

IMPORTANT QUESTIONS

PROJECT 30 - 8TH NEW

PHYSICS

KEEPING TIME WITH THE SKIES

Q1 Which of the following is the correct order of the main moon phases?

- (A) New Moon → Full Moon → First Quarter → Last Quarter
- (B) New Moon → First Quarter → Full Moon → Last Quarter
- (C) Full Moon → New Moon → First Quarter → Last Quarter
- (D) First Quarter → Full Moon → New Moon → Last Quarter

Q2 Artificial satellites are used for all the following purposes except:

- (A) Communication
- (B) Weather forecasting
- (C) Space research
- (D) Increasing Earth's gravity

Q3 The Moon is not visible at all on the day of:

- (A) Full Moon
- (B) Half Moon
- (C) New Moon
- (D) Crescent Moon

Q4 When the illuminated part of the Moon increases night after night, it is called:

- (A) Waning phase (B) Waxing phase
- (C) Eclipse phase (D) Dark phase

Q5 The earliest calendars were mainly based on the motion of the:

- (A) Earth around the Sun
- (B) Moon around the Earth
- (C) Stars in the sky
- (D) Planets in the solar system

Q6

Which of the following is India's first artificial satellite?

- (A) INSAT-1A (B) Aryabhata
- (C) Bhaskara-I (D) Chandrayaan-1

Q7 Why were calendars important for early humans?

- (A) For decoration and art
- (B) For calculating taxes only
- (C) For predicting natural disasters
- (D) For organizing agricultural, religious, and social activities

Q8 A solar calendar is based on:

- (A) The rotation of Earth on its axis
- (B) The revolution of Earth around the Sun
- (C) The revolution of Moon around the Earth
- (D) The rotation of Sun on its axis

Q9 Which of the following statements about polar satellites is true?

- (A) They remain fixed over one point
- (B) They orbit above the equator only
- (C) They pass over both poles during each revolution
- (D) They are used only for communication

Q10 The time taken by a satellite to complete one revolution around the Earth is called:

- (A) Rotational period
- (B) Orbital period
- (C) Revolution rate
- (D) Time of travel

Q11 When the illuminated part of the Moon decreases each night, the Moon is said to be:

- (A) Waxing (B) Waning
- (C) New (D) Crescent



- Q12** The different shapes of the illuminated part of the Moon seen from Earth are called:
- (A) Lunar cycle
 - (B) Phases of the Moon
 - (C) Solar phases
 - (D) Moon eclipse
- Q13** The Moon's light is actually:
- (A) Produced by the Moon itself
 - (B) Reflected light from the Earth
 - (C) Reflected light from the Sun
 - (D) Light produced by stars
- Q14** The time taken by the Moon to complete one revolution around the Earth is approximately:
- (A) 24 hours
 - (B) 7 days
 - (C) 29.5 days
 - (D) 365 days
- Q15** An artificial satellite is:
- (A) A natural object revolving around the Earth
 - (B) A man-made object revolving around the Earth or another planet
 - (C) A star that moves around the Sun
 - (D) A meteor moving through space
- Q16** State the Difference between Waxing and Waning Phases of the Moon.
- Q17** Why does the illuminated portion of the Moon decrease when it appears closer to the Sun?
- Q18** What is the significance of celestial objects in measuring time?
- Q19** Briefly explain Lunar Calendar and Solar Calendar
- Q20** What are artificial satellites, and how do they help human activities on Earth?



Answer Key

Q1 (B)

Q2 (D)

Q3 (C)

Q4 (B)

Q5 (B)

Q6 (B)

Q7 (D)

Q8 (B)

Q9 (C)

Q10 (B)

Q11 (B)

Q12 (B)

Q13 (C)

Q14 (C)

Q15 (B)

Q16 Refer to the Solution

Q17 Refer to the Solution

Q18 Refer to the Solution

Q19 Refer to the Solution

Q20 Refer to the Solution



Hints & Solutions

Note: scan the QR code to watch video solution

Q1 Text Solution:

This is the correct sequence of the primary moon phases as the Moon revolves around Earth.

