

Q a) What is radioactivity? Define artificial radioactivity and its types.

Answer 1- Radioactivity

A process of disintegration of heavier nucleus into smaller nuclei is called radio activity.

OR  
"A process in which unstable nucleus disintegrate into a stable form."

2. Artificial Radioactivity

A slow moving neutron when bombard on Uranium atom, it disintegrate into smaller nuclei, is known as artificial radioactivity.

For example: alpha rays, beta rays and gamma rays

3- Types of Artificial Radioactivity  
Following are types

a) Alpha Rays  $\alpha$

Alpha rays are positively charged. It contains two neutron and two proton.

i.e Helium  ${}^4_2\text{He}$

b) Beta Rays  $\beta$

Beta rays are negatively charged. In fact Beta rays are more similar like electron.

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c) Gamma Rays  $\gamma$

Gamma Rays are highly energetic and more penetrating. They contain no charge and no mass.

i.e X-rays like (Röntgen)

Qb Define Black hole and how is formed?

Answer:- Black Hole

"A substance of extreme density and strong gravitational pull is known as

black hole. It is also called 'collapser'; means 'collapse of stars'. Moreover, black hole attracts every object with strong gravitational power even light can not escape from it.

2. How a black hole is formed?

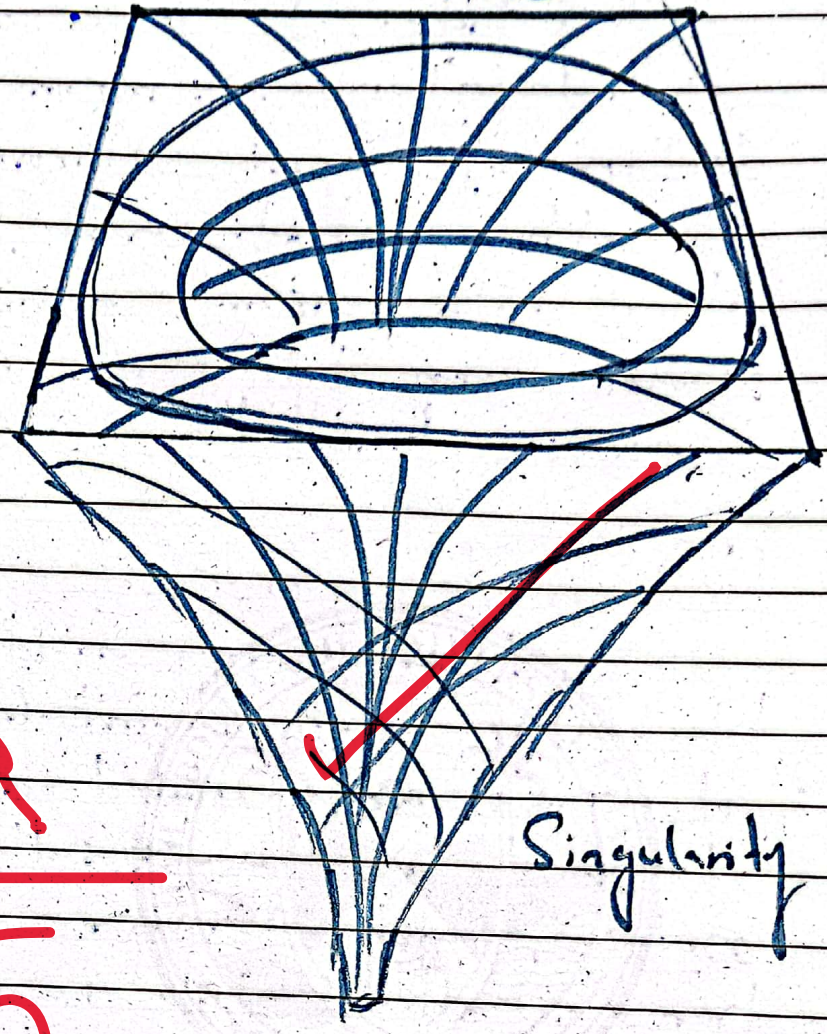
When energy inside a black hole gets unbalanced, it pulls every object inside it and as a result nothing gets escape; hence, a black hole is formed.

According to a question;

$$d \propto \frac{m}{V} \therefore d \propto m$$

Therefore, strong density attracts mass towards and every thing collapses inside a black hole.

Black Hole



Singularity

• Black Hole diagram

Q c Define Solid Waste Management. Also describe issues of SWM in Pakistan.

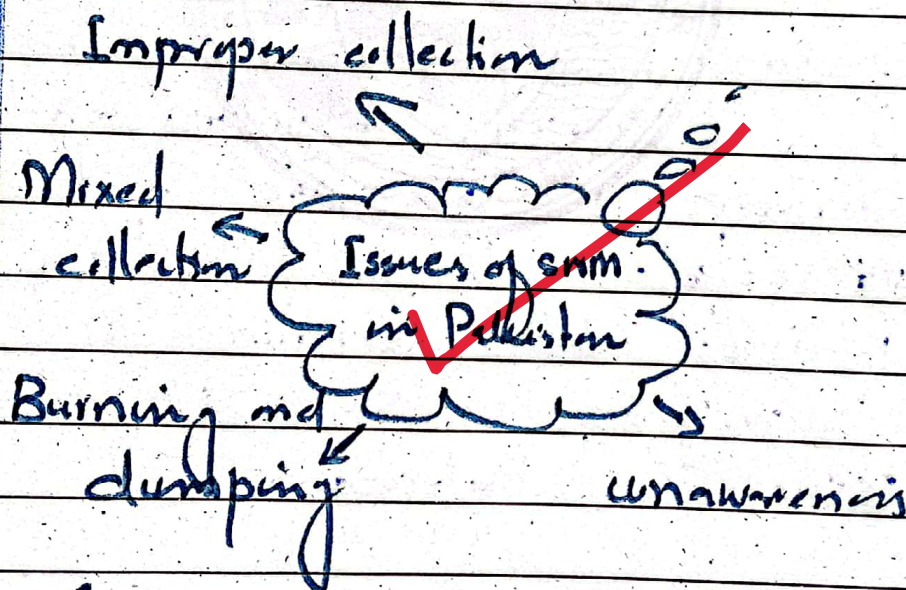
Answer 1- Solid Waste Management (SWM) 'Solid and semi-solid waste of biodegradable, recyclable and electronic substances known as

