



MISSION SSC GD CONSTABLE 2023

OUR UNIVERSE & SOLAR SYSTEM

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What is the Universe?

- The Universe consists of all the heavenly bodies such as the sun, the stars & many more celestial bodies such as planets, asteroids, satellites, comets, meteors, meteorite, etc.
- ब्रह्मांड में सभी खगोलीय पिंड जैसे सूर्य, तारे और कई अन्य खगोलीय पिंड जैसे ग्रह, क्षुद्र ग्रह, उपग्रह, धूमकेतु, उल्का, उल्का पिंड आदि शामिल हैं।

- While the spatial size of the entire universe is unknown, it is possible to measure the size of the observable universe, which is approximately 93 billion light-years in diameter at the present day.
- The Big Bang Theory is how astronomers explain the way the universe began.
- It is the idea that the universe began as just a single point, then expanded and stretched to grow as large as it is right now—and it is still stretching!

Nebula /निहारिका

- A nebula is a giant cloud of dust and gas in space. Nebulae are regions where new stars are beginning to form. For this reason, some nebulae are called "star nurseries."



Galaxy / आकाश गंगा

- A galaxy is made up of millions or billions of stars and planets held together by gravity.
- One of these galaxies is our Milky Way.
- It is a spiral galaxy.
- Andromeda is the closest galaxy 2.5 million light-years away from Earth.



What is Solar System?

- Solar system mainly consists of a big star known as The Sun and everything that revolves around it, including planets, moons, asteroids, comets, and meteoroids.

Other Objects in the Solar System

Asteroids/ क्षुद्र ग्रह

- Asteroids are rocky and metallic objects that orbit the Sun but aren't large enough to be termed planets.
- The majority of the asteroids in our solar system orbit the Sun between Mars and Jupiter's orbits.



Meteorites/ उल्का पिंड

- The meteorites are made up of rock or dust make their way into the atmosphere.
- They come into contact with a lot of friction as they pass, which causes them to heat up and burn out.



Comets/ धूमकेतु

- Comets are small icy objects with irregular shapes.
- When these objects approach the sun, the ice evaporates, leaving behind a lovely tail.



Constellation/ तारामंडल

- A constellation is a group of stars in the night sky that form an imagined shape.
- examples such as Orion, Big Dipper, Great Bear



Satellite / उपग्रह

- Satellites are celestial objects that orbit planets and are part of the solar system.
- The Moon is the Earth's satellite.

MCQs

1. The asteroids revolve round the Sun in between:

क्षुद्र ग्रह सूर्य के चारों ओर चक्कर लगाते हैं:

a) Earth and Mars

b) Mars and Jupiter

c) Jupiter and Saturn

d) Saturn and Uranus

2. The nearest large galaxy of Milky Way is

आकाशगंगा की निकटतम बड़ी आकाशगंगा है

- a) Andromeda galaxy.
- b) Black Eye galaxy
- c) Bode's Galaxy
- d) Centaurus galaxy

3. The closest known nebula to Earth is called
पृथ्वी के सबसे निकट ज्ञात निहारिका को कहा जाता है

a) Orion Nebula

b) Helix Nebula

c) Crab Nebula

d) Emission Nebula

4. Which one of the following is known as "star nursery"?

निम्नलिखित में से किसे "स्टार नर्सरी" के रूप में जाना जाता है?

- a) Constellation
- b) Nebula
- c) Galaxy
- d) Corona

5. The tail of comet is

धूमकेतु की पूँछ

- a) Directed away from the Sun
- b) Parallel to the sun
- c) Towards the sun
- d) Does not exist

6. Which is the largest constellation?

सबसे बड़ा तारामंडल कौन सा है?

- a) Hydra
- b) Virgo
- c) Ursa Major
- d) Hercules

7. Asteroids are made up of :

क्षुद्र ग्रह बने होते हैं:

a) Dust & ice

b) Rocks & ice

c) Rocks & metals

d) Metals & dust

8. What is also known as shooting stars?

किसे टूटते तारे के नाम से भी जाना जाता है?

a) Comets

b) Asteroids

c) Nebula

d) Meteors

9. How many constellations are recognized officially?

कितने नक्षत्र मंडल को आधिकारिक तौर पर मान्यता प्राप्त हैं?

- a) 88
- b) 98
- c) 65
- d) 12

10. Which is the largest asteroid in asteroid belt?

क्षुद्र ग्रह बेल्ट में सबसे बड़ा क्षुद्र ग्रह कौन सा है?

