



Q.1 Answer the following questions:

1. What is the angle of inclination of the Earth's axis with its orbital plane?

Answer: The angle of inclination is the angle made by the axis of the earth which is an imaginary line, with its orbital plane. The angle of inclination of the Earth's axis with its orbital plane is 66.5° .

2. Define rotation and revolution.

Answer: Rotation: Rotation is the movement of the earth on its axis. A single rotation of the Earth takes about 24 hours or one day.

Revolution: The movement of the earth around the sun in a fixed path or orbit is called Revolution. It takes the Earth 365 days to complete its revolution around the sun.

3. What is a leap year?

Answer: The earth takes 365 days and 6 hours to complete one revolution. These extra 6 hours are added after four years ($6 \times 4 = 24$) to make one extra day, this extra day is added in the month of February. Therefore, every fourth year has 366 days having 29 days in February month which is called a leap year.

4. Differentiate between the summer and Winter Solstice.

Answer: Summer Solstice - Every year, 21st June is the longest day and shortest night of summer season in the Northern Hemisphere as the North pole is tilted towards the Sun and Sun rays fall directly on the Tropic of Cancer. This position of the earth is called Summer Solstice.

Winter Solstice - 22nd December is the shortest day and longest night of winter season in Northern Hemisphere. It is the time when Tropic of Capricorn receives direct rays from the sun as the south pole tilts towards the sun and the Southern Hemisphere experiences summer season. This position of the earth is called the Winter Solstice.

5. What is an equinox?

Answer: Equinox is the position of the Earth when the Sun rays fall directly on the Equator. At this position, neither of the poles is tilted towards the Sun. As a result, the entire Earth has equal days and equal nights. This phenomenon occurs on 21st March and 23rd September.

6. Why does the Southern Hemisphere experience winter and Summer Solstice in different times than that of the Northern Hemisphere?

Answer: When the North Pole is tilted towards the Sun, the Northern Hemisphere experiences Summer Solstice. At this time, as the South Pole is tilted away from the Sun, the Southern Hemisphere experiences Winter Solstice. When the North Pole is tilted away from the Sun, the Northern Hemisphere experiences Winter Solstice. At this time, as the South Pole is tilted towards the Sun, the Southern Hemisphere experiences Summer Solstice.

7. Why do the Poles experience about six months day and six months night?

Answer: The two Poles experience nearly six months of day and six months of night because of the tilt of the Earth on its axis. Because of this tilt, each pole is tilted towards and away from the Sun for about six months each.

When the North Pole is tilted towards the Sun, it experiences continuous daylight for six months. At the same it is night period at the South Pole. These conditions are reversed when the South Pole is tilted towards the Sun.

Q.2. Tick the correct answer.

(a) The movement of the earth around the sun is known as

(i) Rotation (ii) Revolution (iii) Inclination

Ans: (ii) Revolution

(b) Direct rays of the sun fall on the equator on

(i) 21 March (ii) 21 June (iii) 22 December

Ans: (ii) 21 June

(c) Christmas is celebrated in summer in

(i) Japan (ii) India (iii) Australia

Ans: (iii) Australia

(d) Cycle of the seasons is caused due to

(i) Rotation (ii) Revolution (iii) Gravitation

Ans: (ii) Revolution

Q.3. Fill in the blanks.

1. A leap year has 366 numbers of days.
2. The daily motion of the earth is rotation.
3. The earth travels around the sun in elliptical orbit.
4. The sun's rays fall vertically on the Tropic of Cancer on 21st June.
5. Days are shorter during winter season.