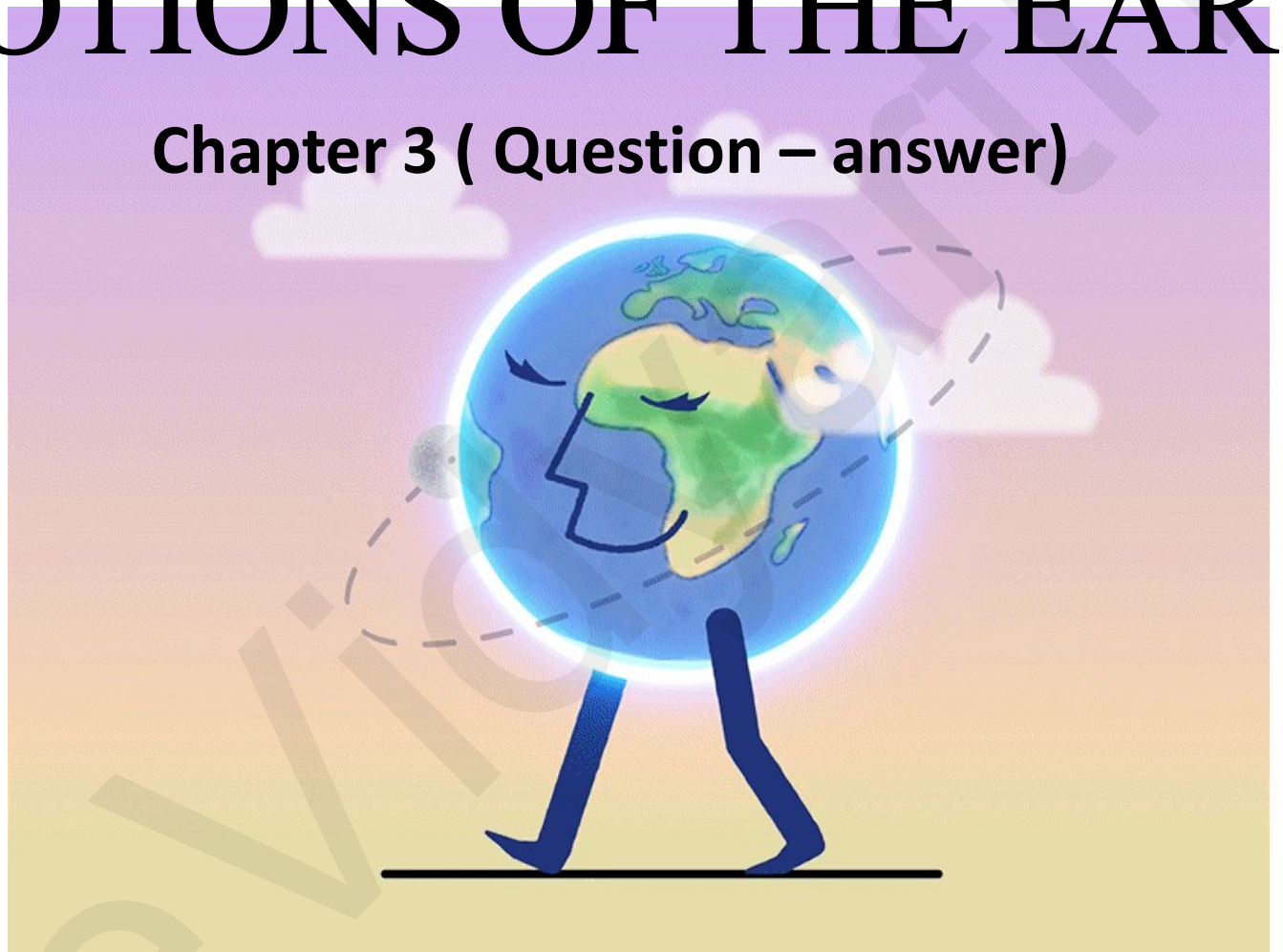
MOTIONS OF THE EARTH

Chapter 3 (Question – answer)



