

HOTS (Higher Order Thinking Skills)

Q.1. How is the earth's axis inclined? What is its effect?

Ans. The earth's axis is inclined to the earth's orbit at an angle of about $66\frac{1}{2}^{\circ}$. Also, earth makes an angle of $23\frac{1}{2}^{\circ}$ from a line perpendicular to the plane of the orbit. It takes about 24 hours for earth to complete one rotation. The direction of rotation is west to the east. The Sun, moon and stars rise from the east and set in the west.

At any given point of time half of the earth faces the sun while half remains in dark or away from the sun. That illuminated part is called "Circle of Illumination".

Q.2. How does elliptical orbit of the earth affect it?

Ans.

- i. On 21st June, the northern hemisphere is tilted towards the sun.
- ii. The rays of the sun fall directly on the Tropic of Cancer. As a result, we receive heat. So they experience summer.
- iii. At the same time in the Southern Hemisphere, all these conditions are reversed. It is winter season there.
- iv. The nights are longer than the days here.
- v. So, a year is usually divided into summer, winter, spring and autumn seasons. Seasons change due to the change in the position of the earth around the sun.