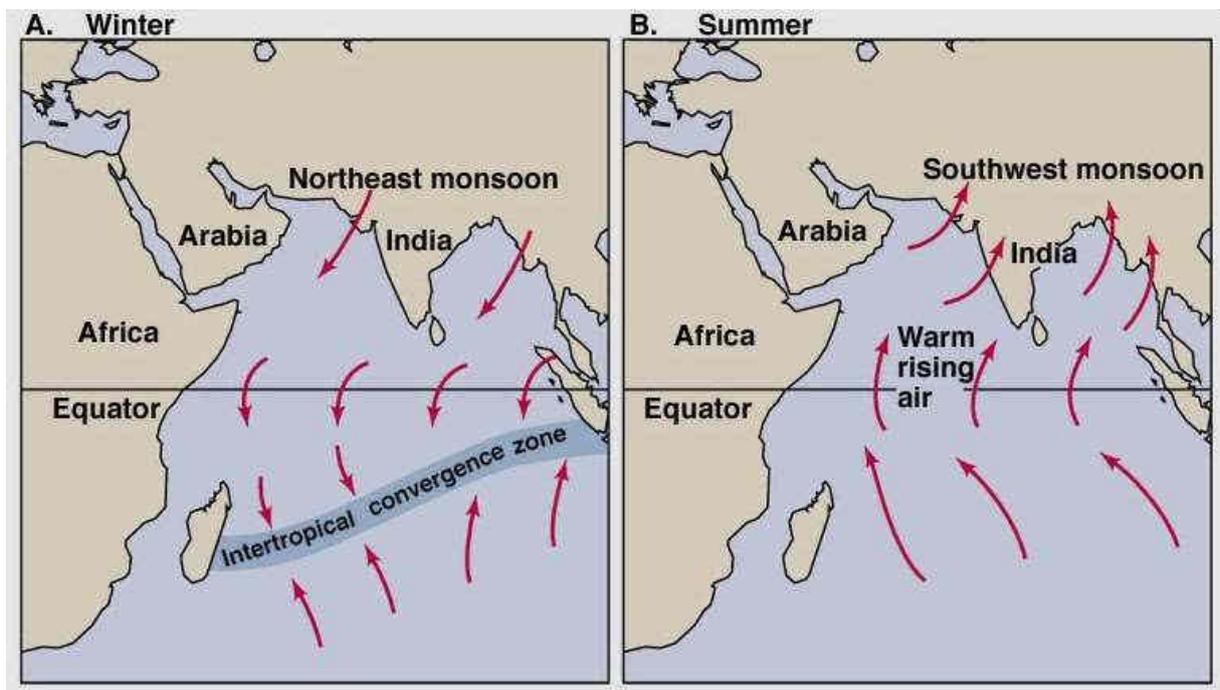
- Pressure and surface winds
- Upper air circulation
- Western cyclonic disturbances and tropical cyclones

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.

Jet streams are fast flowing, narrow, meandering air currents in the atmosphere.



The Indian Monsoon



The climate of India is strongly influenced by monsoon winds. The seasonal reversal of the

wind system is known as “**monsoon**”. The monsoons are experienced in the tropical area roughly between 20° N and 20° S. Go through the following facts to understand the mechanism of the monsoons in a better way:

1. The **differential heating and cooling of land and water** creates low pressure on the landmass of India while the seas around experience comparatively high pressure.
2. The **shift of the position of Inter-Tropical Convergence Zone (ITCZ)** in summer, over the Ganga plain, is also known as the monsoon-trough during the monsoon season.
3. The presence of the **high-pressure area, east of Madagascar**, approximately at 20°S over the Indian Ocean affects the Indian Monsoon.
4. The **Tibetan plateau gets intensely heated** during summer, which results in strong vertical air currents and the formation of low pressure over the plateau at about 9 km above sea level.
5. The **movement of the westerly jet stream to the north of the Himalayas** and the **presence of the tropical easterly jet stream over the Indian peninsula** during summer also impact the Indian Monsoon.

The changes in the pressure conditions over the southern oceans also affect the monsoons. The irregularly periodic variation in winds and sea surface temperatures over the tropical eastern Pacific Ocean that affects the climate of the tropics and subtropics is known as **Southern Oscillation or SO**.

Contents prepared absolutely from home.