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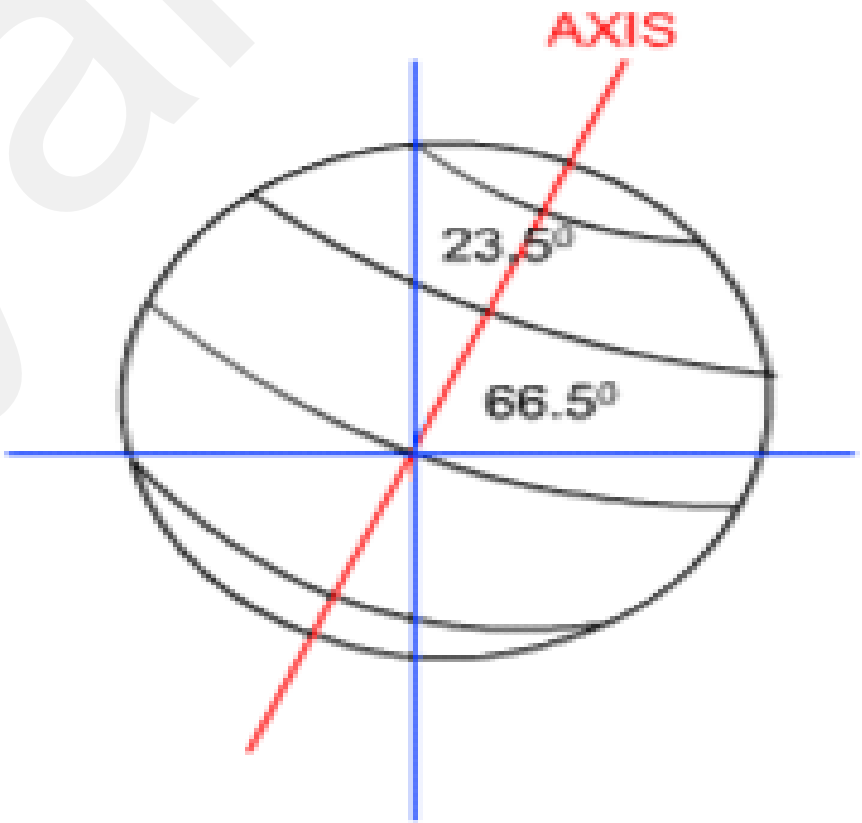
1. Answer the following questions briefly.

(a) What is the angle of inclination of the earth's axis with its orbital plane?

Ans: The angle of inclination of the earth's axis with its orbital plane is 66.5°.



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(b) Define rotation and revolution.

Ans:

- **Rotation** - The movement of the earth on its axis is known as rotation.

