

## UPSC Civil Services Examination

### UPSC Notes [GS-I]

#### Topic: Heating and Cooling of Atmosphere [Geography Notes for UPSC]

##### Heating and Cooling of atmosphere

- There are various ways of heating and cooling of the atmosphere.
- The earth after being warmed by insolation transfers the heat to the atmospheric layers in long waveform.

##### Conduction

- The air in interaction with the land gets heated gradually and the upper layers in touch with the lower layers also get heated. This process is called conduction.
- This process takes place when two bodies of uneven temperature are in contact with one another, there is a flow of energy from the warmer to the cooler body.
- The heat transfer continues until both the bodies reach the same temperature or the contact is interrupted.
- This process is significant in heating the lower layers of the atmosphere.

##### Convection

- The air in contact with the earth upsurgues vertically on heating in the form of currents and transfers the heat of the atmosphere.
- This vertical heating of the atmosphere is known as convection.
- The convective transfer of energy is limited only to the troposphere.

##### Advection

- The transfer of heat through horizontal movement of air is called advection.
- Horizontal movement of the air is comparatively more significant than the vertical movement.
- Most of the diurnal variation in weather is caused by advection only in the middle latitudes.
- During summer in tropical regions predominantly in Northern India, local winds called 'loo' is the result of advection process.