

1. Answer the following questions briefly.

- (a) What is the angle of inclination of the Earth's axis with its orbital plane?
- (b) Define rotation and revolution.
- (c) What is a leap year?
- (d) Differentiate between the Summer and Winter Solstice.
- (e) What is an equinox?
- (f) Why does the Southern Hemisphere experience Winter and Summer Solstice at different times than that of the Northern Hemisphere?
- (g) Why do the poles experience about six months of day and six months of night?

Answer 1.

- (a) The angle of inclination of the Earth's axis with its orbital plane is $66\frac{1}{2}^{\circ}$.
 - (b) The movement of the Earth on its axis is called rotation. The movement of the Earth around the Sun in a fixed path or an orbit is called revolution.
 - (c) Every fourth year, February has 29 days instead of 28 days. Such a year with 366 days is called a leap year.
 - (d) **Summer Solstice** – When the Southern Hemisphere experiences the winter season, and it is summer in the Northern Hemisphere. At that point in time, the position of the Earth on 21st June is called the Summer Solstice.
- Winter Solstice** – When the Southern Hemisphere experiences the summer season, and the reverse occurs in the Northern Hemisphere. At that point in time, the position of the Earth on 22nd December is called the Winter Solstice.
- (e) 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. Therefore, the whole Earth experiences equal days and equal nights. This is called an equinox.
 - (f) The Earth is always revolving, and it is divided into two hemispheres. The part of the Earth which faces the Sun experiences summer, and the part away from the Sun experiences winter. Therefore, the Southern Hemisphere experience Winter and Summer Solstice at different times than the Northern Hemisphere.
 - (g) The Poles experience 6 months of day and six months of night due to the inclination of the Earth on its own axis. This inclination keeps one pole towards the Sun and another pole away from the Sun for 6 months each. This is the reason behind this condition.

2. Tick the correct answers.

(a) The movement of the Earth around the Sun is known as

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

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

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

(c) Christmas is celebrated in summer in

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

(d) Cycle of the seasons is caused due to

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

Answer 2.

a. (ii) Revolution

b. (i) 21 March

c. (iii) Australia

d. (ii) Revolution

3. Fill in the blanks.

(a) A leap year has _____ days.

(b) The daily motion of the Earth is _____.

(c) The Earth travels around the Sun in _____ orbit.

(d) The Sun's rays fall vertically on the Tropic of _____ on 21st June.

(e) Days are shorter during _____ season.

Answer 3.

(a) A leap year has **366** days.

(b) The daily motion of the Earth is **rotation**.

(c) The Earth travels around the Sun in **an elliptical** orbit.

(d) The Sun's rays fall vertically on the Tropic of **Cancer** on 21st June.

(e) Days are shorter during the **winter** season.