Rotation

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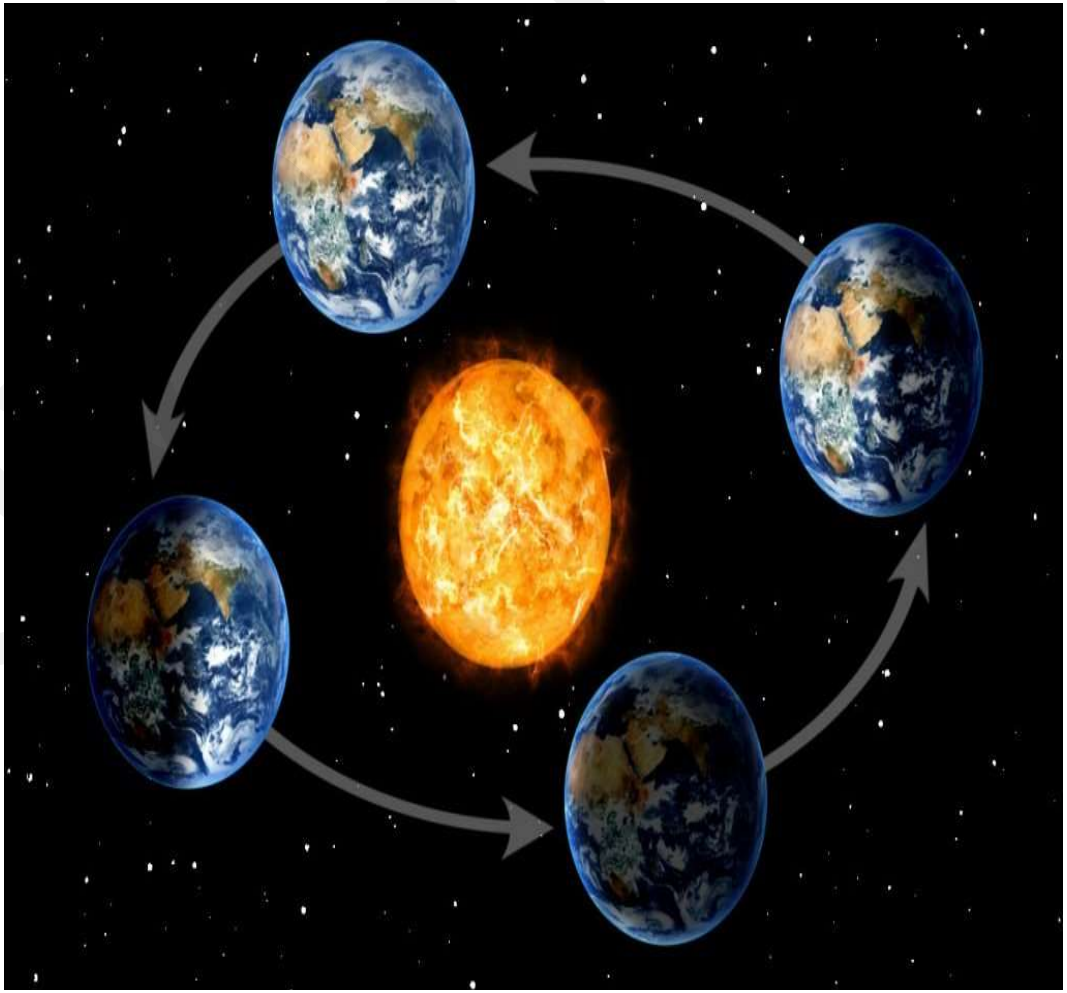
- **Revolution** - The movement of the earth around the sun in a fixed path or orbit is known as revolution.



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(c) What is a leap year?

Ans: The year in which February is of 29 days instead of 28 days is called a leap year. Thus a leap year is of 366 days instead of 365 days.

