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# Earth, Moon, and the Sun

1. The Earth rotates from \_\_\_\_\_ to \_\_\_\_\_.
2. One rotation of Earth takes about \_\_\_\_\_ hours.
3. Day and night are caused by Earth's \_\_\_\_\_.
4. The Pole Star appears nearly \_\_\_\_\_ in the sky.
5. Earth completes one revolution in about \_\_\_\_\_ days.
6. Seasons occur due to the \_\_\_\_\_ of Earth's axis.
7. The longest day occurs on the \_\_\_\_\_ solstice.
8. A solar eclipse occurs on a \_\_\_\_\_ moon day.
9. Lunar eclipse occurs on a \_\_\_\_\_ moon day.
10. Stars appear to move due to Earth's \_\_\_\_\_.

## MULTIPLE CHOICE QUESTIONS

Q1. The Earth completes one rotation on its axis in about

- a) 12 hours  
b) 24 hours  
c) 30 hours  
d) 365 days

Q2. The apparent daily movement of the Sun across the sky is due to

- a) Revolution of the Earth  
b) Rotation of the Sun  
c) Rotation of the Earth  
d) Revolution of the Moon

Q3. Sunrise occurs earlier in the eastern parts of India because

- a) Earth rotates from west to east  
b) Earth rotates from east to west  
c) The Sun moves faster in the east  
d) The eastern region is closer to the Sun

Q4. Which of the following remains nearly stationary in the night sky?

- a) Sirius                                      b) Orion  
c) Big Dipper                                d) Pole Star

Q5. Seasons on the Earth are caused mainly due to

- a) Change in distance between Earth and Sun  
b) Rotation of the Earth  
c) Tilt of Earth's axis  
d) Presence of the Moon

Q6. The longest day in the Northern Hemisphere occurs around

- a) 21 March  
b) 23 September  
c) 21 June  
d) 22 December

Q7. A solar eclipse occurs when

- a) The Earth comes between the Sun and the Moon  
b) The Moon comes between the Sun and the Earth  
c) The Sun comes between the Earth and the Moon  
d) The Moon blocks the stars

Q8. Which of the following is the correct sequence during a lunar eclipse?

- a) Sun – Moon – Earth
- b) Earth – Sun – Moon
- c) Sun – Earth – Moon
- d) Moon – Sun – Earth

Q9. It is safe to observe which of the following with naked eyes?

- a) Total solar eclipse
- b) Partial solar eclipse
- c) Lunar eclipse
- d) Transit of Venus

Q10. Different constellations are seen in the night sky in different months because

- a) Stars change their positions
- b) The Earth revolves around the Sun
- c) The Sun revolves around the Earth
- d) The Moon changes its orbit

### ASSERTION – REASON

Q1. Assertion (A): The Sun appears to rise in the east and set in the west.

Reason (R): The Earth rotates from west to east.

Q2. Assertion (A): Day and night occur due to the revolution of the Earth.

Reason (R): The Earth completes one revolution around the Sun in about 365 days.

Q3. Assertion (A): The longest day in India occurs around 21 June.

Reason (R): On this day, the Northern Hemisphere receives sunlight for more than 12 hours.

Q4. Assertion (A): A solar eclipse can occur only on a new moon day.

Reason (R): The Moon comes between the Sun and the Earth on a new moon day.

Q5. Assertion (A): It is safe to look at the Sun directly during a solar eclipse.

Reason (R): The Moon blocks the sunlight completely during a solar eclipse.

### SHORT ANSWER QUESTIONS

Q1. What is rotation?

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q2. What causes day and night on the Earth?

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q3. What is revolution?

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q4. Why does the Pole Star appear stationary in the sky?

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q5. What causes seasons on the Earth?

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q6. What is a solar eclipse?

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### LONG ANSWER QUESTIONS

Q1. Explain how day and night occur on the Earth.

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q2. Describe the rotation of the Earth and explain its effects.

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q3. Why does sunrise occur earlier in the eastern parts of India than in the western parts?

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q4. Explain why we see different stars and constellations in different months of the year.

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q5. Explain the cause of seasons on the Earth.

Ans: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Q6. What is a solar eclipse? Describe its types.

Ans: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Q7. Why should we never look directly at the Sun during a solar eclipse?

Ans: \_\_\_\_\_

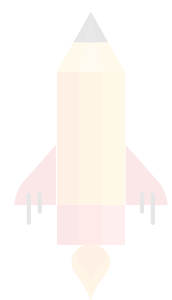
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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**Answers****FILL IN THE BLANKS**

- |               |           |             |               |              |
|---------------|-----------|-------------|---------------|--------------|
| 1. West, East | 2. 24     | 3. rotation | 4. stationary | 5. 365       |
| 6. tilt       | 7. summer | 8. new      | 9. full       | 10. rotation |

**MULTIPLE CHOICE QUESTIONS**

1. b
2. c
3. a
4. d
5. c
6. c
7. b
8. c
9. c
10. b

**ASSERTION – REASON**

Q1. Ans. Both A and R are true, and R is the correct explanation of A

Q2. Ans. A is false, but R is true

Q3. Ans. Both A and R are true, and R is the correct explanation of A

Q4. Ans. Both A and R are true, and R is the correct explanation of A

Q5. Ans. A is false, but R is true

**SHORT ANSWER QUESTIONS**

Q1. Answer:

Rotation is the spinning of the Earth on its own imaginary axis that passes through the North Pole and the South Pole. During rotation, every part of the Earth moves in a circular path around this axis.

