Lakhmir Singh Solutions For Class 8 Science Chapter 17 Stars And The Solar System

1. Name any two celestial objects which we can see easily in the night sky.

Solution:

Moon and the stars are the celestial objects which we can see easily in the night sky.

2. Name the star (after the Sun) which is closest to the Earth.

Solution:

Alpha Centauri is the star which is closest to the Earth after the Sun.

3. Name the star which remains fixed at the same place in the sky in the North.

Solution:

The pole star is the star which remains fixed at the same place in the sky in the North.

4. Name the unit which is used to express distances between the various celestial bodies (like stars and planets).

Solution:

A light-year is a unit used to express the distance between the various celestial bodies. A light-year is a distance travelled by light in one year.

5. Why is the distance between stars and planets expressed in light years?

Solution:

The distance between the Earth and stars and the distance between the stars is very large. The stars are millions of times farther away than the Sun. the Sun is nearly 150,000,000 Km. These large distances are expressed in light-years.

6. What do you understand by the statement that a star is 8 light-years away from the Earth?

Solution:

It means the distance between the star and the Earth is equal to the distance travelled by light in eight years.

7. Name the constellation which reminds us of a large ladle or a question mark in the night sky.

Solutions:

Ursa Major is the constellation which reminds us of a large ladle or a question mark in the night sky.

8. In which season of the year is the constellation Orion visible in the sky?

Solution:

The constellation Orion is visible during winter in the late evenings. It also has seven or eight bright stars.

9. In which season of the year is the constellation Ursa Major visible in the sky?

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Solution:

Ursa Major can be seen during summertime in the early part of the night. It has seven prominent stars.

10. Give two other names of Ursa Major constellation.

Solution:

Ursa Major constellation is also known as the Big Dipper, the Great Bear or the Saptarshi.

11. In which season of the year are the following constellations visible in the night sky?

(a) Cassiopeia

(b) Leo Major

Solution:

(a) Cassiopeia is another prominent constellation in the northern sky. It is visible during winter in the early part of the night.

(b) (b) Leo Major is visible in the northern hemisphere around the spring. It is easily identifiable through may.

12. Name the biggest planet of the Solar System.

Solution:

Jupiter is the biggest planet of the Solar system.

13. Name the smallest planet of the Solar System.

Solution:

Mercury is the smallest planet in the solar system which is nearest to the sun.

14. Which force keeps the members of the Solar System bound to the Sun?

Solution:

The Gravitational force keeps the members of the Solar System bound to the Sun.

15. Why does the Sun appear to be bigger and brighter than all other stars?

Solution:

The Sun is the nearest star which is continuously emitting a huge amount of heat and light. Hence, the Sun appears to be bigger and brighter than all the planets.

16. Which is the main source of heat and light energy for all the members of the Solar System (like planet and satellites, etc.)?

Solution:

The Sun is the source of almost all the energy on the Earth that emits a huge amount of light and heat.

17. Name a star having a system of planets with life on one of its planets.

Solution:

The Sun is the star having a system of planets with one planet called Earth with life on one of its planets.

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18. Name the planet having a well-developed system of rings around it.

Solution:

Saturn is the planet having a well-developed system of rings around it.

19. Name the planets which lie between the Sun and the Earth.

Solution:

Mercury and Venus are the planets which lie between the Sun and the Earth.

20. How will our Earth look when seen from a space-ship or Moon?

Solution:

When seen from a space-ship or Moon, the Earth appears blue-green. It is due to the reflection of light from the water and landmass on its surface.

21. Name the planet

(a) Nearest to the Sun, and

(b) Farthest from the Sun.

Solution:

(a) Mercury is the planet nearest to the Sun and smallest planet of our Solar System.

(b) Neptune is the farthest planet from the Sun and the fourth largest planet.

22. Name two planets which have been discovered with the help of a telescope.

Solution:

Uranus and Neptune have been discovered with the help of the telescope.

23. Name the hottest planet.

Solution:

Venus is the hottest planet of the solar system and temperature is maintained at 462℃.

24. Name two planets which show phases like the Moon.

Solution:

Mercury and Venus show phases like the Moon.

25. Name one planet of the Solar System having life on it.

Solution:

Earth is the only planet of the Solar System having life on it because it has some maintained conditions like temperature and water presence.

26. Which characteristics of Mars distinguish it from other planets?

Solution:

Mars appears slightly reddish and is also called the red planet. It has two small natural satellites.

27. Which planet is known as the red planet?

Solution:

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Mars is known as the red planet. It appears slightly reddish colour because of the presence of iron oxide on the surface

28. In which part of the sky can you find Venus if it is visible as an Evening Star?

Solution:

Venus appears in the eastern sky before sunrise. It is known as the morning star. Sometimes, it appears in the western sky just after sunset. It is known as an Evening star.

29. Which characteristic of the planet does Saturn make it unique in the Solar System?

Solution:

Saturn has rings around it which makes it unique in the Solar System.

30. Name two planets which can be seen as 'Morning Star' and 'Evening Star'.

Solution:

Mercury and Venus can be seen as 'Morning Star' and 'Evening Star'.

