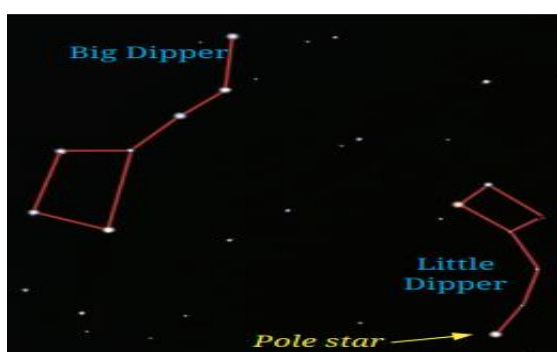


7. A portion of night sky with stars is shown in Fig. Look carefully and identify the groups of stars that form the patterns—the Big Dipper and the Little Dipper. Draw lines to connect the stars for these patterns and label them. Also, identify and label the Pole Star. You may refer to Fig. for help.



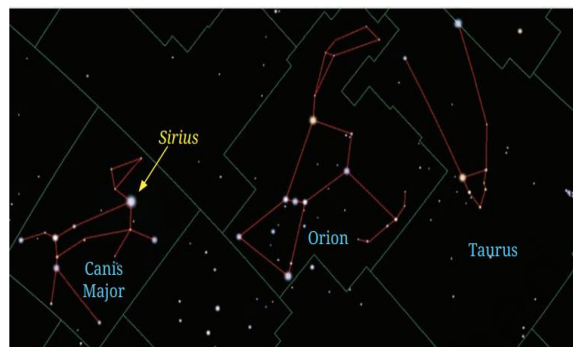
Solution



8. A portion of the night sky is shown in Fig. Draw lines to connect the stars for Orion and label the star Sirius. You may refer to figure.



Solution



9. You can see stars fading away at dawn and appearing at dusk. During the day we do not see the stars. Explain why?

Solution

We are unable to see stars during the day due to a primary reason sun's intense brightness, which overpower the light emitted by stars.

Furthermore, the bright sky during the day reduces the contrast between stars and the background rendering them invisible to the naked eye.

10. During a clear night, try to observe the Big Dipper 3–4 times at an interval of 2 to 3 hours. Also try to locate the Pole Star each time. Does the Big Dipper appear to move? Draw a rough sketch to illustrate this, mentioning the time in each case.

Solution

The Big Dipper appears to move around the Pole Star due to the rotation of the Earth. Over a few hours, its position changes, making it seem as if it is rotating around the Pole Star.

11. Think about the night sky and write a poem or a story on it.

Solution

Stars are twinkling, moon is bright.
Shining softly through the night.
The sky calms, the world is still, the night is a secret,
time to change.

EXERCISE-01

Multiple choice questions

- | | |
|--|---|
| <p>1. What was the major achievement of India's Chandrayaan 3 mission? PBY057
 (1) First successful landing on moon's north pole.
 (2) Soft landing near the moon's south pole
 (3) Discovery of light
 (4) First human mission</p> <p>2. Which planet is also known as 'Red planet'? PBY058
 (1) Jupiter (2) Mars
 (3) Saturn (4) Neptune</p> <p>3. Which constellation contains brightest star, Sirius? PBY059
 (1) Orion (2) Taurus
 (3) Ursa major (4) Ursa minor</p> <p>4. Ursa Major is PBY060
 (1) a star
 (2) seen only with telescope
 (3) constellation
 (4) satellite</p> <p>5. Which unit is used to measure astronomical distances? PBY061
 (1) Light year (2) Leap year
 (3) Kilometer (4) Sound year</p> <p>6. The stars forming a recognizable shape is called PBY062
 (1) Constellation (2) Solar system
 (3) Galaxy (4) Asteroids</p> <p>7. Which of the following does not belong to the family of solar system? PBY063
 (1) Planet (2) Galaxy
 (3) Meteors (4) Asteroids</p> | <p>8. Mercury is PBY064
 (1) smaller than the Moon
 (2) the same size as the Moon
 (3) larger than the Moon but smaller than Earth
 (4) the same size as Earth</p> <p>9. Which planet is called morning star or evening star? PBY065
 (1) Saturn (2) Mars
 (3) Jupiter (4) Venus</p> <p>10. The planet farthest from the sun is PBY066
 (1) Uranus (2) Neptune
 (3) Saturn (4) Mercury</p> <p>11. Which planet has the largest number of satellites? PBY067
 (1) Jupiter (2) Saturn
 (3) Mercury (4) Mars</p> <p>12. The Halley's Comet is seen after every PBY068
 (1) 76 months (2) 76 years
 (3) 56 months (4) 56 years</p> <p>13. Which celestial body revolves around the sun in a highly elliptical orbit? PBY069
 (1) Comet (2) Meteors
 (3) Asteroids (4) Planets</p> <p>14. Which small objects revolve between the orbits of Mars and Jupiter? PBY070
 (1) Satellites (2) Comets
 (3) Asteroids (4) Meteorites</p> <p>15. Shooting stars are also called PBY071
 (1) Asteroids (2) Galaxies
 (3) Meteors (4) Andromeda</p> <p>True or false</p> <p>1. Light pollution enhances the visibility of night sky. PBY072</p> |
|--|---|

