

General Science

Topic: Universe.

Question

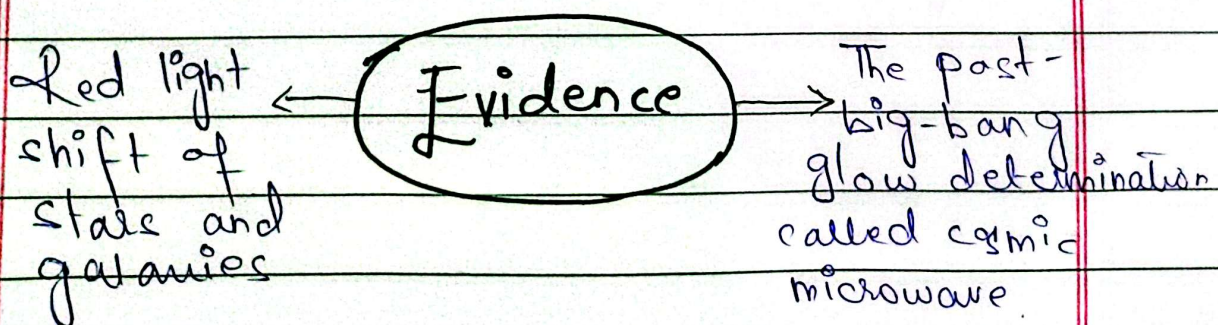
Briefly describe the most popular and accepted theory about the origin of universe.

1- Big Bang theory is the most popular and accepted theory regarding the origin of universe.

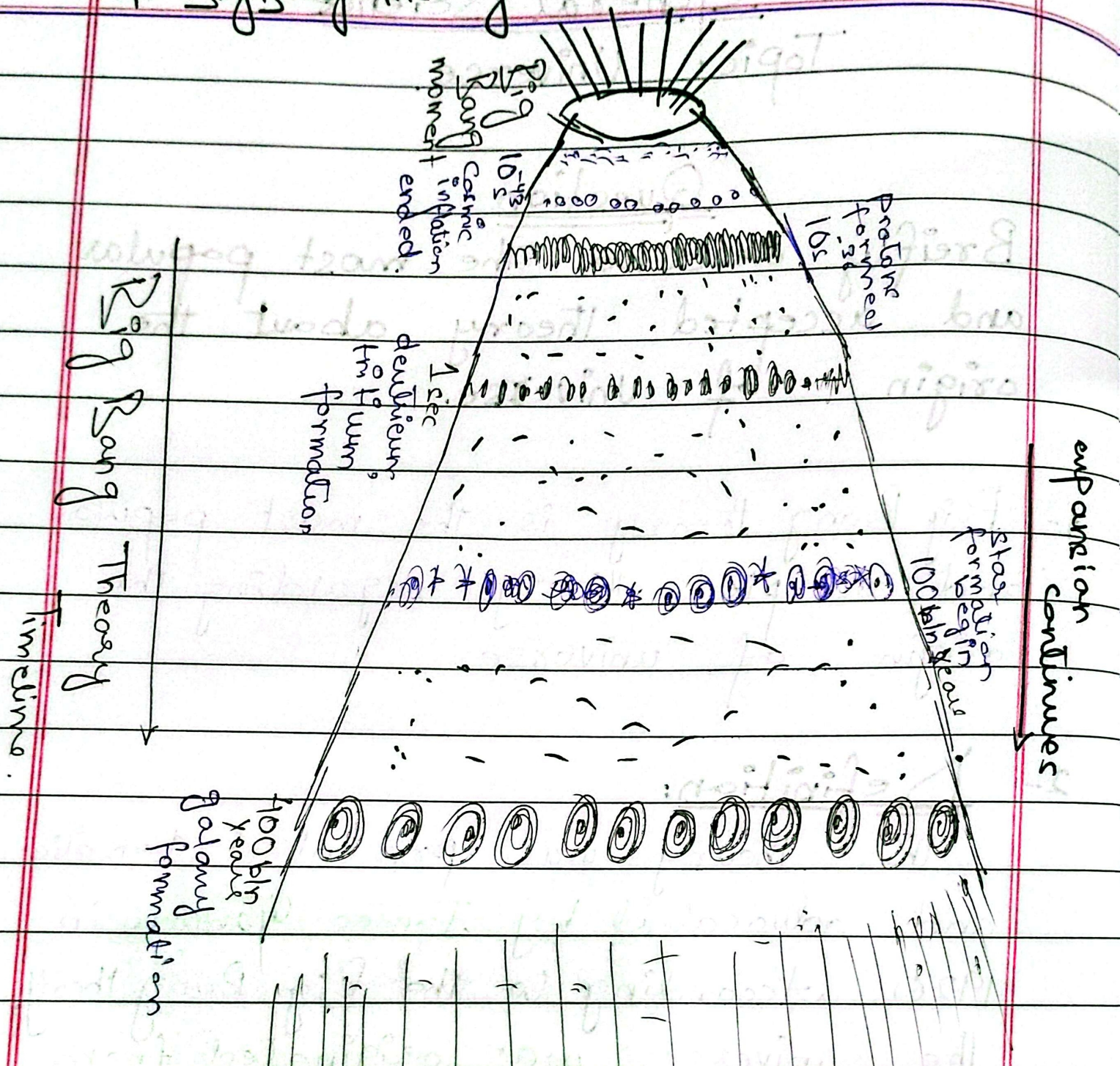
2- Definition:

This theory was presented and advocated by James Gamow in 1920. According to the Big Bang theory, the universe was originated from a big bang and expanded over the time. No space and time existed before the big bang.

3- Evidence of Big Bang:



4- Big Bang Theory Timeline.



4- Postulates of Big Bang Theory

a- laws of physics are uniform in the universe.

b- Universe is expanding.

c- Earth is not the center of universe.

d- It estimates Earth age between 10-20 billion years.

6- Critique of Big Bang Theory:

a- It fails to explain the dark energy and dark matter in the universe.

b- It fails to explain the reason of expansion and future of universe.

Despite the critique, Big Bang Theory answers most of the questions regarding origin of universe. Therefore, it is most popular and widely accepted theory of universe's origin.

Question

Define a light year and explain its significance in measuring astronomical units (distance). Also name the main types of galaxies with one example each.

1- Light Year

Light : year is an astronomical unit used to measure the distance between celestial objects

2- Measurements

1 light year = 9.5 trillion km
= 6 trillion miles

1 light second = 185,000 km.

3- Importance

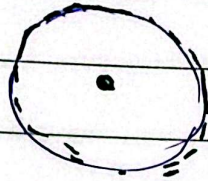
The distance between astronomical objects is so large/vast that it cannot be measured in meters or kilo-meters. Therefore, the distance covered by light in one year, called light year, is used to measure astronomical distance.

4- Types of Galaxies:

a- Elliptical Galaxy

It does not have galactic arms and possess mature stars.

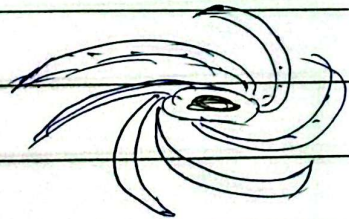
Example: NGC-2865



b- Spiral Galaxy

It consists of a nucleus with spiral arms. It is disc-shaped and contains young stars.

Example: Milky way.



c- Irregular Galaxy

It does not have a definite shape and comprises of most young stars. Star formation is intense here.

Example: Small and large Magellanic clouds.

