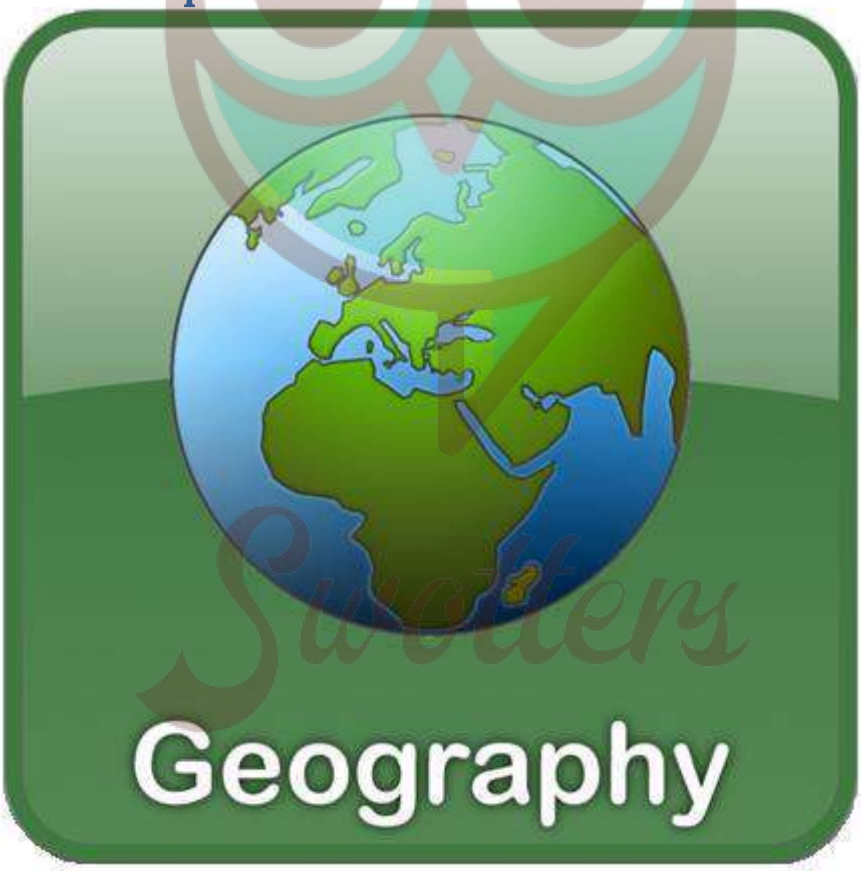
# GEOGRAPHY

## Chapter 3: Motions of the Earth



# Important Questions

## ➢ Multiple Choice Questions:

**Question 1. In Australia Christmas is celebrated in the season:**

**(a Winter**

**(b) Summer**

**(c) Spring**

**(d) Autumn**

**Question 2. In the revolution, motion of the Earth around the Sun in its orbit completed in:**

**(a) 365 days**

**(b) 366 days**

**(c) 365 ¼days**

**(d) 367 days**

**Question 3. The axis of Earth is inclined:**

**(a) 23 ½°**

**(b) 66 ½°**

**(c) 22 ½°**

**(d) 10°**

**Question 4. In the leap year excess one day is added in the month of:**

**(a) January**

**(b) February**

**(c) March**

**(d) April**

**Question 5. Direct rays of the Sun fall on the equator on:**

**(a) 21 March**

**(b) 21 June**

**(c) 22 December**

**(d) 21 September**

**Question 6. An equinox happens each year**

**(a) Thrice**

**(b) Four times**

(c) Twice

(d) Once

Question 7. The sun's rays fall vertically on the _____ on 21st. June

(a) Arctic Circle

(b) Tropic of Cancer

(c) Tropic of Capricorn

(d) Antarctic Circle

Question 8. In perihelion, Helios means

(a) Hydrogen

(b) Light

(c) Hemisphere

(d) Sun

Question 9. How much time does the earth take time to complete its rotation?

