

Q2 (a) Differentiate between a star and a planet. What is the magnitude of a star and how the color of stars is correlated with their temperature.

Question Number: 2

Answer:

a)

Outline

1) Introduction

2) Difference between star and planet.

3) Magnitude of star with example.

4) The color of star is correlated with their temperature.

5) Conclusion.

Star is very hot and uncountable in galaxy. It is a very massive object. The planet is very cold object and the planet is countable. The measure of a star brightness is called magnitude of star. The color of star depends on wave length.

Star	Planet
(i) It is twinkle at night.	(i) It is not twinkle at night.
(ii) It is very high temperature.	(ii) It is very cold temperature.
(iii) It takes fusion reaction.	(iii) It takes no fusion reaction.
(iv) It is luminous object.	(iv) They are not luminous object.
(v) It is made of H_2 , He and other gases.	(v) It is made of solid, liquid, and gas.

(vi) Example:
Proxima.

(vi) Example: Earth, Venus.

(vii) It is very
shine.

(vii) It is not shine.

(viii) It is very
hot.

(viii) It is very cold.

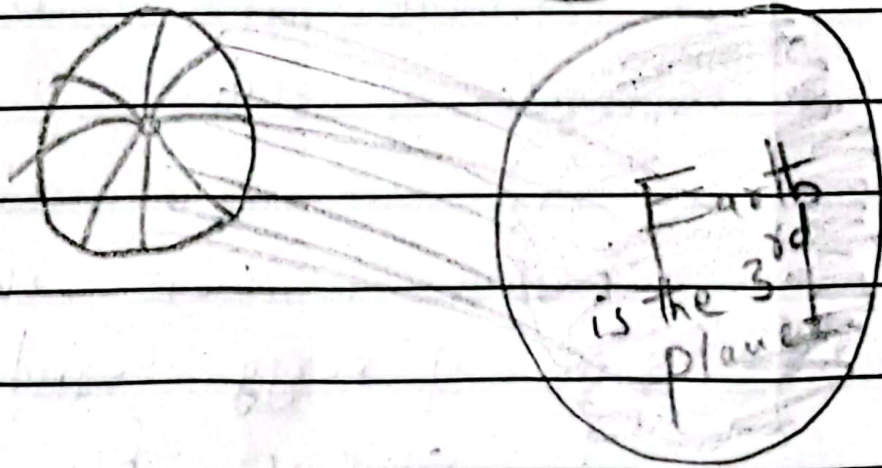
(ix) It is uncountable
in galaxy.

(ix) It is countable in galaxy.

(x) The huge amount
of stars in
galaxy.

(x) They only eight planets
in galaxy.

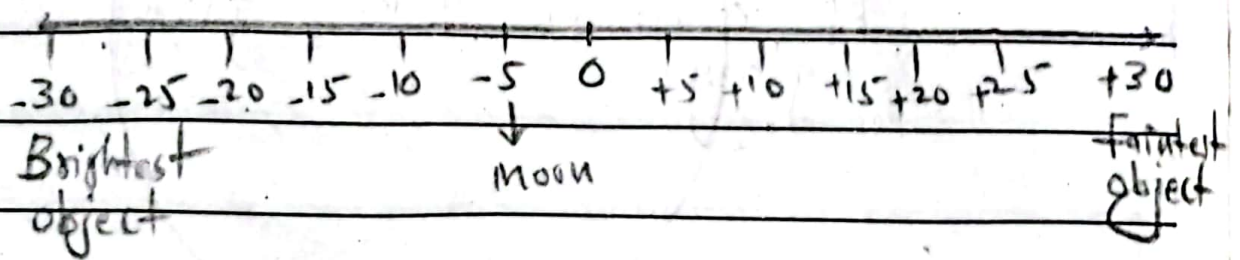
① Sun Figure ② Earth



⇒ Magnitude of star with example:

The measure of brightness of star is called magnitude of star. The settler scales that measures the range of +30 to -30.

Settler scale



Example: Sirius is a star with a magnitude of -1.46.

→ Sirius is a short wavelength, high energy and high temperature emitting blue light.

