परमाणु ऊर्जा शिक्षण संस्था

Atomic Energy Education Society

Answer Key (2025 -2026)

कक्षा / **Class :** VIII विषय / **Subject :** SCIENCE

Worksheet of chapter 11 - KEEPING TIME WITH THE SKIES

School - AECS KUDANKULAM

I. Multiple Choice Questions

1. a) Rotation of Earth
2. b) 24 hours
3. a) 23.5°
4. c) 22 December
5. b) One revolution around the Sun
6. b) Sundial
7. b) 4 years
8. b) Revolution of the Moon around Earth
9. d) Time zone
10. b) Axis

II. Assertion–Reason Questions

1. (a) Both A and R are true, and R explains A.
2. (c) A is false, R is true. (Day and night are due to rotation, not revolution.)
3. (a) Both A and R are true, and R explains A.
4. (b) Both A and R are true, but R does not explain A.

III. Case-Based Question

a) Due to tilt of Earth’s axis and revolution around the Sun.
b) Revolution of Earth around the Sun.
c) Northern Hemisphere tilted toward the Sun — longest day.
d) Because the Sun’s rays fall equally on both hemispheres.

IV. Short Answer Type – I

1. New Moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Last Quarter, Waning Crescent.

2. We could measure time by: Observing the position of the Sun (sunrise, noon, sunset). Using the phases of the Moon to count months. Tracking stars and constellations that change with the seasons. Using natural events, like plant flowering or animal behaviour, to mark the passage of time.

3. Most Indian festivals are based on the phases of the Moon and are decided according to the lunar or luni-solar calendars, not the regular Gregorian solar calendar that we use daily. A lunar month is about 29.5 days, and a lunar year (12 lunar months) has about 354 days, which is 11 days shorter than the solar year of 365 days. Because of this difference, festivals like Diwali, Holi, Eid-ul-Fitr, and Buddha Purnima, which follow the Moon's phases, appear on different Gregorian calendar dates each year.

4.Artificial satellites are launched for:
Communication, Navigation,Weather monitoring, Scientific research, Disaster management,Earth observation.

5. Because as the Moon revolves around the Earth, different portions of its sunlit side are visible from Earth.

V. Short Answer Type – II

1. Phases of the Moon happen due to the changing angle of sunlight on the Moon as it orbits Earth, not Earth's shadow.
Eclipses, however, are directly related to shadows:

- A solar eclipse occurs when the Moon's shadow falls on Earth.
- A lunar eclipse occurs when the Earth's shadow falls on the Moon.

2. A solar eclipse happens when the Moon passes between the Sun and Earth, casting a shadow on Earth and blocking the Sun. A lunar eclipse occurs when Earth passes between the Sun and Moon, and Earth's shadow falls on the Moon. This means solar eclipses are visible only from a small area on Earth, last for a few minutes, and happen during the day, while lunar eclipses are visible from anywhere on the night side of Earth and can last for a few hours.

3. The Moon's position in the sky and the timing of its rise and set depend on its phase.

- New Moon rises and sets with the Sun; not visible.

- The First Quarter is visible in the afternoon and early evening.
- Full Moon rises at sunset and sets at sunrise.
- Last Quarter is visible late at night and in the morning.
- As the Moon moves through its orbit, its angle with the Earth and Sun changes, which affects how much of it we see and when.

4. Waxing means the Moon is growing; the lit portion is increasing. It occurs between New Moon and Full Moon. Waning means the Moon is shrinking; the lit portion is decreasing. It occurs between Full Moon and New Moon.

- Waxing phases: Waxing Crescent, First Quarter, Waxing Gibbous
- Waning phases: Waning Gibbous, Last Quarter, Waning Crescent.