(a) 22

(b) 23

(c) 24

(d) 20

Question 10. Earth receive light from the

(a) Moon

(b) Mars

(c) Sun

(d) Venus

Question 11. In leap year, the month of February has

(a) 31 days

(b) 29 days

(c) 30 days

(d) 28 days

Question 12. Earth's movement around sun is called

(a) Rotation

(b) Revolution

(c) Solstice

**(d) Equinox**

**Question 13. The earth takes _____ to complete one revolution**

**(a) 365 days and 9 hours**

**(b) 365 days and 8 hours**

**(c) 365 days and 7 hours**

**(d) 365 days and 6 hours**

**Question 14. How many Solstices are there in every year**

**(a) 2**

**(b) 3**

**(c) 5**

**(d) 4**

**Question 15. The sun rays are vertical over the _____ during _____**

**(a) Tropic of Capricorn, equinox**

**(b) Tropic of cancer, winter solstice**

**(c) Tropic of Capricorn, summer solstice**

**(d) Tropic of cancer, summer solstice**

## ➢ Fill in the blanks:

1. The earth receives light from _____.
2. The earth takes about _____ to complete one rotation around its axis.
3. The period of rotation is known as the _____.
4. n 23rd September, it is _____ season in the Northern Hemisphere and _____ season in the Southern Hemisphere.
5. The portion facing the sun experiences _____ while the other half away from the sun experiences _____.
6. The axis of the earth makes an angle of _____ degree with its orbital plane.
7. Australia lies in _____ Hemisphere.
8. The longest day and the shortest night at these places occur on _____.

## ➢ Write true (T) or false (F):

1. Axis of the earth is an imaginary line about which the earth rotates.
2. Earth takes exactly 365 days to revolve around the sun.
3. Day and Night on the Earth occurs due to rotation of the Earth.

4. On 21st march, the Tropic of Capricorn receives direct rays of the sun as the South Pole tilts towards it.
5. Every fourth year, February is of 29 days instead of 28 days.
6. When there is spring in the Northern Hemisphere and summer in the Southern Hemisphere.

## ➢ Very Short Questions:

1. When Christmas is celebrated in Australia?
2. Which motion of the earth causes change in seasons?
3. What is the shape of the Earth?
4. How long does it take the earth to complete one rotation around its axis?
5. When do the sun rays fall directly on the equator?
6. Why areas near the poles receive less heat?
7. What causes change in seasons?
8. Why do seasons occur?
9. Why days and nights are not of equal length?
10. Define rotation and revolution of the Earth.

## ➢ Short Questions:

1. How is the rotation of the Earth responsible for causing day and night?
2. Why the southern hemisphere celebrates Christmas in summers?
3. What are the effects of the earth's revolution?
4. What do you understand by the term autumn equinox?
5. What is winter Solstice?

## ➢ Long Questions:

1. Why do the poles experience about six months day and six month night?
2. Why both hemispheres experience different winter and summer solstice?
3. What is a leap year?
4. Distinguish between summer solstice and winter solstice?
5. Explain the following terms.

# ANSWER KEY –

## ➢ Multiple Choice Answer:

1. (b) Summer
2. (c) 365 ¼days
3. (b) 66 ½°
4. (b) February
5. (b) 21 June
6. (c) Twice
7. (b) Tropic of Cancer
8. (d) Sun
9. (c) 24
10. (c) Sun
11. (b) 29 days
12. (b) Revolution
13. (d) 365 days and 6 hours
14. (a) 2
15. (d) Tropic of cancer, summer solstice

## ➢ Fill in the blanks:

1. the sun
2. 24 hours
3. earth day
4. autumn, spring
5. day, night
6. 66½
7. Southern
8. 21st June