Video Solution:**Q2 Text Solution:**

Satellites are used for communication, navigation, research, defense, and forecasting, but they have no effect on Earth's gravity.

Video Solution:**Q3 Text Solution:**

On the new moon day, the Moon lies between the Earth and the Sun. The side of the Moon facing Earth is dark, so it is not visible from Earth.

Video Solution:**Q4 Text Solution:**

During the waxing phase, the visible bright part of the Moon gradually increases from new moon to full moon.

Video Solution:**Q5 Text Solution:**

The earliest calendars were lunar calendars, based on the Moon's phases. People observed that one full cycle of the Moon took about 29.5 days, which helped them count months.

Video Solution:**Q6 Text Solution:**

Aryabhata, launched by India on 19 April 1975, was India's first artificial satellite. It was named after the famous Indian mathematician and astronomer Aryabhata.

Video Solution:**Q7 Text Solution:**

Early humans used calendars to track seasons, plan agriculture, celebrate festivals, and schedule community events, making them essential for daily life and civilization development.

Video Solution:

**Q8 Text Solution:**

A solar calendar measures time based on the Earth's revolution around the Sun, which takes approximately 365 days, defining one year.

Video Solution:**Q9 Text Solution:**

Polar satellites move from pole to pole and cover almost every part of the Earth's surface during their orbits. They are useful for weather observation, mapping, and environmental monitoring.

Video Solution:**Q10 Text Solution:**

The orbital period is the time taken by a satellite to make one complete revolution around the Earth. For example, a geostationary satellite takes 24 hours.

Video Solution:**Q11 Text Solution:**

After the full moon, the visible illuminated part of the Moon starts decreasing, which is called the waning phase. It continues till the next new moon.

Video Solution:**Q12 Text Solution:**

The Moon appears in different shapes during its revolution around the Earth. These changing shapes are known as phases of the Moon, caused by the relative positions of the Earth, Moon, and Sun.

Video Solution:**Q13 Text Solution:**

The Moon does not produce its own light; it shines because it reflects the Sun's light that falls on its surface.

Video Solution:

**Q14 Text Solution:**

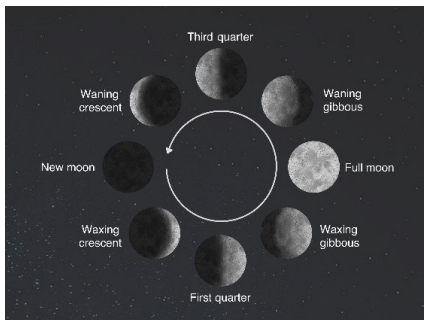
The Moon takes about 29.5 days to complete one full cycle of phases — from new moon to the next new moon. This period is called a lunar month or synodic month.

Video Solution:**Q15 Text Solution:**

An artificial satellite is a human-made object placed in orbit around the Earth or any other celestial body for communication, research, weather forecasting, and other purposes.

Video Solution:**Q16 Text Solution:**

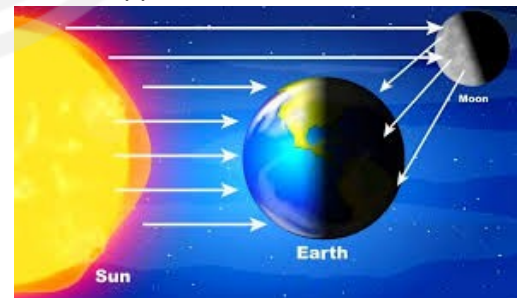
Difference between Waxing and Waning Phases of the Moon