The color of star is correlated with their temperature:

The color of star is depends on wave length (λ) and wave length depends on magnitude of emitting light.

According to the Planck's equation:

$$E = \frac{hc}{\lambda}$$

Where E = Energy and λ = wavelength.

iii) Blue color	(ii) Red color
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The low wavelength of (Blue color), then high energy and high temperature.

(ii) Red color:

+ High wavelengths.

+ Low energy.

+ Low temperature.

(i) Sirius is a hot star with high energy and emitting blue light.

(ii) Betelgeuse: It emitting red light.

The star orbiting around the center of galaxy and planet orbiting around the sun. The magnitude of star measures brightness of star. The color of star depends on wavelength and wavelength depends on magnitude of light.

b) what is galaxy? The Earth belongs to which galaxy? 11

Question NO: 02

Answer:

b)

Outline

1)

Introduction

2)

Lenticular galaxy

3)

Irregular galaxy

3)

Spiral galaxy

4)

Milky way galaxy

5)

The Earth belongs to which galaxy.

6)

Conclusion.

The fundamental unit of galaxy is universe. The galaxy is composed of dust, stars, planets, dwarf planets, small solar system bodies. It is hundreds of thousands of galaxies exists in the universe.

⇒ Types of galaxy :

→ Lenticular galaxy :

It is abundant type of galaxy.
It is brighter collection of stars.
It has dim qualities.

Example : M49.

