

Subject- S.S.T Class- 6 Topic- Motions of Earth
Learn and Write

E. HOTS (Higher Order Thinking Skills) Questions

1. Why are the Sun's rays never vertical on the Arctic circle?
2. Why are days and nights at the North and the South Pole of six months' duration?

- E. 1. Due to the inclination of the Earth's axis at a fixed angle and direction, the sun's rays fall vertically on the Equator during the Spring and Autumnal Equinoxes. During the Summer Solstice, the Sun's rays fall vertically on the Tropic of Cancer and during the Winter Solstice they fall vertically over the Tropic of Capricorn. So, only those places which lie between the Tropic of Cancer and the Tropic of Capricorn receive the vertical rays of the Sun at different times throughout the year. Hence, all other places outside this region including the Arctic Circle can never receive the vertical rays of the Sun.
2. This happens due to the inclination of the Earth's axis. During the

period 23 September to 21 March falling in the next year, the North Pole is tilted away from the Sun and does not receive any light and so it is night during this period of six months. On the other hand, throughout this six month's period, the South Pole is tilted towards the Sun and therefore it is daytime. Between 21 March and 23 September the role is reversed, so it is daytime at the North Pole and night time at the South Pole for six month's duration.