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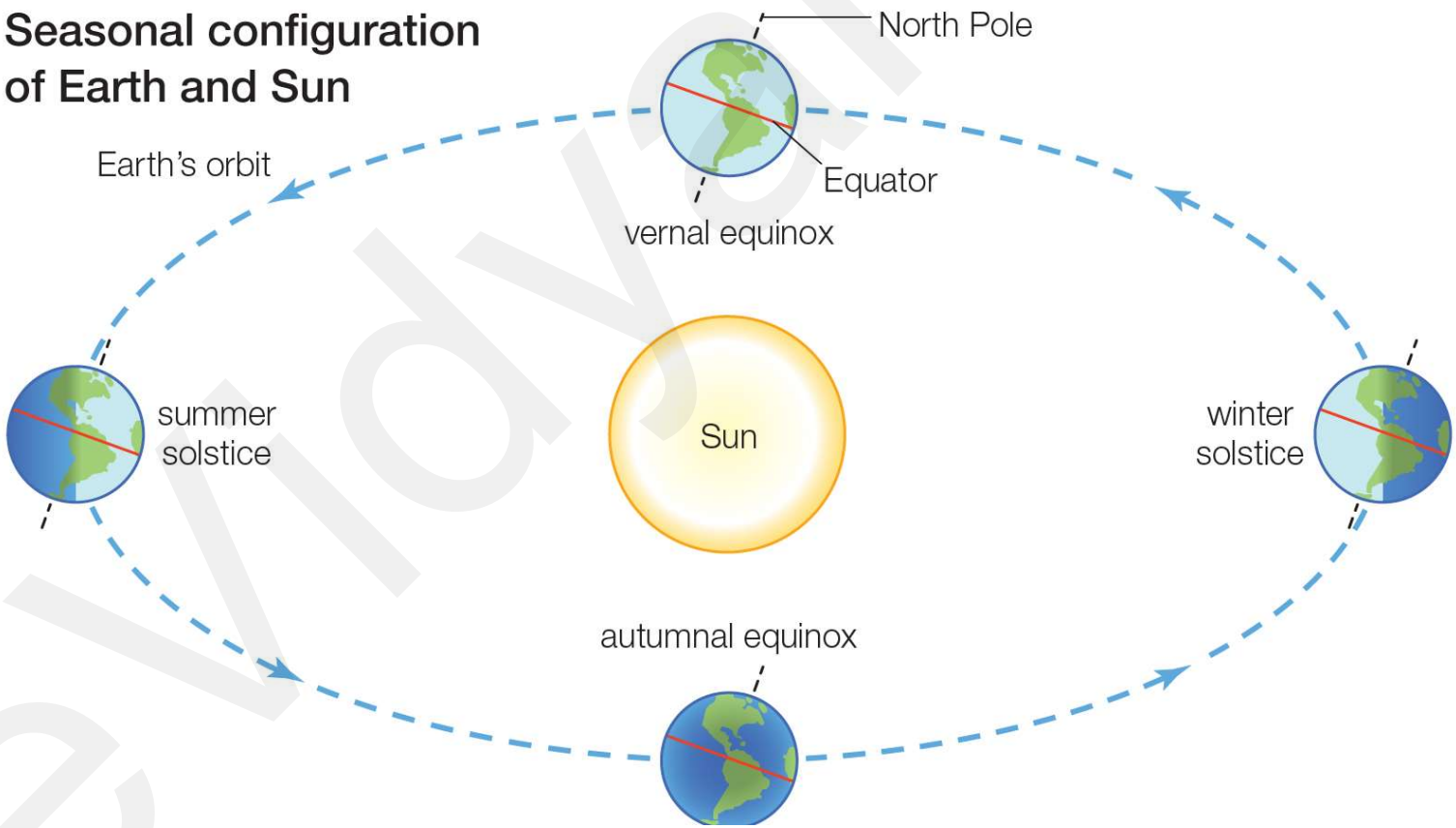
(d) Differentiate between the summer solstice and winter solstice.

Ans:



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❖ Difference between summer solstice and winter solstice -

Summer solstice	Winter solstice
• In the Northern Hemisphere the longest day & the shortest night occur on 21st June. At this time in the Southern Hemisphere it occurs the shortest day and the longest night.	• In the Northern Hemisphere the shortest day and the longest night occur on 22nd December. At this in the Southern Hemisphere it occurs the longest day and the shortest night.

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Summer solstice	Winter solstice
• This position of the earth is called summer solstice.	• This position of the earth is known as winter solstice.

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(e) What is an equinox?

Ans: On 21st March and September 23rd, direct rays of the sun fall on the equator. At this position, neither of the poles is tilted towards the sun. Therefore, the entire earth experiences equal days and equal nights. This phenomenon is called an equinox.

