

- (Q.) Write the name of first satellite of India.** (1 Mark)
(Ans) Aryabhata was the first Indian Satellite.
- (Q.) What is a natural satellite?** (1 Mark)
(Ans) A natural satellite is a heavenly body, which revolves around a planet. Moon is a natural satellite of the Earth.
- (Q.) Why do we classify the Sun as a star?** (1 Mark)
(Ans) The Sun is a huge hot celestial body having its own light. It emits heat and light like a star. So we classify the Sun as a star.
- (Q.) Which comet appears after every 76 years?** (1 Mark)
(Ans) Halley's comet appears after every 76 years.
- (Q.) Name any two artificial satellites of our country.** (1 Mark)
(Ans) Two artificial satellites of our country are
1. INSAT 3E
2. EDUSAT.
- (Q.) Name a star that always appear stationary from Earth's surface?** (1 Mark)
(Ans) Pole star lies close to the axis of rotation of the earth and so, its relative position with respect to the earth remains same.
- (Q.) What do you mean by the term phases of moon?** (1 Mark)
(Ans) The various shapes of the bright part of the moon as seen during the month are called phases of the moon.
- (Q.) What are celestial bodies?** (1 Mark)
(Ans) The stars, the planets, the moon and many other objects in the sky are called celestial bodies.
- (Q.) Why the village sky is so different from the night sky in big cities?** (1 Mark)
(Ans) In big cities due to bright light, smoke and dust, sky is not so clear as in villages.
- (Q.) The Sun rises in the east and sets in the west. Why?** (2 Marks)
(Ans) The Earth rotates from west to east around its axis. So, the Sun rises in the east and sets in the west.
- (Q.) What do you understand by light year? What is its value in km?** (2 Marks)
(Ans) Light Year: It is the distance traversed by light in vacuum in one year.
Value of one light year in km:
Distance = speed x time
So, One light year = speed of light in vacuum x time of one year (in seconds)
= $[3.0 \times 10^8 \text{ m/s}] \times [365 \times 24 \times 60 \times 60] \text{ s}$
= $9.46 \times 10^{15} \text{ m}$
= $9.46 \times 10^{12} \text{ Km}$

(Q.) What is a Pole star?

(2 Marks)

(Ans) It is the star located close to the North Pole on the axis of rotation of the earth and so, it appears stationary relative to the earth. It is also called the North Star or Dhruv Tara. It is not so bright and has no other star around it. In ancient time, sailors used the Pole star for navigation.

(Q.) What does the Solar system comprises of?

(2 Marks)

(Ans) The Solar system consists of the Sun and the celestial bodies that revolve around the Sun due to the gravitational attraction. It consists of a large number of bodies such as planets and their satellites, comets, meteors and asteroids. The Sun is the centre of the solar system.

(Q.) Give reason for

(i) Change in seasons on the earth

(ii) Different phases of moon.

(2 Marks)

(Ans) (i) Change in seasons on the earth occurs due to Earth's motion around the Sun and tilting of its axis of rotation.

(ii) The phases of moon are observed because the relative position of the Sun, Earth and the Moon changes. We can see only that part of the Moon which reflects the light of the Sun towards us.

(Q.) Which constellation is called 'Hunter'?

(2 Marks)

(Ans) The Orion constellation resembles the shape of a Hunter and hence, is named so. This constellation has seven or eight bright stars, out of which the three middle stars represent the belt of the hunter and the four bright stars appear to be arranged in the form of a quadrilateral.

(Q.) Can we hear any sound on the Moon? Explain your answer.

(2 Marks)

(Ans) No.

Moon has no atmosphere. Sound needs a material medium to propagate. So, sound cannot travel in Moon.

(Q.) What are galaxies?

(2 Marks)

(Ans) Galaxies: A galaxy is a large cluster of stars. Each galaxy contains billions of stars held together by gravitational force of attraction. Galaxies have different shapes and sizes. Our galaxy is called the Milky Way. There are about 100 billion galaxies in the universe.

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(Q.) Write short notes on Meteors and Meteorites.

(3 Marks)

(Ans) Meteors - Meteors are small stone like objects moving around the sun. Sometimes, a meteor enters the earth's atmosphere at a very high speed and burns due to friction of air. It begins to glow and evaporates within a short time. The path of the meteor appears as a streak of light in the night sky. Hence, meteors are known as shooting stars.

Meteorites – Sometimes, a part of meteors of greater size reaches the earth's surface without getting burnt. These are called meteorites.

(Q.) What is the difference between a star and a constellation?

(3 Marks)

(Ans) A star is a shining ball of glowing gases.

It is formed when a lump of hot gas condenses into a globe like form.

The glow of a star comes from the heat that is inside the star where helium gas gives out heat energy.

Group of stars arranged in a pattern is called constellations.

These patterns form the figures of animals or human beings.

All constellations appear to revolve around the pole star, which remains fixed.

All stars in constellations stay together.

Some of the constellations are Orion, Kalpurush, Great bear, Taurus, Virgo, Leo, etc

(Q.) Give one word for each

(a) Stars forming a recognisable pattern

(b) A solid body from outer space that is sometimes able to reach the earth's surface

(c) A belt of small planetoids present mainly in between the orbits of Mars and Jupiter. (3 Marks)

(Ans) (a) Constellation.

(b) Meteorite.

(c) Asteroids.

(Q.) Give some details about Moon.

(3 Marks)

(Ans) Moon is the only natural satellite of the earth. It is about one-fourth of earth size. Its gravitational pull is one sixth that of earth. It has no air or water and its surface is covered with hard and loose dirt, craters and mountains. Its days are very hot while the nights are very cold. There is no atmosphere and hence there is no life possible on Moon. Moon revolves around the earth in 27.3 day. Moon has no light of its own and reflects the sun's light.

(Q.) (i) What do you mean by solar system?

(ii) In the solar system, name the following

(a) The largest planet

(b) The smallest planet

(c) The brightest planet

(d) The planet with largest number of natural satellites.

(5 Marks)

(Ans) (i) Solar System: Solar system consists of the sun, the planets, their satellites, comets, meteors and asteroids. The sun is the centre of solar system.

(ii) In the solar system,

(a) The largest planet is Jupiter

(b) The smallest planet is Mercury

(c) The brightest planet is Venus

(d) The planet having largest number of natural satellites is Saturn (Shani) (30 Satellites).