31. What name is given to the celestial body which revolves around a planet?

Solution:

The celestial body which revolves around a planet is known as a Satellite. Moon is a natural satellite of the Earth.

32. Which two planets have asteroids between them?

Solution:

Mars and Jupiter have asteroids between them and has a large gap between orbits.

33. Name two objects other than planets which are members of the Solar System?

Solution:

Asteroids and Comets are the two objects other than planets which are members of the Solar System.

34. Name the member of the Solar System which appears in the sky like a bright ball of light with a long glowing tail.

Solution:

Comets are the member of the Solar System which appears in the sky like a bright ball of light with a long glowing tail.

35. Which celestial body is seen as a bright streak of light coming down the night sky?

Solution:

Meteor is seen as a bright streak of light coming down the night sky.

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36. Which celestial objects are also called minor planets?

Solution:

Asteroids are the celestial objects which are also called minor planets.

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37. Name one natural and one artificial satellite of the Earth.

Solution:

Moon is the natural satellite of the Earth. Aryabhatta was the first Indian artificial satellite of the Earth.

38. Name the agency responsible for the development of space science programs in India.

Solution:

ISRO (Indian Space Research Organisation) is the agency responsible for the development of space science programs in India.

39. Name the first artificial satellite launched by India.

Solution:

Aryabhatta was the first artificial satellite launched by India.

40. Name the technique of collecting information about the Earth from an orbiting satellite.

Solution:

Artificial satellites are used for forecasting weather, transmitting television and radio signals.

41. Write the full name of INSAT.

Solution:

INSAT stands for the Indian National Satellite System. It is a series of multipurpose geostationary satellites launched by ISRO to satisfy the telecommunications, broadcasting, meteorology, and search and rescue operations.

42. Write the full name of IRS.

Solution:

IRS stands for Indian Remote Sensing satellite program.

43. Name two constellations which are visible in the sky:

(a) In the summer season.

(b) In the winter season.

Solution:

(a) Ursa Major can be seen during summertime in the early part of the night.

(b) Cassiopeia is another prominent constellation in the northern sky.

44. State whether the following statements are true or false:

(a) Constellation Orion can be seen only with a telescope.

(b) Pole Star is a member of the Solar System.

(c) Mercury is the smallest planet of the Solar System.

(d) Uranus is the farthest planet in the Solar System.

(e) There are nine planets in the Solar System.

(f) Comets are members of the Solar System.

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(g) INSAT is an artificial satellite.

Solution:

(a) False. Orion is visible in the night sky from November to February.

(b) False. Pole start is a name of Polaris in the constellation Ursa minor.

(c) True

(d) False. Neptune is the farthest planet

(e) False. There are 8 planets in the solar system.

(f) True

(g) True

45. Fill in the following blanks with suitable words:

(a) The stars appear to……in the sky.

(b) The Sun is a……..whereas Orion is a ……

(c) The group of stars that appears to form a recognizable pattern in the sky is known as…….

(d) The brightest star in the night sky is……

(e) Ursa Major constellation appears to revolve around the ……..star in the night sky.

(f) Orion constellation can be used to locate the position of ……..star whereas Ursa Major constellation can be used to locate the …….star in the night sky.

(g) The planet which is farthest from the Sun is……

(h) The planet which appears reddish is…….

(i) The small heavenly bodies revolving around the Sun between the orbits of Mars and Jupiter are called ….

(j) Asteroids are found between the orbits of ……and……

(k) Shooting stars are not……..

(l) A celestial body that revolves around a planet is known as……

(m) A meteoroid becomes a……on entering Earth's atmosphere.

(n) The long-distance transmission of television programmes has been made possible with the help of ……. satellites.

Solution:

(a) Twinkle

(b) Star and constellation

(c) Constellation

(d) Sirius

(e) Pole

(f) Sirius and pole

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(g) Neptune

(h) Mars

(i) Asteroids

(j) Mars and Jupiter

(k) Stars

(l) Satellite

(m) Meteor

(n) Artificial

Short Answer Type Questions

46. What is meant by 'celestial objects'? Name any three celestial objects.

Solution:

The stars, the planets, the moon and many other objects in the sky are called celestial objects. The Sun and the celestial bodies which revolve around it form the solar system. These celestial bodies include the planets, comets, asteroids and meteors.

47. What is a star? Name the star nearest to the Earth.

Solution:

Stars are celestial bodies that emit light of their own. Our sun is a star and which is nearest to the earth and it is the main source of heat and light for all the planets.

48. Why does Pole Star appear to be stationary in the sky?

Solution:

The pole star appears to be stationary from the Earth because it is situated close to the direction of the axis of rotation of the Earth. The Pole Star is not visible from the southern hemisphere.

49. Do all the stars in the sky move? Explain.

Solution:

Due to the motion of the earth, stars appear to move in the sky. Earth is spinning in its axis and moves around the sun. Some stars like pole star do not appear to move because it is located in the direction of the earth's axis.

50. What is a constellation? Name any two constellations.

Solution:

The stars forming a group that has a recognizable shape is called a constellation. We can easily identify them in the night sky. Ursa Major and Orion are examples of the constellations.

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