

1. Stars and Our Solar System

Exercises

1 A. Question

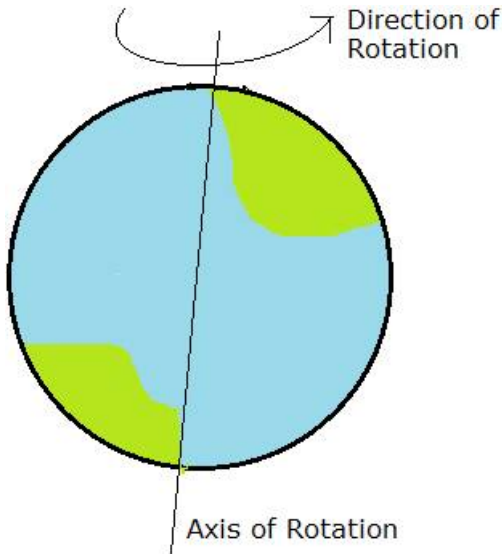
Answer the following question.

What is meant by the 'rotation' of planets?

Answer

Rotation is when a planet spins on its axis. The axis is an Fixed imaginary line passing from center of planet. For e.g. Earth completes one complete rotation in 24 hours.

The Rotation of a planet has been shown in the figure



1 B. Question

Answer the following question.

What is the special feature of Venus?

Answer

All planets spins on its axis called rotation of planets, Venus also spins on its axis but it spins in opposite direction from other planets all planets rotates west to east direction and it rotates in east to west direction .it also rotates at slowest rate compared to other planets as it takes 243 days to complete one rotation.

1 C. Question

Answer the following question.

Why is Mars called the Red Planet?

Answer

The soil on Mars is rich in iron so it is red in color, which makes the planet appear red when viewed from space, that is why Mars is also called red planet.

2 A. Question

Give reasons.

We only see one side of the moon.

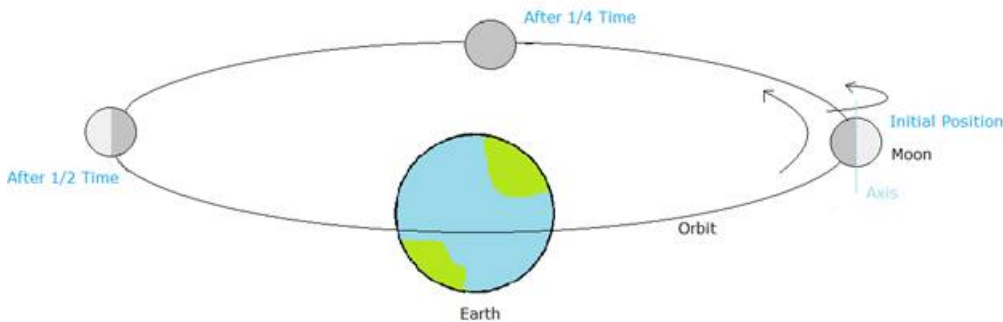
Answer

Reason:

Moon rotates or spins on its own axis and at the same time moon revolves around Earth in a fixed orbit (path) and time taken by moon to complete one revolution around Earth is nearly equal to time taken by

moon to complete one rotation that is 27.3 Days so every time same face of moon appears to an observer on earth viewing moon because in completing one circle it completed one rotation also so at the end of 27.3 days it appears at same place from where it started and facing towards the earth in the same way as of earlier

The simultaneous rotation and revolution of moon around earth has been shown in the figure



2 B. Question

Give reasons.

Planets do not collide into one another.

Answer

Reason: All planets revolve around sun in a fixed path called as orbit, orbits of planets are separated by vast distance from each other and do not cross each other so planets do not so they do not collide into one another.

2 C. Question

Give reasons.

Saturn is said to have unique characteristics.

Answer

Reason: Saturn has some unique characteristic like :-

1. Saturn has rings around it, these rings are made up of rocks, ice and dust.
2. Density of Saturn is less than that of water (density is mass per unit volume), i.e. it is very light so if there were large enough ocean Saturn would float on it.

2 D. Question

Give reasons.

We see the planets and stars moving from the east to the west.

Answer

Reason:

We see the planets and stars like our own sun moving from east to west because our earth rotates from west to east so, we find the other planetary objects to move in the opposite direction. Planets and stars appear moving from east to west. This is because of the rotation of the earth from west to east.

2 E. Question

Give reasons.

Even as India--England cricket match is played at Lords we can watch it live at home.

