

TERRESTRIAL (PLANETARY) WINDS – CLASS NOTES

1. Meaning of Terrestrial Winds

Terrestrial winds, also known as **planetary or permanent winds**, are large-scale air movements that blow constantly throughout the year in a particular direction over the Earth's surface. These winds are controlled by **pressure belts, Earth's rotation, and temperature differences**.

2. Causes of Terrestrial Winds

- Unequal heating of the Earth's surface
- Formation of pressure belts
- Rotation of the Earth (Coriolis force)
- Distribution of land and water

3. Types of Terrestrial Winds

(i) Trade Winds

- Blow from **subtropical high-pressure belts** to **equatorial low-pressure belt**
- Direction: North-East Trades (Northern Hemisphere) and South-East Trades (Southern Hemisphere)
- Regular and steady winds
- Important for navigation and climate

(ii) Westerlies

- Blow from **subtropical high-pressure belts** to **subpolar low-pressure belts**
- Blow from west to east
- Stronger in Southern Hemisphere (Roaring Forties)
- Bring rainfall to western margins of continents

(iii) Polar Easterlies

- Blow from **polar high-pressure belts** to **subpolar low-pressure belts**
- Cold and dry winds
- Blow from east to west

4. Importance of Terrestrial Winds

- Help in heat distribution across the Earth
- Influence global climate and weather patterns
- Affect ocean currents
- Useful in navigation and aviation

5. Difference between Terrestrial and Local Winds

Terrestrial winds are permanent and global, whereas local winds blow for a short period and affect limited areas only.

6. One-Line Exam Points

- Trade winds blow towards the equator
- Westerlies blow from west to east
- Polar easterlies are cold winds
- Coriolis force affects wind direction

7. Important Questions

1. Define terrestrial winds.
2. Explain the types of terrestrial winds.
3. Describe the role of terrestrial winds in climate regulation.