

Assignment # 01

General Science Ability

(Physical Sciences)

What is Galaxy?

Galaxy:

Galaxy comes from the Greek word 'galaxia' which means 'milky'.

"Galaxy is a gravitationally bound system consisting of a blackhole, stars, stellar remnants, nebulae, planets, dwarf planets, small solar system bodies and satellites."

Astronomers suggest that there are 100-400 billion galaxies.

According to their shape there are galaxies like:

- Spiral
- Elliptical
- Irregular, etc.

Milky Way Galaxy:

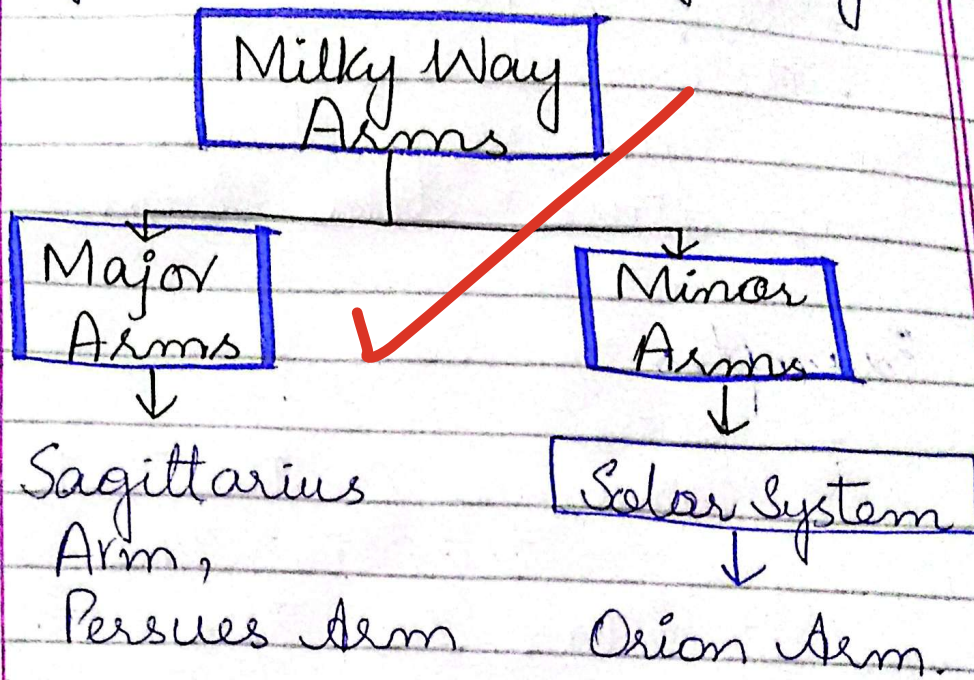
Milky Way is large, spiral and disc-shaped galaxy. Milky Way contains 200-400 billion stars and which we can see are in the Milky Way.

Features:-

- Milky Way is about 100,000 light years in diameter.
- This spiral galaxy is formed about 13.7 billion years ago.
- Milky Way is home to our solar system.
- Our solar system is about 30,000 light years away from the centre of the Milky Way.
- Sun takes about 250 million years to orbit around the galaxy.
- The region in the space that occupied by

Milky Way is called
Galactic plane.

→ Andromeda is the nearest galaxy from Milky Way.



Star:-

Star is a huge ball of gas, mostly hydrogen and helium. Nuclear fusion reactions inside the star ~~contains~~ releases enormous energy. Stars are very hot and give off their own light. That's why we can

see distant stars at night.
Different objects revolve around the star.

- planets
- dwarf planets
- asteroids, etc

Stars have very high temperature. Like sun is about $5500-6000^{\circ}\text{C}$.

Examples of stars are:

Sun

Proxima Centauri, etc.

Proxima Centauri is the nearest star to the earth after sun and is 40 trillion km away.

Sequence of Star Fusion:

Hydrogen



Helium



Carbon



Neon



Oxygen

Silicon



Sun:

Sun is the centre of solar system. Sun is highest part of the solar system because of having 99% mass of solar system.

Sun is also a star.

Structure of Sun :-

Every star has a definite structure and sun is also has its structure-

Core



Radiative Zone



Convective Zone



Photosphere



Upper Chromosphere



Lower Chromosphere



Corona

Dwarf Planets :-

Dwarf planets are celestial bodies and it is an orbit around a star.

But it is too small to called it a satellite.

Dwarf planets are small in size and less gravitational pull.

Five dwarf planets :

- Ceres
- Pluto
- Makemake
- Haumea
- Eris.

Except Ceres, other dwarf planets are found in outer orbit of solar system and which is called **Kuiper Belt**.

Pluto is called as dwarf planet because objects in the Kuiper Belt are within its orbit and its unable to attract-

