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Geography Chapter 3 Motion of the Earth

Short Answer Type Questions

1. What would happen if the earth did not rotate? Imp.]
Answer: In such a condition the portion of the earth facing the sun would always experience day, and thus there would be continuous warmth in the region. At the same time the other half would always remain dark and be freezing cold all the time. These are extreme conditions which are not suitable for life. Thus, we can say that if the earth did not rotate life would not have been possible.

2. How does leap year occur? [V. Imp.]
Answer: The earth takes 36514 days Le. one year to complete one revolution around the sun. We consider a year as consisting of 365 days only and ignore six hours for our convenience. Six hours saved every year are added to make one day Le. 24 hours over a span of four years. This surplus day is added to the month of February. Thus every fourth year, February of 29 days instead of 28 days. Such a year with 366 days is called a leap year.

3. Explain the following with a diagram:
(a) Summer solstice (b) Winter solstice (c) Equinox.

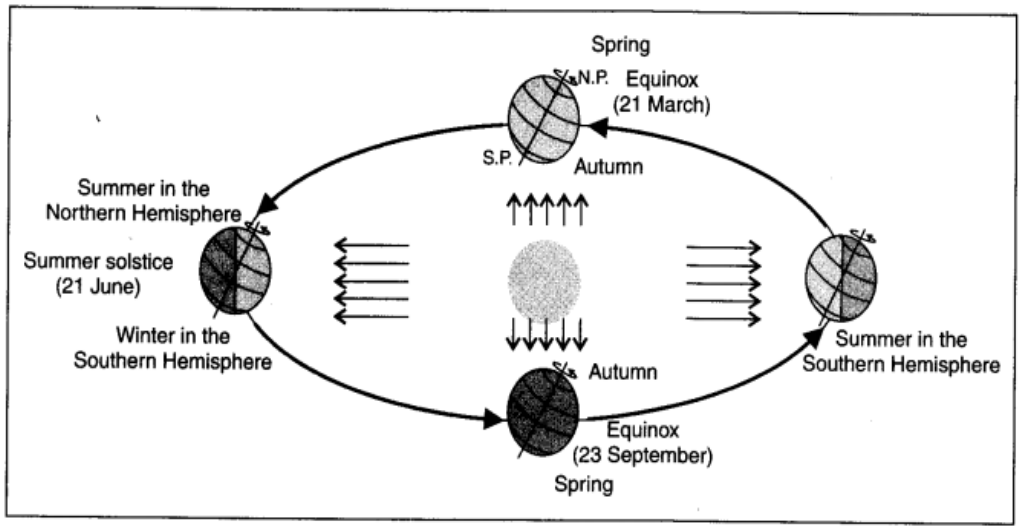

Fig. 3.2

Answer: (a) Summer solstice. The Northern Hemisphere is tilted towards the sun on 21st June. As the rays of the sun fall directly on the Tropic of Cancer, these areas receive more heat. But the areas size to the poles receive less heat due to the slanting rays of the sun. The North Pole is inclined towards the sun the places beyond the Arctic Circle experience continuous daylight for about six months. Since a large area of the Northern Hemisphere is getting light from the sun, it is summer in the regions north of the equator. The longest day and the shortest night at these places occur on 21st June. These cAnditions are reversed in the Southern Hemisphere at this time. It is winter season there having longer nights and shorter days. This position of the earth is known as the summer solstice.

(b)Winter solstice. On 22nd December, the Tropic of Capricorn receives direct rays of the sun as the South Pole tilts towards it. As the sun's rays fall vertically at the Tropic of Capricorn, a larger portion of the Southern Hemisphere gets light. Hence, the Southern Hemisphere enjoys summer having longer days and shorter nights. This position of the earth is called the winter solstice.

(c)On 21st March and 23rd September direct rays of the sun fall on the equator. At this position, neither of the poles is tilted towards the sun. As result, the entire earth experiences equal days and equal nights. This phenomenon is known as an equinox.