Q2. Answer:

Day and night are caused by the rotation of the Earth. The side of the Earth facing the Sun experiences day, while the side away from the Sun experiences night. As the Earth rotates, places move alternately into sunlight and darkness.

Q3. Answer:

Revolution is the movement of the Earth around the Sun in a fixed path called an orbit. While revolving, the Earth also continues to rotate on its axis.

Q4. Answer:

The Pole Star appears stationary because the Earth's axis of rotation points almost directly towards it. As a result, other stars seem to move around the Pole Star, while it remains fixed in position.

Q5. Answer:

Seasons occur due to the tilt of the Earth's axis and its spherical shape. As the Earth revolves around the Sun with its axis tilted, different parts of the Earth receive different amounts of sunlight during the year.

Q6. Answer:

A solar eclipse occurs when the Moon comes between the Sun and the Earth and blocks sunlight from reaching a part of the Earth. It can be total or partial depending on how much of the Sun is covered.

**LONG ANSWER QUESTIONS**

Q1. Answer:

Day and night occur due to the rotation of the Earth on its axis.

- The Earth is spherical in shape.
- At any given time, only one half of the Earth faces the Sun and receives sunlight. This part experiences day.
- The other half of the Earth, which does not receive sunlight, experiences night.
- The Earth rotates from west to east and takes about 24 hours to complete one rotation.
- As the Earth rotates, a place moves from the dark side into sunlight (sunrise) and later moves back into darkness (sunset).

Thus, the continuous rotation of the Earth causes the regular cycle of day and night.

Q2. Answer:

Rotation is the spinning motion of the Earth on its own imaginary axis, which passes through the North Pole and the South Pole.

- The Earth rotates from west to east.
- One complete rotation takes about 24 hours.

Effects of Earth's rotation:

- Causes day and night
- Makes the Sun, Moon, and stars appear to move across the sky
- Causes sunrise in the east and sunset in the west
- Results in time difference between different places on Earth

Thus, rotation is responsible for many daily natural phenomena observed on Earth.

Q3. Answer:

Sunrise occurs earlier in the eastern parts of India because the Earth rotates from west to east.

- As the Earth rotates eastward, eastern locations come into sunlight before western locations.
- Therefore, places like Arunachal Pradesh experience sunrise earlier than places like Gujarat.
- This difference in sunrise time is observed all over the world and is the basis for time zones.

Hence, the direction of Earth's rotation causes earlier sunrise in the east.

Q4. Answer:

We see different stars and constellations in different months due to the revolution of the Earth around the Sun.

- The Earth revolves around the Sun in about 365 days and 6 hours.
- While revolving, the Earth also rotates on its axis.
- As the Earth moves to different positions in its orbit, the direction in which we look into space at night changes.

Therefore, different constellations become visible in different seasons.

For example, some constellations visible in winter are not seen in summer nights.

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Q5. Answer:

Seasons on the Earth are caused due to:

- Tilt of the Earth's axis
- Spherical shape of the Earth
- Revolution of the Earth around the Sun
- The Earth's axis is tilted and remains tilted in the same direction while revolving.
- When the Northern Hemisphere is tilted towards the Sun, it receives more direct sunlight for longer hours, causing summer.
- When it is tilted away from the Sun, it receives less sunlight for shorter hours, causing winter.
- The Southern Hemisphere experiences opposite seasons at the same time.

Thus, seasons are not caused by distance from the Sun but by the tilt of Earth's axis.

Q6. Answer:

A solar eclipse occurs when the Moon comes between the Sun and the Earth and blocks the sunlight partially or completely from reaching the Earth.

Types of solar eclipse:

Total Solar Eclipse

- The Moon completely covers the Sun.
- The area under the Moon's shadow experiences darkness during daytime.

Partial Solar Eclipse

- The Moon covers only a part of the Sun.
- Only partial sunlight is blocked.

Solar eclipses occur only on new moon days.

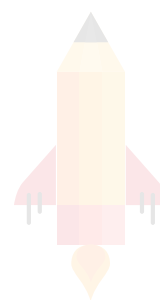
Q7. Answer:

- We should never look directly at the Sun during a solar eclipse because:
- The Sun emits extremely intense rays.
- Even during an eclipse, the Sun's light can damage the retina of the eyes.
- Direct viewing may cause permanent blindness.
- Sunglasses, binoculars, or telescopes do not provide safe protection.

Safe methods include using special eclipse glasses or observing projections arranged by planetariums.



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