Basis	Waxing Phase (Shukla Paksha)	Waning Phase (Krishna Paksha)
Meaning	Period during which the bright portion of the Moon increases	Period during which the bright portion of the Moon decreases
Duration	From New Moon (Amavasya) to Full Moon (Purnima)	From Full Moon (Purnima) to New Moon (Amavasya)
Change in shape	Moon grows from a thin crescent to a full circle	Moon shrinks from a full circle to a thin crescent
Time taken	About two weeks	About two weeks
Examples of phases	Waxing Crescent, First Quarter, Waxing Gibbous	Waning Gibbous, Last Quarter, Waning Crescent

Video Solution:**Q17 Text Solution:**

The illuminated portion of the Moon decreases when it appears closer to the Sun because-



- **The Moon reflects sunlight:** The Moon does not produce its own light; we only see the portion that reflects sunlight.
- **Relative positions:** The illuminated side of the Moon always faces the Sun. As the Moon orbits the Earth, its position relative to the Earth and the Sun changes, altering our viewing angle of that sunlit side.



- **Viewing angle decreases:** When the Moon is closer to the Sun in the sky from our perspective on Earth, the side of the Moon facing us is mostly in shadow, as the sunlit side is facing primarily towards the Sun and away from Earth.
- **Smaller visible portion:** As a result, a smaller portion of the Moon's illuminated surface is visible, leading to waning phases (after the full moon) and the New Moon phase when it is least visible (or nearly invisible).

Video Solution:



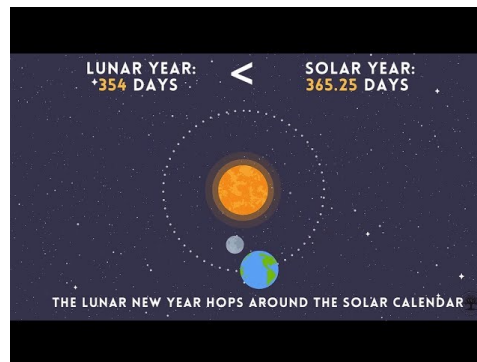
Q18 Text Solution:

Celestial objects such as the Sun, Moon, and stars have been used since ancient times to measure time. The regular rising and setting of the Sun determines day and night, while the Moon's phases help measure months. The apparent motion of stars helps track seasons and years, forming the basis of calendars.

Video Solution:



Q19 Text Solution:



Lunar Calendar-

A lunar calendar is based on the phases of the Moon. One lunar month lasts about 29.5 days, and a lunar year consists of 12 such months, making it about 354 days long. Ancient people used lunar calendars because the changing phases of the Moon were easy to observe. However, since the lunar year is shorter than the solar year, the seasons do not remain fixed in the same months each year.

Solar Calendar –

A solar calendar is based on the Earth's revolution around the Sun. One solar year is about 365 days long and is closely linked with the cycle of seasons. To maintain accuracy, an extra day is added every four years as a leap year. The Gregorian calendar, widely used today, is a solar calendar and remains well synchronised with seasons.

Video Solution:



Q20 Text Solution:

- Artificial satellites are man-made objects launched into space to orbit the Earth, usually at a height of about 800 km. They take nearly 100 minutes to complete one revolution around the Earth.
- In India, the Indian Space Research Organisation (ISRO) has launched several



satellites to provide some essential services.



How They Help Human Activities:

- **Communication:** Relay television broadcasts, phone calls, and internet signals globally, connecting people and businesses.
- **Navigation (GPS):** Provide precise location, time, and routing information for vehicles, aviation, and personal devices.
- **Weather & Climate:** Monitor atmospheric conditions, predict storms, track climate change, and provide early warnings for disasters.

- **Scientific Research:** Study Earth's geology, oceans, atmosphere, and observe distant galaxies, expanding our knowledge of the universe.
- **Disaster Management:** Help in mapping affected areas, coordinating relief efforts, and monitoring natural hazards.
- **Military & Defence:** Used for reconnaissance, signals intelligence, and early warning systems.

Video Solution:



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