

## 2. LATITUDES & LONGITUDES

### Latitudes

- It can be defined as the angular distance measured at the centre of the Earth with respect to any point on the Earth's surface.
- These are depicted in degrees, minutes and seconds.
- Equator is on the  $0^\circ$  plane from center of Earth.
- There are several latitudes on both sides (north and south) of the equator up to the poles.
- These are imaginary circles, drawn on the surface of the Earth,
- At an interval of  $1^\circ$  in both the hemispheres making the total number of latitudes to 181.
- These are some important latitudes-
  - (a)  $0^\circ$  Latitude- It is known as Equator.
  - (b)  $23\frac{1}{2}^\circ$  N Latitude- Tropic of Cancer.
  - (c)  $23\frac{1}{2}^\circ$  S Latitude- Tropic of Capricorn.
  - (d)  $66\frac{1}{2}^\circ$  N Latitude- Arctic Circle.
  - (e)  $66\frac{1}{2}^\circ$  S Latitude- Antarctic Circle.
  - (f)  $90^\circ$  N Latitude- North Pole.
  - (g)  $90^\circ$  S Latitude- South Pole.
- Area between any two latitude is known as Zone.
- Distance between two consecutive latitude is 111 km.
- The duration of day and night is of 6 months on  $90^\circ$  latitude.

### Longitudes

- Angular distance of any place from the Prime Meridian on its east or west is called longitude.
- These are imaginary lines drawn on the surface of Earth.
- It is measured in degrees, minutes and seconds.
- The Prime Meridian at  $0^\circ$  is known as the Greenwich Line, it passes through Greenwich in London.
- There are 180 longitudes on both the sides (east and west) of the Prime Meridian.
- There are 360 longitudes in total. (On an interval of  $1^\circ$ )
- They are actually a part of **great circle**.
- The distance between two consecutive longitudes is about 111.32 km.

- Distance decreases towards the poles.
- This Distance is maximum at the equator.
- This is because longitudes taper towards the poles.
- Part of the Earth on the eastern side of the Prime Meridian is called Eastern part and on the western side of it is called Western part.
- The earth takes 4 minutes to cover  $1^\circ$  of longitude.
- Area between two longitudes is known as Gore.
- The Value of Gore at Equator is 111.32 km.

### International Date Line

- It is an imaginary line drawn at the  $180^\circ$  longitude, avoiding the continuous land parts.
- It is bent at  $75^\circ$  N latitude towards east to avoid division of Siberia and to separate Siberia and Alaska.
- Again it is bent over the Bering Strait towards west.
- When we cross it from east to west one day is gained.
- When we are going from west to east one day is lost.
- Maximum numbers of time zones are in Russia (11) then in Canada (6).
- USA has 5 time zones.

### Standard Time

- This is taken from the Meridian passing almost through middle of the country.
- Standard Time of the country is followed all over the country to avoid the inconvenience caused by the difference in local times of different places in that country.
- Indian Standard Time is taken from  $82\frac{1}{2}^\circ$  East Longitude.
- $82\frac{1}{2}^\circ$  East Longitude passing through Naini, near Allahabad (Uttar Pradesh), is the Standard Meridian of India.
- The time at this longitude is the Standard time of India, called Indian Standard Time (IST).
- Russia has 11 standard times.

