

What effects are produced due to Rotation and Revolution of Earth? Explain briefly.
(CSS 2025)

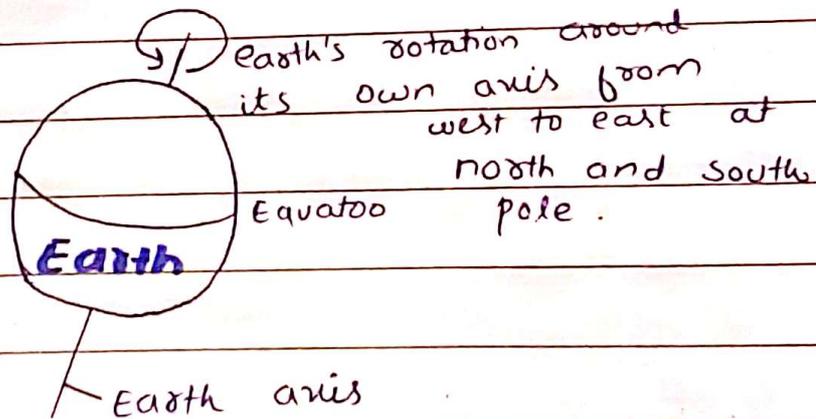
Rotation of Earth

The spinning of earth around its own axis from west to east is called rotation of earth.

→ Earth completes its one rotation in

23 hours, 56m, 4sec \approx 24 hours

→ Earth rotates around an imaginary line called the axis.



Effects due to Rotation:

1. Day and Night

Rotation causes occurrence of day and night.

When the earth side facing Sun it experience day, while opposite side experience night.

2. Difference in Local times

Rotation is basis of time zones.

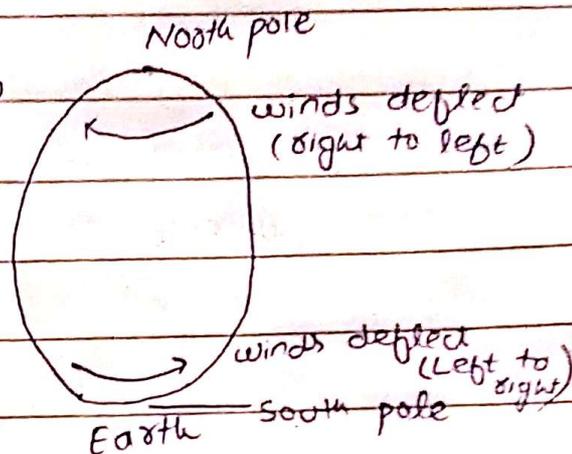
Every 15° of longitude creates 1 hour time difference.

→ This help regulate standard time globally.

3. Coriolis effect

→ Rotation causes deflection of winds and ocean currents.

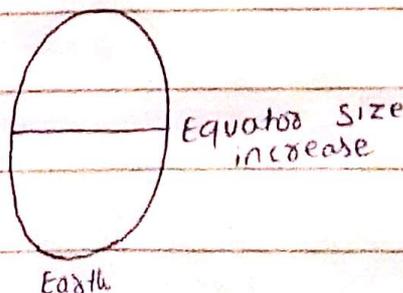
In Northern Hemisphere, winds deflect to right.



In Southern Hemisphere → winds deflect to left
→ Strong influences on weather system and cyclones.

4. Bulge on Equator

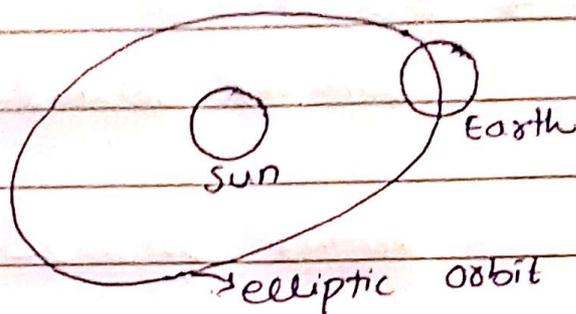
Continuous rotation causes the Earth to bulge at equator and flatten at the poles, making it an oblate spheroid



Revolution of Earth

The revolution of earth is the movement of Earth around Sun along a fixed path called elliptic orbit.

→ One complete revolution takes 365 days 5h ^{48m} ~~48s~~. The extra 6 hours is adjusted by adding one day after every 4 years, called Leap year.



→ Earths revolve around sun from West to East

Effects of Revolution of Earth:

1. Change of Seasons

Revolution of earth causes seasons.

Different part of earth receive varying amounts of sunlight throughout the year.

2. Formation of Year

Revolution form basis of Calender year - 365 days.

$$1 \text{ year} = 365 \text{ days}$$

3. Variation in Length of Day and Night

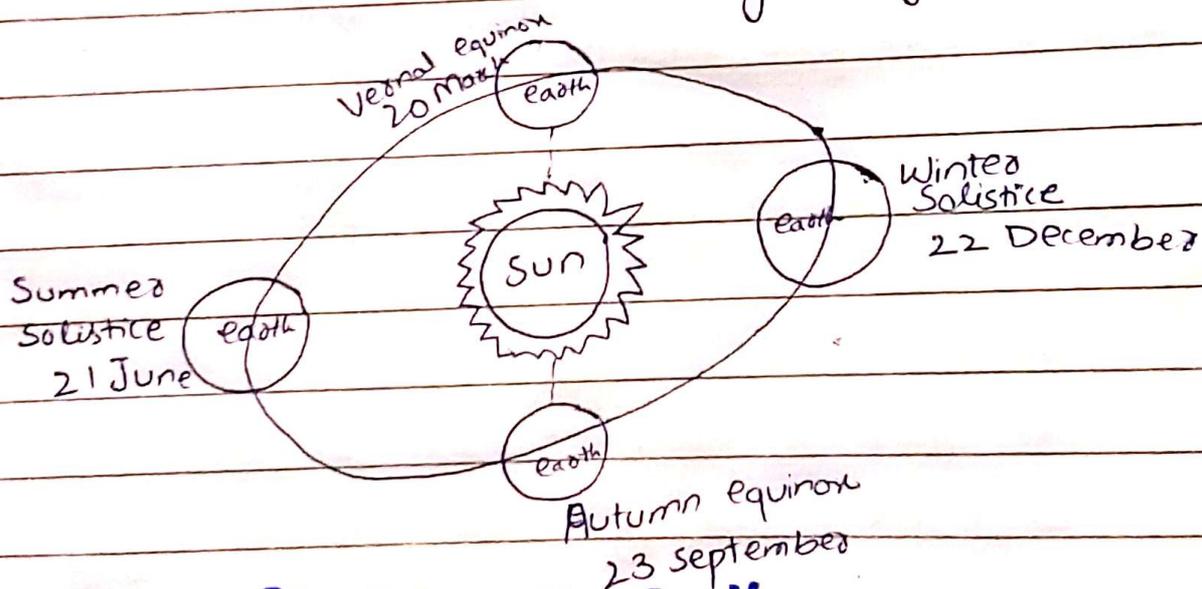
→ Days and nights are unequal during most of the year.

→ Equinox - When day and night are equal.

→ **Solstics**

Summer Solstice - 21 June Longest day and shortest night

Winter Solstice - 22 Dec Shortest day and Longest night



∴ **Revolution of Earth**

4. Heat Zones of Earth

Revolution helps create torrid, temperate and frigid zones due to changes in solar angle.

So, this is the effect of rotation
and revolution of Earth.
