Class–VIII

Science NCERT SOLUTION

Chapter-17

STARS AND THE SOLAR SYSTEM

Choose the correct answer in questions 1-3

1. Which of the following is not a member of the solar system ?

(a) An asteroid
(b) A satellite
(c) A constellation
(d) A comet

Ans: (c) A constellation

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2. Which of the following is not a planet of the sun ?

(a) Sirius
(b) Mercury
(c) Saturn
(d) Earth

Ans: (a) Sirius

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3. Phases of moon occur because :

(a) We can see only that part of the moon which reflects light towards us.
(b) Our distance from the moon keeps changing.
(c) The shadow of the Earth covers only a part of the moon's surface.
(d) The thickness of the moon's atmosphere is not constant.

Ans: (a) We can see only that part of the moon which reflects light towards us.

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4. Fill in the blanks.

(a) The planet which is farthest from the Sun is _____ .
(b) The planet which appears reddish in colour is _____ .
(c) A group of stars, that appear to form a pattern in the sky is known a _____ .
(d) A celestial body that revolves around a planet is known as _____ .
(e) Shooting stars are actually not _____ .
(f) Asteroids are found between the orbits of _____ and _____ .

Ans: (a) The planet which is farthest from the Sun is **Neptune**.
(b) The planet which appears reddish in colour is **Mars**.
(c) A group of stars, which appear to form a pattern in the sky is known a **constellation**.
(d) A celestial body that revolves around a planet is known as **satellite**.
(e) Shooting stars are actually not **stars**.
(f) Asteroids are found between the orbits of **Mars** and **Jupiter**.

5. Mark the following statements as true (T) or false (F).

(a) Pole star is a member of the solar system. ( )
(b) Mercury is the smallest planet of the solar system. ( )
(c) Uranus is the farthest planet in the solar system. ( )
(d) INSAT is the artificial satellite. ( )
(e) There are nine planets in the solar system. ( )
(f) Constellation Orion can be seen only with a telescope. ( )

Ans: (a) (F) **(b)** (T) **(c)** (F) **(d)** (T) **(e)** (F) **(f)** (F)

6. Match items in column A with one or more items in column B.

A	B
(i) Inner planets	(a) Saturn
(ii) Outer planets	(b) Great Bear
(iii) Constellation	(c) Moon
(iv) Satellite of the Earth	(d) Mars

Ans:

A	B
(i) Inner planets	(d) Mars
(ii) Outer planets	(a) Saturn
(iii) Constellation	(b) Great Bear
(iv) Satellite of the Earth	(c) Moon

7. In which part of the sky can you find Venus if it is visible as an evening star ?

Ans: Venus appears in the western sky just after sunset as a evening star.

8. Name the largest planet of the solar system.

Ans: Jupiter is the largest planet of the solar system.

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

Ans: A group of stars which forms a recognizable pattern or shape is called a ***constellation***.

Name of two constellations are -

1. Ursa Major (Great Bear)
2. Orion the hunter

10. Draw sketches to show the relative positions of prominent stars in

(a) Ursa Major and
(b) Orion.

Ans:

(a) Ursa Major appears like a big dipper.

Ursa Major

(b) Orion appears like a hunter.

Orion

11. Name two objects other than planets which are members of the solar system.
Ans: Satellites and Asteroids are the two objects other than planets which are members of the solar system.

12. Explain how you can locate the Pole Star with the help of Ursa Major.
Ans: To locate the Pole Star we have to look towards the northern part of the sky and try to identify Ursa Major. We have to look at the two stars at the end of Ursa Major. A straight line passing through these stars is imagined and is extended towards the north direction. This line leads to a star which is not too bright. This is the Pole Star.

13. Do all the stars in the sky move ? Explain.
Ans: No, no star moves in sky. They appear to move from east to west, because the Earth rotates from west to east about its axis.

14. Why is distance between stars expressed in light years ? What do you understand by

the statement that a star is eight light years away from the earth ?

Ans: The distance of stars is so large that it cannot be expressed in terms of kilometers. That is why very large distances are expressed in another unit known as light year. One light year is the distance travelled by light in one year.

If the distance of a star is eight light years, it means that this distance is the distance travelled by light in one year.

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15. The radius of Jupiter is 11 times the radius of Earth. Calculate the ratio of the volumes of Jupiter and the earth. How many earths can Jupiter accommodate ?

Ans: If the radius of the Earth is r.

Then, radius of the Jupiter is 11 r.

So, ratio of the volumes of Jupiter and Earth $= \frac{4}{3}\pi(11r)^3 : \frac{4}{3}\pi r^3$

$= \frac{4}{3}\pi \times 1331 \times r^3 : \frac{4}{3}\pi r^3 = 1331 : 1$

So, 1331 Earth can accommodate within the Jupiter.

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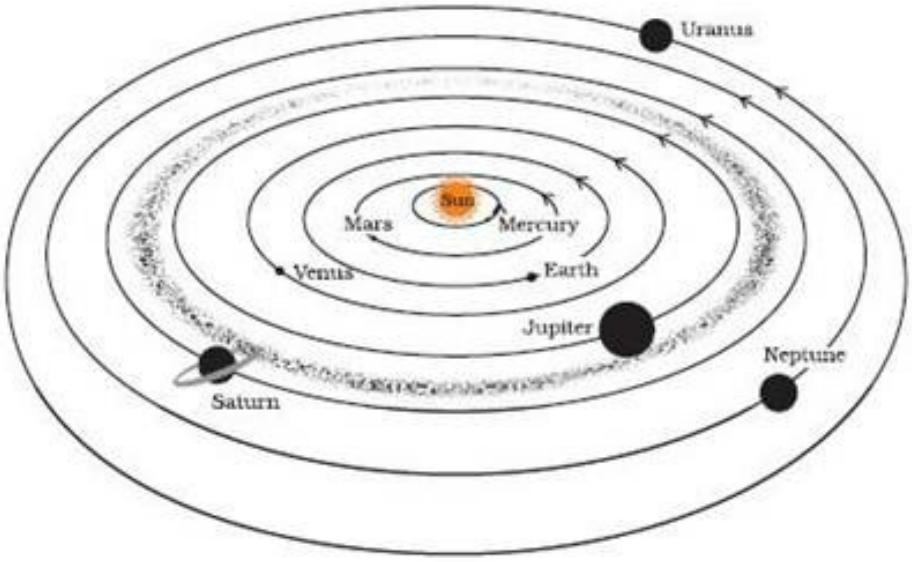
16. Boojho made the following sketch (fig. 17.29) of the solar system. Is the sketch correct ? If not, correct it.



Ans: The positions of Mars and Venus have to be interchanged. Similarly positions of

Neptune and Uranus also have to be interchanged.