2. Moon orbits the earth in 27.32 days. **PBY073**
3. Venus is often called morning star but it is not a star. **PBY074**
4. Sirius is also called the Hunter. The three middle stars represent the belt of the hunter. **PBY075**
5. Pole Star helps locate northern hemisphere. **PBY076**
6. An astronomical unit is the mean distance of the Earth from the Moon. **PBY077**
7. Jupiter is the least dense among all the planets. **PBY078**
8. A planet has a definite path in which it revolves around the Sun. This path is called an equatorial plane. **PBY079**
9. Pluto is no longer considered as a planet of the solar system. **PBY080**
10. Halley's comet can be seen from the Earth after every 26 years. **PBY081**

1. **Match the column** **PBY082**

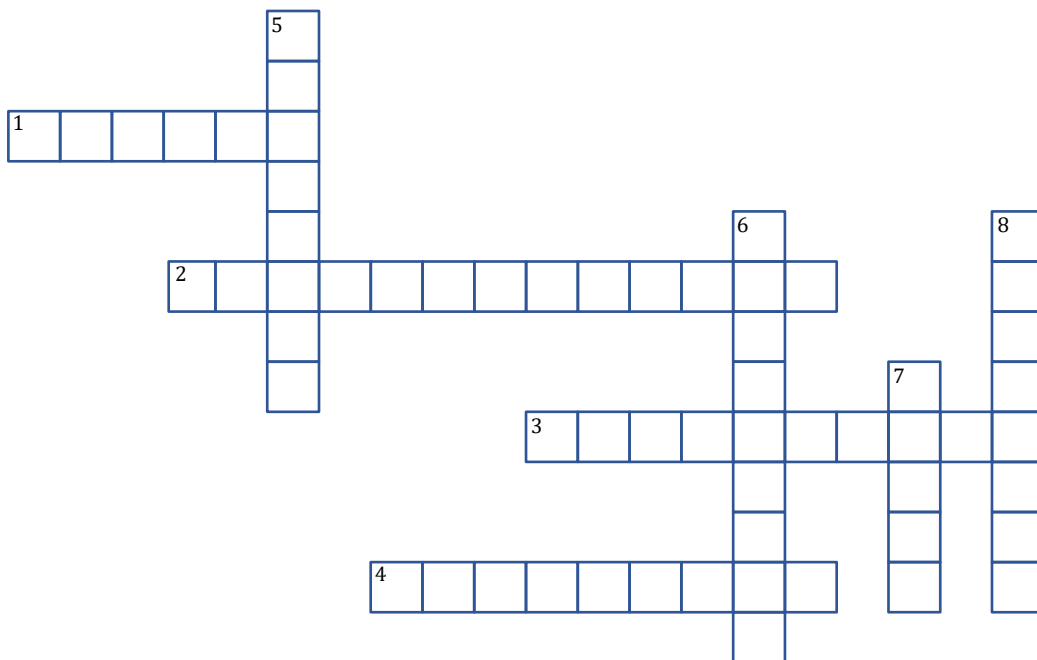
Column-I		Column-II	
(A)	Ursa Major	(p)	The queen
(B)	Orion	(q)	Big bear
(C)	Cassiopeia	(r)	Pole star constellation
(D)	Ursa minor	(s)	Hunter