- a) Vesta
- b) Ceres
- c) Pallas
- d) Hygiea



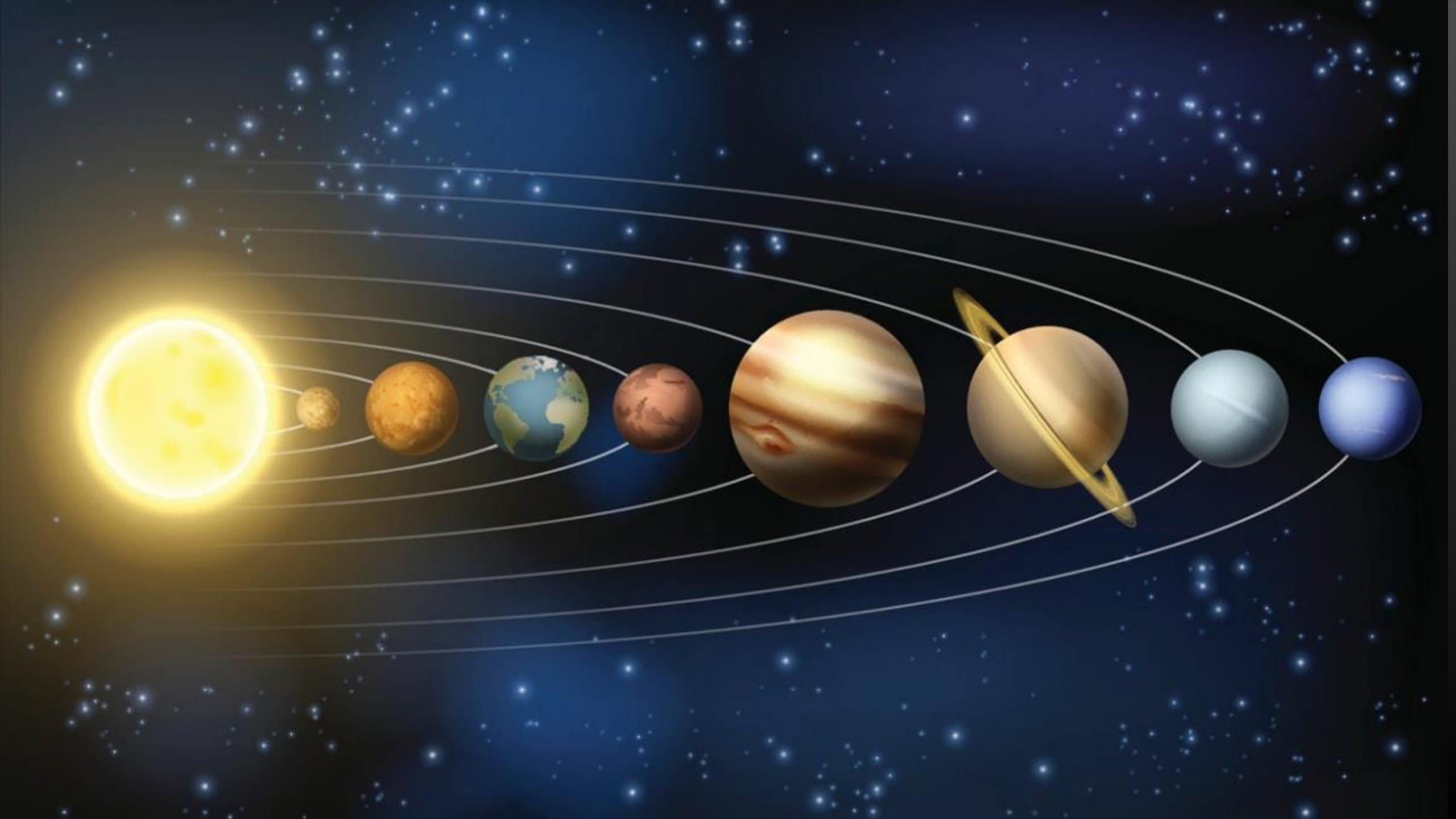
Planets

- The word planet means '*wanderer*'.
- Planets do not have any light of their own but reflect the light of the sun.

Conditions :

1. it says a planet must do three things: It must orbit a star (in our cosmic neighborhood, the Sun).
2. It must be big enough to have enough gravity to force it into a spherical shape.
3. It must be big enough that its gravity cleared away any other objects of a similar size near its orbit around the Sun.

- There are eight planets in our Solar System that are revolving around the Sun in elliptical orbits.
- The planets are generally divided into two parts i.e. “The Giant Planets/Jovian ” and “The Terrestrial Planets”.



Mercury

- It is the nearest planet to the sun.
- It is the smallest planet in our solar system.
- It can be observed just before sunrise or just after sunset, near the horizon.
- Mercury has no satellite/moon of its own.
- Fastest revolution time.

Venus

- It is the brightest planet in the night sky.
- It is the hottest planet.
- It is often called morning or evening star although it is not a star.
- Venus is considered the '**Earth's twin**' because its size and shape are very much similar to that of the earth.
- Venus has no moon or satellite of its own.
- It rotates from east to west while the Earth rotates from west to east.

Earth

- The Earth has only one moon.
- It is known as the Blue Planet.

Mars

- It is also known as the red planet.
- Mars has two small natural satellites or moons.

Jupiter

- It is the largest planet in the solar system.
- It has 79 moons .

Saturn

- It has 7 main rings.
- It has 145 moons or natural satellites.
- It is the least dense among all the planets.

Uranus

- It is called Green Planet because of the presence of Methane gas.
- Like Venus, Uranus also rotates from east to west.
- It has a total of 27 moons.

Neptune

- It is the Coldest planet and the windiest planet.
- There are 14 Satellites.
- At least 5 main rings are present.