



INDIAN SCHOOL AL WADI AL KABIR



CLASS: VII	DEPARTMENT: SCIENCE 2025 - 26	DATE: 10/02/2026
WORKSHEET NO: 14 WITH ANSWERS	TOPIC: EARTH, MOON AND THE SUN	NOTE: A4 FILE FORMAT
NAME OF THE STUDENT:	CLASS & SEC:	ROLL NO.

I. OBJECTIVE-TYPE QUESTIONS:

1. A city experiences longer days and shorter nights in June. This is mainly due to:
 - (a) Faster rotation of the Earth
 - (b) Earth being closer to the Sun
 - (c) Tilt of the Earth's axis towards the Sun
 - (d) Change in Earth's shape
2. A place near the Equator remains warm throughout the year mainly because:
 - (a) It is closer to the Sun
 - (b) It receives slanting rays
 - (c) It receives direct rays of the Sun
 - (d) The days are longer
3. A person standing near the poles sees the Sun very low in the sky. This is because:
 - (a) The Sun is farther away
 - (b) The Earth's rotation is slow there
 - (c) The Sun's rays are highly slanting
 - (d) The poles receive less sunlight
4. A solar eclipse occurs when:
 - (a) 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) Earth's shadow falls on the Sun

5. Which of the following best explains why the seasons and length of daytime are reversed in the Southern Hemisphere compared to the Northern Hemisphere?

- (a) The Earth's axis is tilted, causing opposite hemispheres to receive different amounts of sunlight.
- (b) The Earth rotates in the opposite direction there.
- (c) The Southern Hemisphere is farther from the Sun.
- (d) The Sun moves from north to south during the year.

6. An observer notices that the Sun appears to set in the west every day and that the pattern of stars visible after sunset changes over the months. Which motions of the Earth are responsible for these observations?

- (a) Only the rotation of the Earth
- (b) Only the revolution of the Earth
- (c) Rotation of the Moon and revolution of the Earth
- (d) Both rotation and revolution of the Earth

7. The Earth's axis of rotation is an imaginary line that passes through:

- (a) The geographic North Pole and the geographic South Pole
- (b) The geographic East to geographic West
- (c) Equator
- (d) None of these

For the following questions, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii), and (iv) as given below:

- i) Both A and R are true, and R is the correct explanation of the assertion.*
- ii) Both A and R are true, but R is not the correct explanation of the assertion.*
- iii) A is true, but R is false.*
- iv) A is false, but R is true*

8. Assertion (A): The Northern Hemisphere experiences summer in June.

Reason (R): During June, the Northern Hemisphere is tilted towards the Sun and receives more direct sunlight for a longer duration.

9. **Assertion (A):** A solar eclipse occurs every month.

Reason (R): The shadow of the Moon falls on a small area on the surface of the Earth during solar eclipse.

10. **Assertion (A):** When viewed from the top of the North Pole, the Earth is rotating in the anti-clockwise direction, that is, from West to East.

Reason (R): The Earth completes one rotation in about 24 hours.

II. VERY SHORT ANSWER TYPE QUESTIONS (2 M):

1. During night sky observation, why does the Big Dipper (Saptarishi) appear to change its position after every two hours?

[Hint: The apparent movement of the Big Dipper is due to the rotation of the Earth on its axis. As the Earth rotates, stars appear to move across the sky, even though their actual positions remain fixed.]

2. Why does the Pole Star (Dhruva Tara) appear almost stationary in the night sky while other stars seem to move around it?

[Hint: The Earth's axis of rotation points very close to the Pole Star in the Northern Hemisphere. As the Earth rotates from west to east, the Pole Star appears nearly stationary, while other stars appear to move around it.]

3. Give reason:

a) While sitting on a merry-go-round rotating in an anti-clockwise direction, surrounding objects appear to move in the clockwise direction.

[Hint: The objects appear to move in the opposite direction because the observer is rotating along with the merry-go-round. This apparent motion is due to the rotation of the observer, not because the objects are actually moving.]

b) Sunrise occurs earlier in the eastern part of India than in the western part.

[Hint: The Earth rotates from west to east. Due to this rotation, the eastern part of India comes into sunlight first, causing sunrise to occur earlier there than in the western part.]

4. How does the rotation of the Earth cause the day–night cycle?

[Hint: As the Earth rotates on its axis, a place moves from sunlight into darkness and back again, producing day and night.]

5. Define Orbit.

[Hint: The path an object takes while revolving around another object is called its orbit.]

6. Write the difference between the rotation of the Earth and the revolution of the Earth.

[Hint: Rotation of Earth -Spinning of Earth on its own axis. Earth takes 24 hours to complete one rotation.

Revolution of Earth – Movement of Earth around the Sun. Earth takes 365 days and 6 hours to complete one revolution around the sun.]

III. SHORT ANSWER TYPE QUESTIONS (3M):

1. How can the change in the night sky be observed without using a telescope?

[Hint: The change can be observed by watching the pattern of stars at a fixed time of the night on days separated by a month. The visible star patterns change because of the Earth's revolution around the Sun.]

2. Besides latitude, what other factors can influence seasonal patterns in a region?

[Hint: Apart from latitude, local geographical features such as mountains and plateaus, and proximity to oceans or seas influence seasonal patterns. These factors can affect temperature and rainfall in a region.]