## Solid waste management.

In fact, a process of collecting solid and semi-solid wastage known as solid waste management.

Forexample, plastics, bottles, wires etc.

2- Issues of SWM in Pakistan  
Following are issues of solid waste management:



ra) Improper collection of SWM  
Improper collection of SWM is issue in Pakistan.

In fact, there is no proper collection system. According to RBS,

"almost 5,500 tonnes  
of SWM are wasted."  
Hence, improper SWM is an  
issue.

b) Difficulty in separate collection  
Moreover, there is no  
separate collection of waste.  
All wastage are mixed up.  
Thus, mixing waste is  
another issue of SWM in  
Pakistan.

c) Common dumping and burning  
Further, dumping and  
burning is an issue and  
prevails. Pollution of the  
planet. Thus, burning and  
dumping of SWM is an  
issue in Pakistan.

d) Unawareness  
Lack, but not the least,  
unawareness of public leads  
an obstacle in collection of  
SWM. Therefore, awareness  
is an issue of SWM collection.

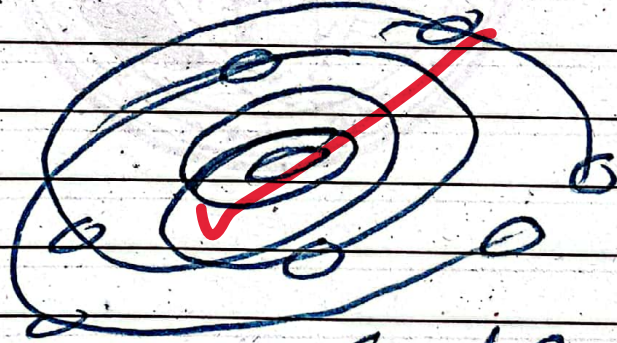
Qd) Define galaxy. Earth moves around which galaxy?  
 Answer: Galaxy

Galaxy is the basic unit of universe. In fact,

"Galaxy is a collection of millions of billions of stars."

Thus, galaxy is a combination of billions of stars that form a whole universe.

For Example: elliptical galaxy, spiral galaxy, milky way galaxy, and irregular galaxy

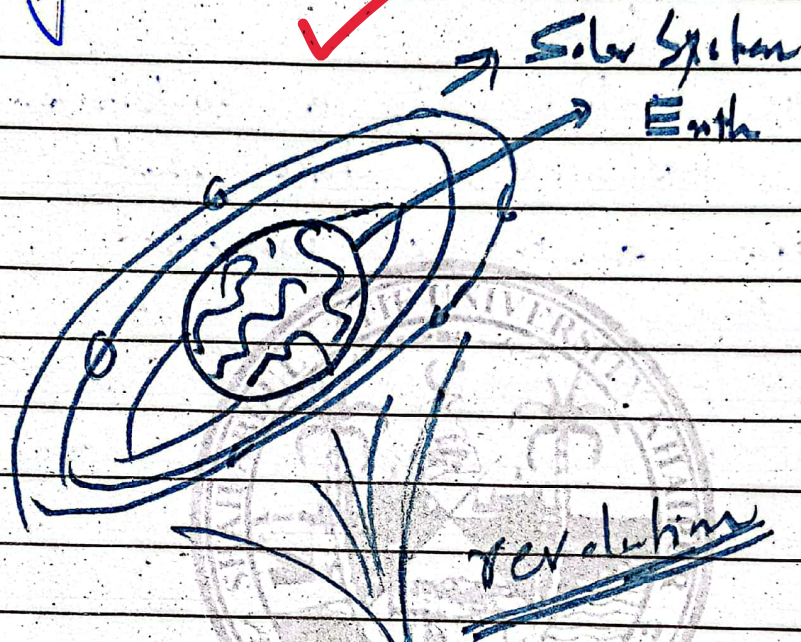


Spiral Galaxy

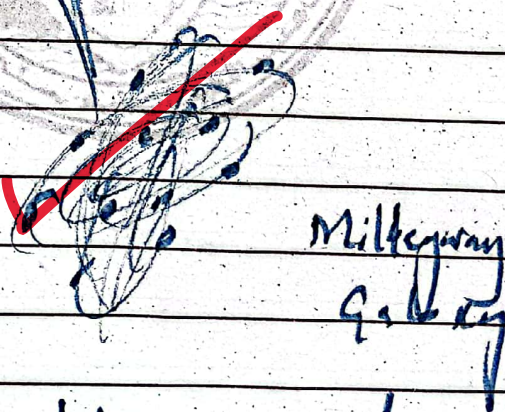
2- Movement of Earth around Galaxy

Earth moves around 'Milky way' galaxy. The most abundant and common galaxy in the universe is

'Milkyway' galaxy. around which  
 Earth revolves. In fact, a  
 whole solar system revolves  
 around 'Milkyway' galaxy.  
 It takes 230 million  
 years.



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Earth revolves around  
galaxy