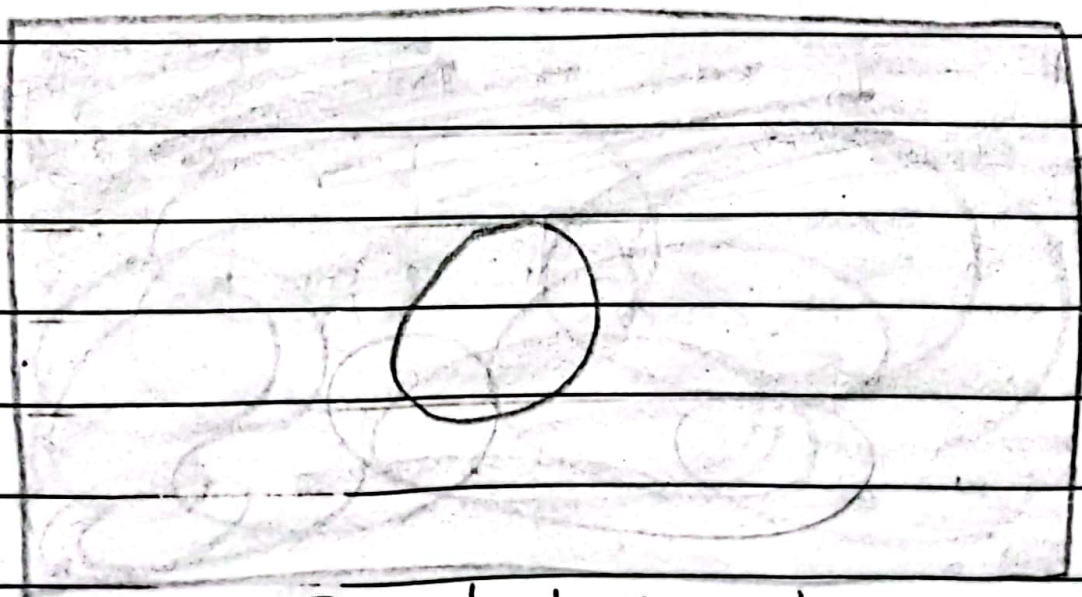


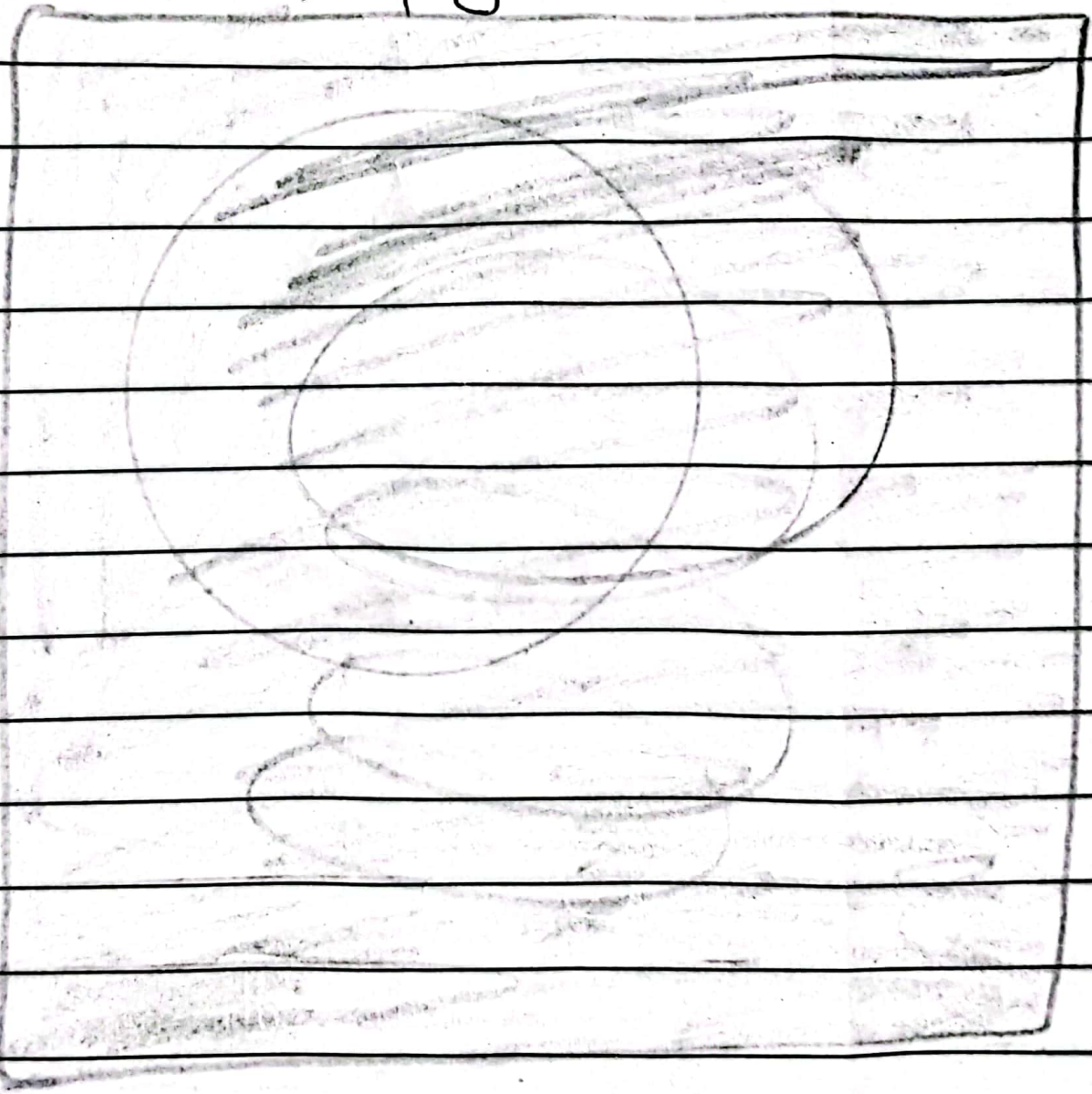
Fig: Lenticular galaxy

⇒ Irregular galaxy:

It has no particular shape.

It is not suitable in Hubble's classification.