2. **Match the column** **PBY083**

Column-I		Column-II	
(A)	Planet nearest to the sun	(p)	Jupiter
(B)	Largest planet	(q)	Saturn
(C)	Lightest planet	(r)	Neptune
(D)	Farthest planet	(s)	Mercury

Fill in the blanks

1. Ursa major constellation appears to revolve around _____. **PBY085**
2. Cassiopeia is visible during _____ in the early part of the night. **PBY086**
3. Equatorial plane and Orbital plane of the Earth are inclined to each other at an angle of _____. **PBY087**
4. The Great Red Spot on Jupiter is a _____, which has persisted since Galileo first observed it nearly 400 years ago. **PBY088**
5. The asteroid belt is the region between the orbit of _____ and the orbit of Jupiter. **PBY089**
6. Density of Saturn is _____ than that of water. **PBY090**
7. Uranus rotates on its _____, almost like a bowling ball rolling down its lane. **PBY091**
8. As a comet approaches the sun, it develops a tail pointing _____ from the sun. **PBY092**
9. A meteor that reaches the surface of earth without being completely vaporized is called a _____. **PBY093**
10. Indian remote sensing satellites (IRS) have important contributions in the survey and management of _____. **PBY094**

**Across**

1. India made geostationary satellite _____ was successfully launched from SriHarikota for the purpose extension of education.
2. The satellite whose orbital period is equal to the period at which the Earth rotates is called _____ satellite.
3. The plane of the equator of the Earth is called its _____ plane.
4. The stars, the planets, the moon and many other objects in the sky are called _____ object.

Down

5. _____ are relatively small, primarily rocky or metallic chunks of matter that orbit the sun.
6. The Latin name Ursa Major means _____.
7. The same side of the Moon always faces Earth this phenomenon, called _____ locking.
8. The entire surface of the Moon is covered by powdery soil called _____.

ANSWER KEY

Multiple choice questions

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	2	2	1	3	1	1	2	3	4	2	2	2	1	3	3

