परमाणु ऊर्जा शिक्षण संस्था
Atomic Energy Education Society

ANSWER KEY (2025-26)

कक्षा/Class: VII **विषय/Subject: Science**
अंक/Marks: 40 **माह/Month: October** **दिया गया**
पाठ्यक्रम/Portion covered: Chapter 12: Earth, Moon and the Sun

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SECTION – A

Choose the correct answer from the given options. (1x10 = 10M)

1. b) 24 hours
2. b) The Earth's rotation on its axis
3. b) From West to East
4. b) The Moon moves between the Earth and the Sun
5. b) Due to the tilt of the Earth's axis
6. b) The Earth rotates from West to East
Explanation: The Sun appears to move across the sky from East to West because the Earth rotates on its axis from West to East. This rotation makes the Sun seem to rise in the east, move across the sky, and set in the west - even though it's actually the Earth that's spinning.
7. c) Axis of rotation
Explanation: The Earth rotates around an imaginary line that passes through its North and South Poles. This line is called the axis of rotation.

- The orbit is the path Earth takes around the Sun.
- The equator is an imaginary line dividing Earth into Northern and Southern Hemispheres.
- The meridian refers to lines of longitude on Earth's surface.

8. b) It is close to the Earth's axis of rotation
Explanation: The Pole Star (Polaris) appears nearly stationary in the sky because it lies almost directly above the North Pole, along the Earth's axis of rotation. As the Earth rotates from west to east, other stars seem to move in circular paths around Polaris, but Polaris itself appears fixed in the same position.
9. b) 365 days and 6 hours
Explanation: The Earth takes about 365 days and 6 hours (approximately one year) to complete one full revolution around the Sun.
The extra 6 hours each year add up to one extra day every four years, which is why we have a leap year with 366 days.
10. c) Orbit
Explanation: The Earth moves around the Sun in a fixed, slightly elliptical path called an orbit.

- The axis is the imaginary line around which Earth rotates.
- The equator divides Earth into the Northern and Southern Hemispheres.
- The meridian refers to lines of longitude running from pole to pole.

Assertion (A) and Reason (R) questions (1x4=4M)

11. a)
Assertion (A): True, Reason (R): True
Reason (R) correctly explains Assertion (A).
Explanation: A total solar eclipse occurs when the Moon completely covers the Sun as seen from Earth. This happens because the apparent sizes (angular diameters) of the Moon and the Sun in the sky are nearly the same - even though the Sun is about 400 times larger, it is also about 400 times farther away from Earth. Hence, their apparent sizes appear similar, allowing the Moon to cover the Sun completely during a total solar eclipse.
12. a) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A).
13. b) Both A and R are true, but R is not the correct explanation of A. (The change in seasons is caused by the tilt of the Earth's axis, not just its revolution).
14. a) Both A and R are true, and R is the correct explanation of A.

15. Case Based Questions (1x4=4M)

i) Looking directly at the Sun can damage the eyes and cause blindness.
ii) The Moon comes between the Earth and the Sun, blocking the Sun’s light.
iii) By joining eclipse viewing events organised by astronomy clubs or planetaria as they provide specialised eye protection for viewing eclipse.
iv) Solar eclipse

SECTION - B

Short Answer Type Questions (Type-I): (2x5=10 M)

1. The apparent motion of the Sun is caused by the Earth's rotation around its axis.
2. Different seasons occur due to the tilt of the Earth's axis while it revolves around the Sun.
3. A solar eclipse occurs when the Moon passes between the Earth and the Sun, blocking the Sun’s light.
4. A lunar eclipse occurs when the Earth passes between the Sun and the Moon, casting a shadow on the Moon.
5. The Earth rotates from West to East.

Short Answer Type Questions (Type-II): (3x4=12 M)

1. Day and night occur because the Earth rotates on its axis. As the Earth rotates, one half of the planet faces the Sun, experiencing daylight, while the other half is in darkness, experiencing nighttime. This rotation takes approximately 24 hours, causing a complete cycle of day and night.

2. A solar eclipse occurs when the Moon passes between the Earth and the Sun, blocking the Sun's light. The Moon's shadow falls on the Earth, causing a temporary period of darkness. Depending on the alignment, it can be a total solar eclipse, where the Sun is completely blocked, or a partial solar eclipse, where only a part of the Sun is obscured.
3. The tilt of the Earth's axis, combined with its revolution around the Sun, causes different parts of the Earth to receive varying amounts of sunlight at different times of the year. This variation in sunlight results in the four seasons: spring, summer, autumn, and winter, each with different lengths of days and nights.
4. As the Earth rotates on its axis, the stars appear to move across the sky. In the Northern Hemisphere, stars appear to move in a circular path around the North Star. This motion is due to the Earth's rotation, which gives the illusion that the stars are moving from east to west.