⇒ Figure:

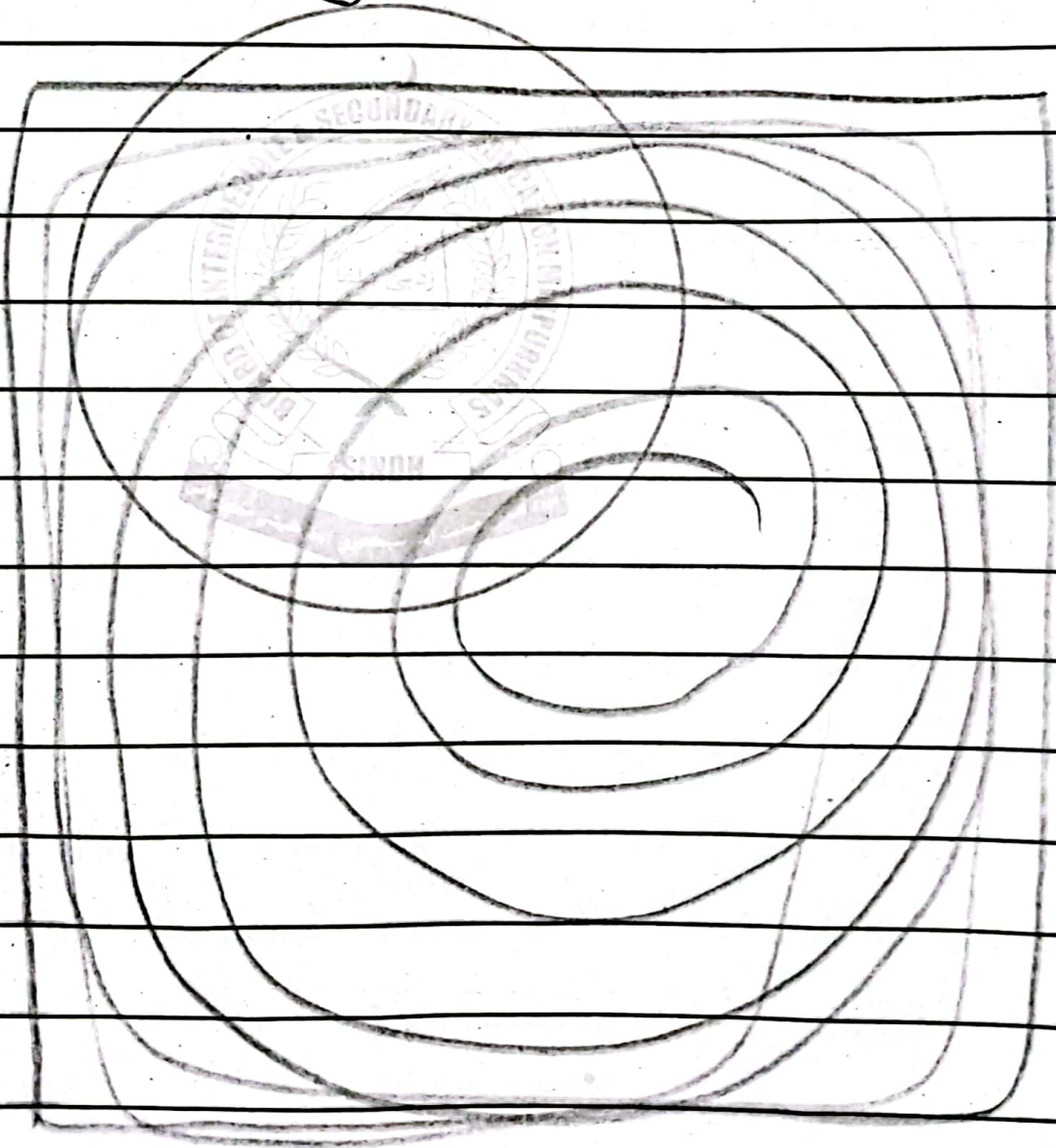


⇒ Spiral galaxy:

It is flat, rotating structure.

Example: Andromeda.

Fig:



⇒ Milky way galaxy :

It is disk like shaped.

It has diameter 100000 to 180000.

→ Nearest galaxy is the milky way galaxy is andromeda.

→ We live on earth. It belongs to milky way galaxy.

Fig:



The Earth belongs to "Milky way galaxy".

Galaxy contained dust, planets, stars, and solar system bodies. Irregular galaxy is not fit in Hubble's classification and earth is the 3rd planet belongs to the Milky way galaxy.