True or false

1. False 2. True 3. True 4. False 5. True
 6. False 7. False 8. False 9. True 10. False

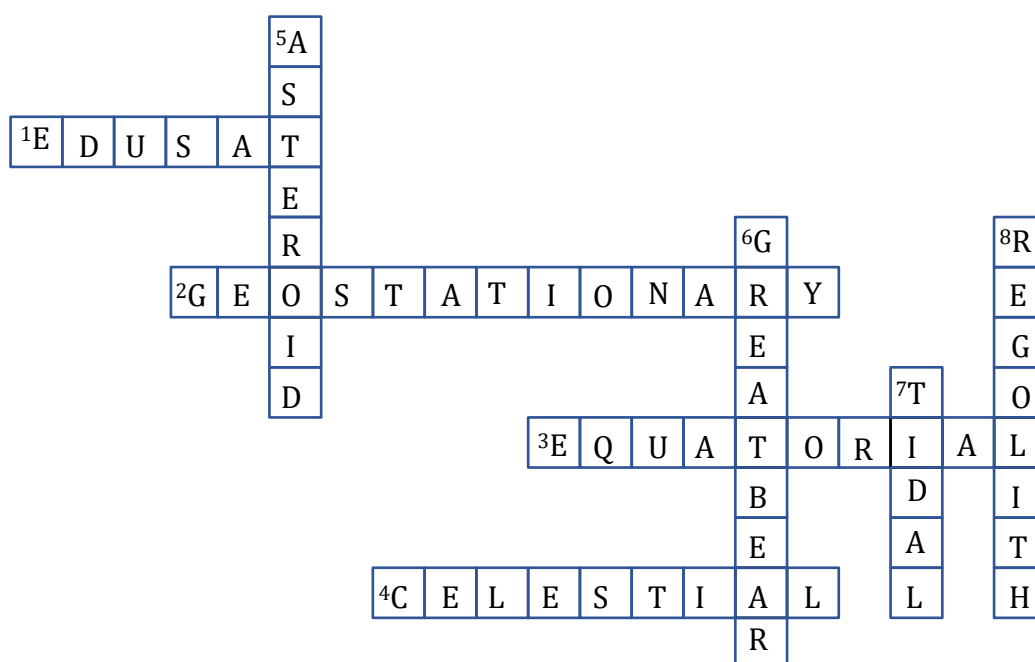
Match the column

1. $(A \rightarrow q); (B \rightarrow s); (C \rightarrow p); (D \rightarrow r)$ 2. $(A \rightarrow s); (B \rightarrow p); (C \rightarrow q); (D \rightarrow r)$

Fill in the blanks

1. Pole star 2. Winter 3. 23.5° 4. Storm 5. Mars
 6. Less 7. Side 8. Away 9. Meteorite
 10. Natural resources

Crossword



EXERCISE-02

Very short answer type questions

1. Can we hear any sound on the moon?
PBY096
2. How Moonlight is different from the Sunlight?
PBY097
3. What is a constellation?
PBY098
4. Name the bodies of the solar system that have failed to assemble into a planet.
PBY099
5. Name the planets that were discovered only after the invention of telescopes.
PBY100
6. Name the planet that is known to have largest number of natural satellites.
PBY101
7. Name all the planets of the solar system in order of their distance from the Sun.
PBY102
8. Which planet of the solar system is (a) largest and (b) smallest in size? **PBY103**
9. Name the two planets between which lie the orbits of asteroids.
PBY104
10. Why does the tail of a comet always point away from sun?
PBY105

Short answer type questions

1. Why do celestial objects appear to move across the sky from east to west? **PBY106**
2. Give two distinguishing features of a constellation.
PBY107
3. Name a celestial body which is not a star but is called a morning star. Explain.
PBY108
4. Explain how can you locate the star 'Sirius' using Orion constellation. **PBY109**

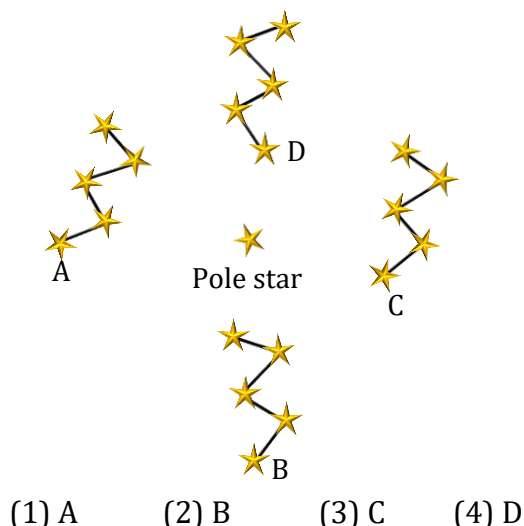
5. Classify the following into planets, satellites, stars and constellation : **PBY110**
Moon, Alpha Centauri, Neptune, Orion, Mercury, Ursa Major, Sun, Phobos.
6. Stars are not visible during the day. Explain. **PBY111**
7. State the features of moon and mercury that have close resemblance. **PBY112**
8. What are Asteroids? Name the largest seen Asteroid. **PBY113**
9. Why are meteors commonly called shooting stars? **PBY114**
10. Explain why the number of meteors striking the moon's surface is quite large whereas very few reach the earth's surface? **PBY115**

Long answer type questions

1. Describe the key features of solar system. Describe its characteristics and their significance in supporting life on earth.
PBY116
2. Explain an activity (i) to locate pole star using Ursa major constellation (ii) to show that Ursa major appear to revolve around the pole star. **PBY117**

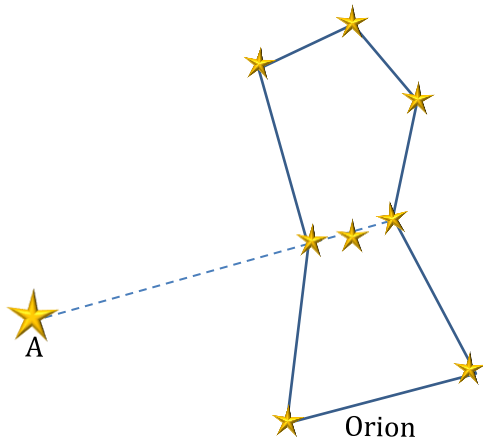
Activity based questions

1. See the given figure and choose the position that correctly represents the orientation of Cassiopeia constellation using the Pole star. **PBY118**



