

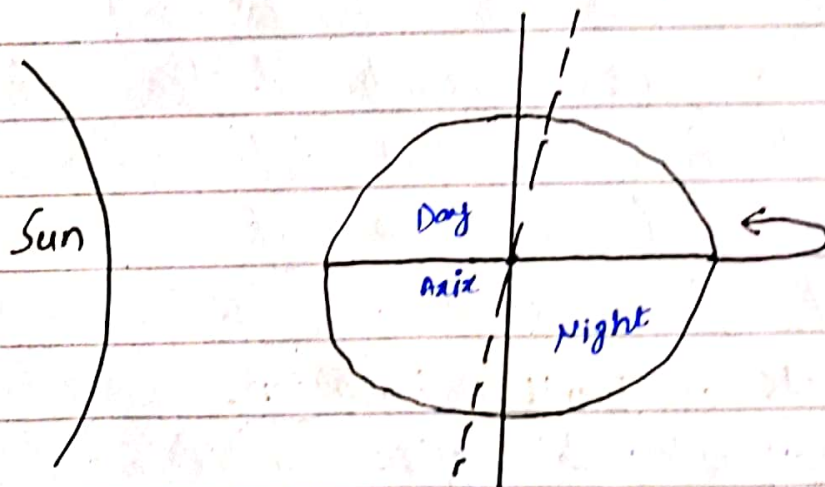
Briefly explain what effects are produced due to the rotation and revolution of Earth.

Introduction:

Rotation and Revolution are phenomena associated with celestial objects, including Earth. Understanding these phenomena is essential to grasp their various effects.

Rotation:

Rotation refers to an object's spinning motion about its own axis. For example, Earth rotates on its own axis, producing the 24-hour day.

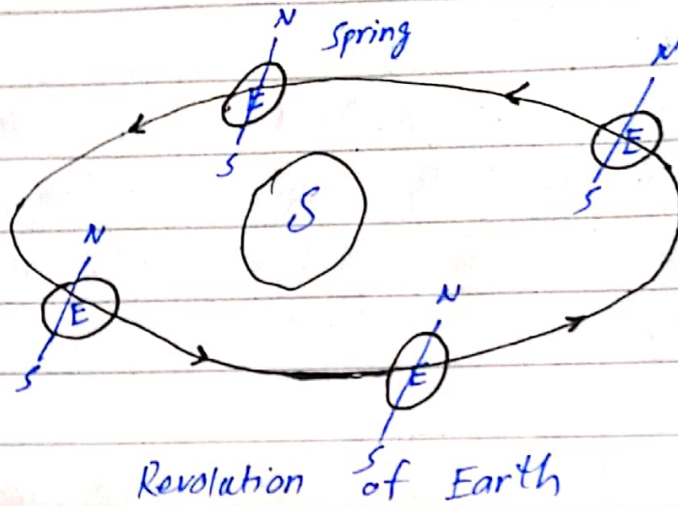


Rotation of Earth

Revolution:

Revolution refers to the object's orbital motion around another object. For example, Earth revolves about the Sun,

producing the 365-day year.



Effects Produced due to the Rotation and Revolution of Earth:

The rotation and revolution of Earth produces several significant effects that influence both natural phenomenon and human activities. Here's a brief explanation of the effects produced by each:

→ Effects of Earth's Rotation:

- i) Day and Night cycle: Earth's rotation causes the alteration of day and night as different regions face towards or away from the Sun.
- ii) Coriolis Effect: Rotation of Earth deflects moving air and water to the right in the Northern Hemisphere and to

the left in the Southern Hemisphere, influencing wind and ocean currents.

¶ iii) **Time Zones:** Earth's rotation divides the globe into time zones, with each 15-degree segment representing a one-hour time difference.

iv) **Tidal Forces:** Rotation affects the timing and height of tides caused by the gravitational pull of the Moon and the Sun.

v) **Circadian Rhythms:** The light-dark cycle from Earth's rotation regulates the biological clocks of living organisms.

→ **Effects of Earth's Revolution:**

i) **Seasons:** The tilt of Earth's axis (approximately 23.5 degrees) and its revolution around the Sun cause seasonal changes by varying sunlight intensity and duration.

ii) **Variation in Day Lengths:** Day and night lengths change throughout the year due to Earth's axial tilt and elliptical

orbit.

iii) **Solar Declination:** Earth's revolution causes the Sun's apparent movement between the Tropic of Cancer and Tropic of Capricorn, affecting climate and weather.

iv) **Annual Climate Patterns:** Earth's position in its orbit influences long-term weather and climate patterns, such as monsoon seasons.

v) **Constellation Visibility:** Different constellations become visible at different times of year due to Earth's orbit around the Sun.

Conclusion:

In summary, Earth's rotation primarily affects the daily cycle and atmospheric dynamics, while Earth's revolution is responsible for the seasonal changes and long-term climatic patterns.