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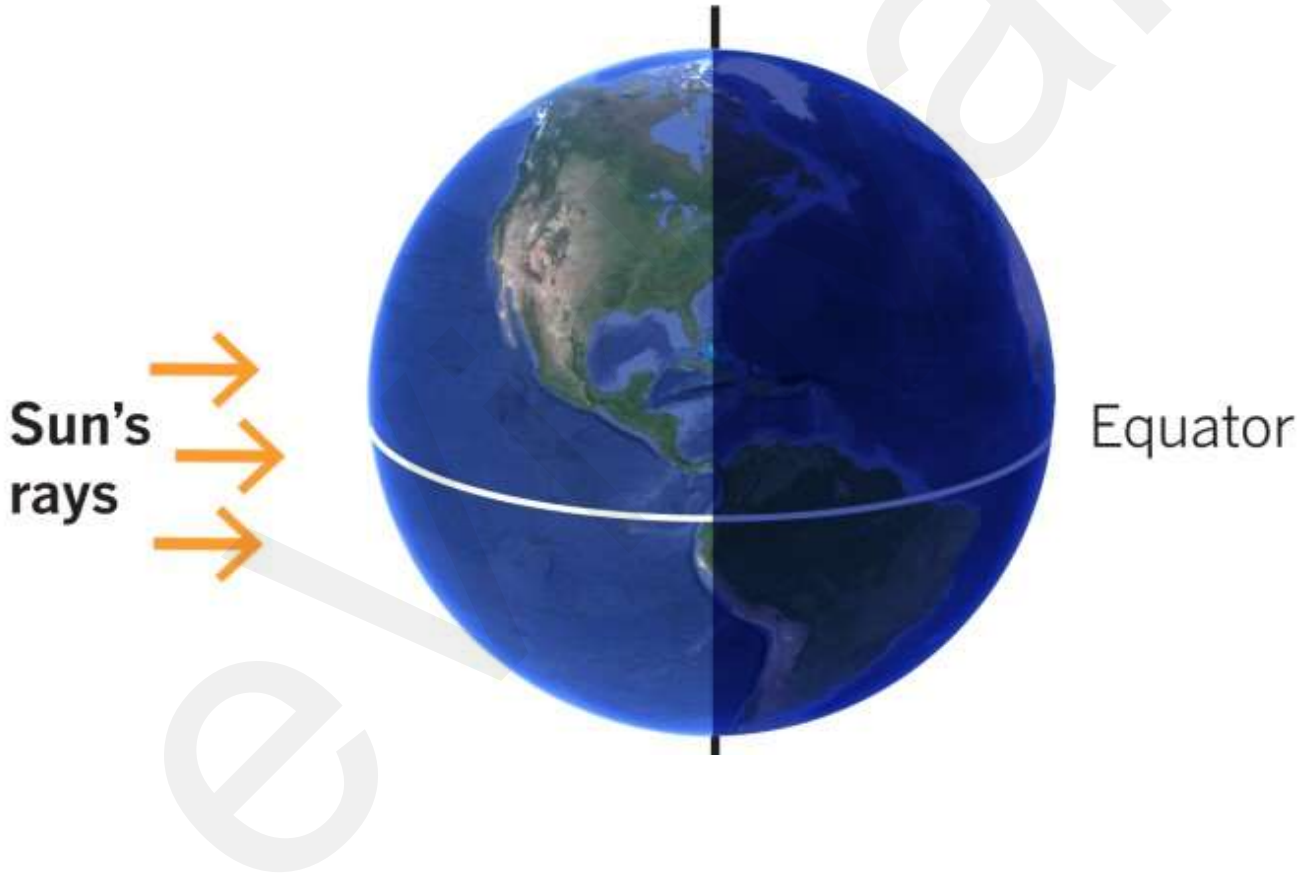
The equinoxes

At the March and September equinoxes, the noonday sun is directly overhead at the equator.

Equinox



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(f) Why does the Southern Hemisphere experience winter and summer solstice in different times than that of the Northern Hemisphere?

Ans: Since it is winter in the Southern Hemisphere when it is summer in the Northern Hemisphere, therefore the position of the earth 'which is called the Winter Solstice in one Hemisphere is the Summer Solstice in the other, and vice-versa.

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(g) Why do the poles experience about six months day and six months night?

Ans: The axis of the earth is tilted, due to which the sun continuously either shines or cannot be seen for a long time here. Although the earth rotates and day changes into night and night into day at other places, but the poles remain under the same stage for a much longer time due to the tilt.

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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

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

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

Ans: (ii) 21 June

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(d) The cycle of the seasons is caused due to

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

Ans: (ii) Revolution

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(c) Christmas is celebrated in summer in

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

Ans: (iii) Australia

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3. Fill in the blanks.

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

(a) (b)The daily motion of the earth is **Rotation .**

(b) (c)The earth travels around the sun in **An orbit**

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

(a) (e)Days are shorter during **winters.**

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Ans:

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