Answer

Reason: We can watch India--England cricket match is played at Lords we can watch it live at home due to artificial satellites because revolve around earth in space and are used for communication they receive signal(Video and Audio of the match being recorded on camera) from lords and then transmit it or telecast it to our homes through Dth and we can watch it on TV.

3. Question

Fill in the blanks.

- (a) There are altogether constellations. Of these, 37 belong to the northern hemisphere sky and to the southern hemisphere sky.
- (b) Jupiter has moons.
- (c) was India's first artificial satellite.
- (d) It is because of, that we can forecast the weather.

Answer

- (a) 88,51

there are total 88 constellations out of which 51 belongs southern hemisphere sky , constellations are group of stars that make an imaginary shape in the night sky, Example scorpius.



- (b) 63

Jupiter has 63 moons, moon is a natural satellite which revolves around a planet in a fixed orbit (path).

- (c) Aryabhata

Aryabhata was India's first artificial satellite, artificial satellite is a man made device that revolves around planet in a fixed orbit(path).

- (d) Satellite

Satellite revolves above surface of earth and capture images, and other data regarding weather conditions like cloud formation at a certain place or variation in air pressure etc. and transmit this data to scientists on earth , on the basis of which they predict the weather.

4. Question

Match the following.

`A'	`B'
(a) Morning star	1. 27.3 days
(b) The Great Bear	2. Between Mars and Jupiter
(c) IRS	3. Venus
(d) Asteroids	4. Constellation
(e) Halley's comet	5. Artificial satellite
(f) Rotation of the moon	6. 76 years

Answer

- (a) Morning star -3 Venus

Venus is seen just before sunrise during the time when planet is west of sun, that is why is called as morning star.

- (b) The Great Bear -4 Constellation

Constellations are group of stars that make an imaginary shape in the night sky

(c) IRS -5 Artificial satellite

Artificial satellite is a man made device that revolves around planet in a fixed orbit(path).

(d) Asteroids -2 Between Mars and Jupiter

Asteroid is small rocky body revolving around sun in fixed orbit(path). Large no. of these Asteroids are found between the orbits of mars and Jupiter.

(e) Halley's comet -6 76 years

Halley's comet is probably the most well known of all the comets. It approaches the sun every 75-76 years.

(f) Rotation of the moon -1-27.3 days

Moon takes approximately 27 days to rotate once on its axis

(The axis is an Fixed imaginary line passing from center of moon or planet)

Activities

1. Question

Write the names of Indian astronauts and collect their pictures and information about them.

Answer

The name of the Indian astronauts are given as:

i. Rakesh Sharma



ii. Kalpana Chawla:



iii. Sunita Williams:



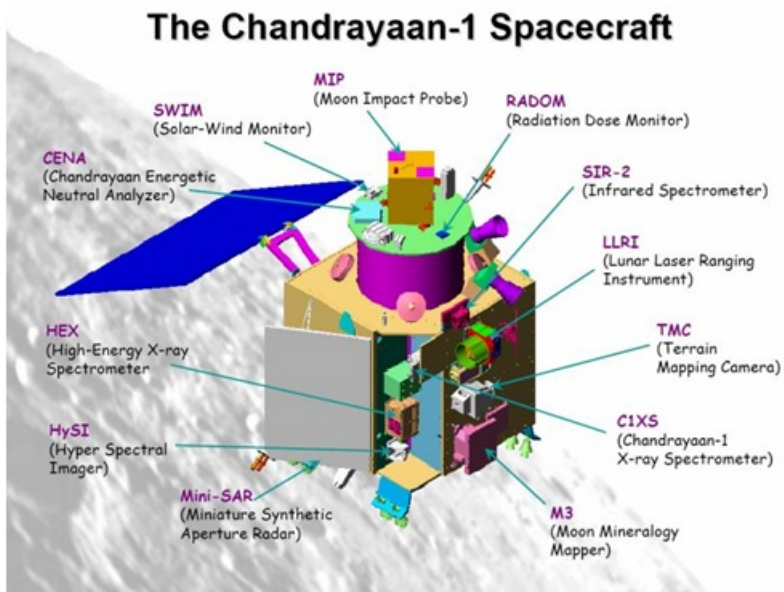
iv. Ravish Malhotra:



2. Question

Collect information about and pictures of the Chandrayaan, the spacecraft that India has sent to the moon.

Answer



3. Question

Find out how, when a space voyage is planned, space debris has to be taken into consideration.

Answer

The student should do it by themselves.