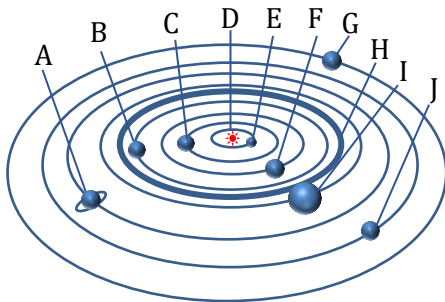
2. Identify the star A shown in the figure.

PBY119



- (1) Alpha Centauri (2) Sun
(3) Pole star (4) Sirius

Use figure given below that shows our Solar system to answer the Q.3 to Q.5.



3. The object D is a PBY120

- (1) Star (2) Sun
(3) Luminous object (4) Sirius

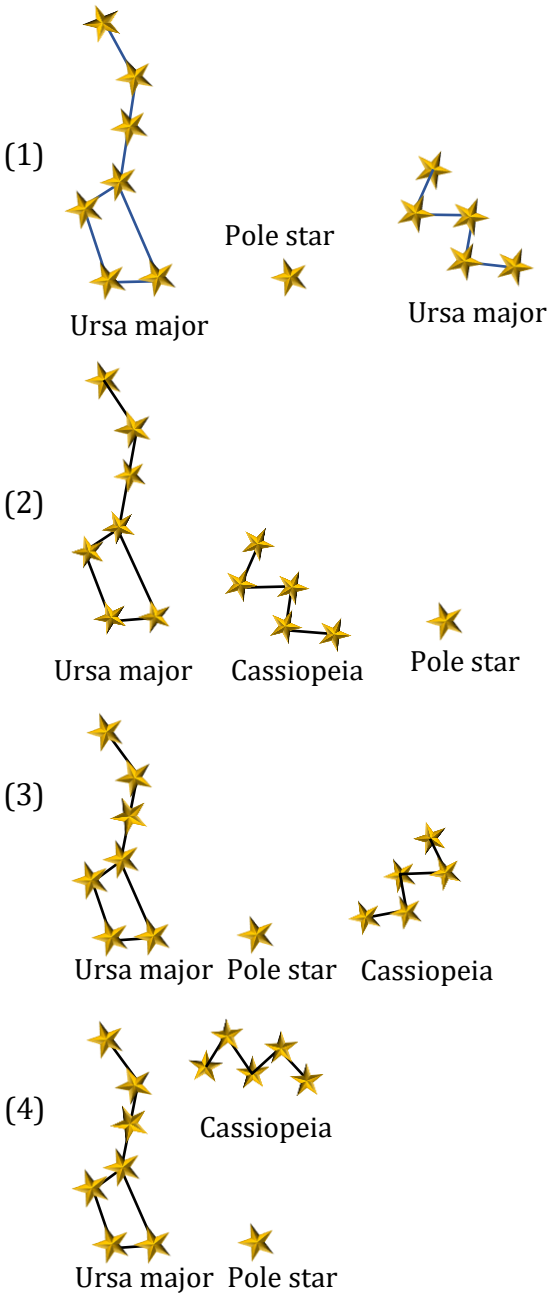
4. The objects C and E are collectively called PBY121

- (1) Jovian planets
(2) Terrestrial planets
(3) Superior planets
(4) Gas giants

5. The region H represents PBY122

- (1) Meteor belt (2) Kuiper belt
(3) Asteroid belt (4) Oort Cloud

6. Try to locate Ursa major and Cassiopeia using the Pole star on a clear night sky. Choose the correct orientation of these constellations with respect to the Pole star that you observe on the night sky. PBY123



ANSWER KEY

Activity based questions

Question	1	2	3	4	5	6
Answer	3	4	2	2	3	3