3. Give Reason.

a) Seasonal changes are not very prominent in the southern states of India.

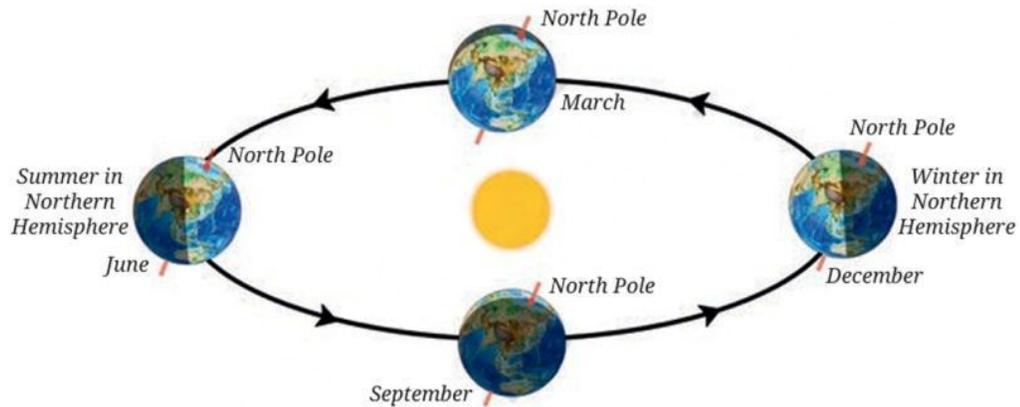
[Hint: The southern states of India lie close to the Equator. They receive nearly equal sunlight throughout the year with little change in intensity. Therefore, the effect of seasons is not very prominent.]

b) Regions near the Equator experience nearly equal day and night throughout the year.

[Hint: Regions near the Equator receive sunlight for about 12 hours and darkness for about 12 hours throughout the year. The intensity of sunlight falling on the Equator does not change much in different months. Hence, day and night are nearly equal all year.]

4. Draw a neat labelled diagram of different positions of the Earth while revolving around the Sun.

[Hint:



5. Explain why the Northern Hemisphere experiences summer in June and winter in December.

[Hint: In June, the Northern Hemisphere is tilted towards the Sun. The Sun's rays fall more directly over a smaller area for more than 12 hours. This causes more heating for a longer duration, resulting in summer.

In December, the Northern Hemisphere is tilted away from the Sun. The Sun's rays fall slanting and for a shorter duration. As a result, less heat is received, causing winter.]

IV. LONG ANSWER TYPE QUESTIONS (5M):

1. Explain the differences between a solar eclipse and a lunar eclipse.

[Hint:

SOLAR ECLIPSE	LUNAR ECLIPSE
1. Occurs when the Moon comes between the Sun and the Earth.	1. Occurs when the Earth comes between the Sun and the Moon.
2. The Moon's shadow falls on the Earth.	2. The Earth's shadow falls on the Moon.
3. Not safe to view directly with the naked eye.	3. Safe to view with the naked eye.
4. Can be total or partial and lasts for a few minutes at a place.	4. Can be total or partial and may last for a few hours.

V. SOURCE-BASED/ CASE STUDY-BASED QUESTIONS

Read the passage and answer the following questions:

The Earth has two important motions—rotation and revolution. Rotation is the spinning of the Earth on its own axis from west to east. The Earth takes about 24 hours to complete one rotation,

which causes the cycle of day and night. When a part of the Earth faces the Sun, it experiences day, and when it turns away from the Sun, it experiences night. The axis is an imaginary line passing through the North Pole and the South Pole, around which the Earth rotates.

In addition to rotation, the Earth also moves around the Sun in a fixed path called revolution. The Earth takes about $365\frac{1}{4}$ days to complete one revolution, which results in a year. The tilt, combined with revolution, causes the change of seasons and variation in the length of day and night at different times of the year. Without the tilt of the axis, all places on Earth would have nearly equal days and nights throughout the year.

i) How does the tilt of the Earth's axis affect seasons and the length of day and night?

[Hint: The tilt of the Earth's axis causes the change of seasons and variation in the length of day and night at different times of the year.]

ii) What is the revolution of the Earth, and how much time does the Earth take to complete one revolution around the Sun??

[Hint: Revolution is the movement of the Earth around the Sun in a fixed path. The Earth takes about $365\frac{1}{4}$ days to complete one revolution.]

iii) What is meant by the rotation of the Earth, and how long does the Earth take to complete one rotation?

[Hint: Rotation is the spinning of the Earth on its own axis from west to east. The Earth takes about 24 hours to complete one rotation.]

ANSWERS FOR OBJECTIVE TYPE QUESTIONS (1 TO 10):

1. (c) Tilt of the Earth's axis towards the Sun.
2. (c) It receives direct rays of the Sun.
3. (c) The Sun's rays are highly slanting.
- 4.(b) The Moon comes between the Sun and the Earth.
5. (a) The Earth's axis is tilted, causing opposite hemispheres to receive different amounts of sunlight.
6. (d) Both rotation and revolution of the Earth.
7. (a) The geographic North Pole and the geographic South Pole.
- 8- i) Both A and R are true, and R is the correct explanation of the assertion.
- 9- iv) A is false, but R is true.
- 10-ii) Both A and R are true, but R is not the correct explanation of the assertion.

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