## ➢ Write true (T) or false (F):

1. True
2. False
3. True

4. False
5. True
6. False

## ➢ Very Short Answer:

1. Christmas is celebrated in Australia in the summer season.
2. Revolution of the earth causes change in seasons.
3. Earth is spherical in shape.
4. The earth takes about 24 hours to complete one rotation around its axis.
5. On 21st March and September 23rd, direct rays of the sun fall on the equator.
6. The areas near the poles receive less heat as the rays of the sun are slanting.
7. Seasons change due to the change in the position of the earth around the sun.
8. The seasons are caused by the tilt of the Earth's rotational axis away or toward the sun as it travels around the sun in its orbit.
9. Days and nights are not equal length because of the inclined axis of the earth. As earth is tilted at an angle of 23.4°, days are longer in summers than in winters.
10. **Rotation:** Movement of the Earth on its axis in nearly 24 hours is termed as rotation. It is also called the daily movement of the earth.

## ➢ Short Answer:

1. The Earth rotates on its axis from West to East and completes it in 24 hours. When the Earth rotates, the half portion facing the sun causes day and the other half remains in darkness causing night. Thus, day and night is a continuous phenomenon because of the rotation.
2. On 22nd December, the Tropic of Capricorn receives direct sun rays due to the tilt of South Pole towards it. As the sun rays are vertical on it, hence it has summers. Therefore, Christmas which falls on 25th December is celebrated in summers in the Southern hemisphere.
3. **Results of the Earth revolution are:**
   - The phenomenon of seasons is caused.
   - It causes variation in the length of day and night.
   - It also causes variation in the distribution of heat over the surface of the earth.
4. On September 22nd or 23rd in the northern hemisphere, when night and day are nearly of the same length and Sun crosses the equator moving southward. And in the southern hemisphere on 20th or 21st March, Sun crosses the equator moving northward it is

known as autumn equinox.

5. The position of the earth when it is winter season in Northern Hemisphere and summer season in Southern Hemisphere is called Winter Solstice.

## ➢ Long Answer:

1. The axis of the earth remains inclined permanently in the same position. Because of this reason the sun continuously either shines or cannot be visible for a long time near the poles. The earth rotates causing day and night at other places but remain either dark or lighted for much longer time due to the tilt. Due to this reason, the areas near the poles experience six months day and six months night.

2. During May, June and July, the northern hemisphere is exposed to more direct sunlight because the hemisphere faces the sun. The same is true of the southern hemisphere in November, December and January. This is due to the tilt of the Earth. So June, July and August are the hottest months in the northern hemisphere and December, January and February are the hottest months in the southern hemisphere.

3. The earth takes 365¼ days (one year ) to revolve around the sun. We consider a year as consisting of 365 days only and ignore six hours for convenience. These six hours saved every year are added to make one day i.e. 24 hours over a span of four years. This surplus day is added to the month of February. Thus, every fourth year, February is of 29 days instead of 28 days. Such a year with 366 days is called a leap year.

4.

| Summer solstice | Winter solstice |
|---|---|
| On 21st June, the Northern Hemisphere is tilted towards the sun. | On 22nd December, the Tropic of Capricorn receives direct rays of the sun as the South Pole tilts towards it. |
| Sun shines vertically on the Tropic of cancer. | Sun shines vertically on the Tropic of Capricorn |
| North pole is inclined towards the sun and the south pole is away from it. | South pole is inclined towards the sun and the north pole is away from it. |

5. **Rotation:** Rotation is the movement of the earth on its axis.

**Revolution:** The movement of the earth around the sun in a fixed path or orbit is called revolution.

**Orbital Plane:** The plane formed by the orbit is known as orbital plane.

**Circle of illumination:** The portion facing the sun experiences day while the other half away from the sun experiences night. The circle that divides the day from night on the globe is called the circle of illumination.

**Leap year:** A year with 366 days is called a leap year.

**Equinox:** 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; so, the whole earth experiences equal days and equal nights. This is called an equinox.