

Part BII

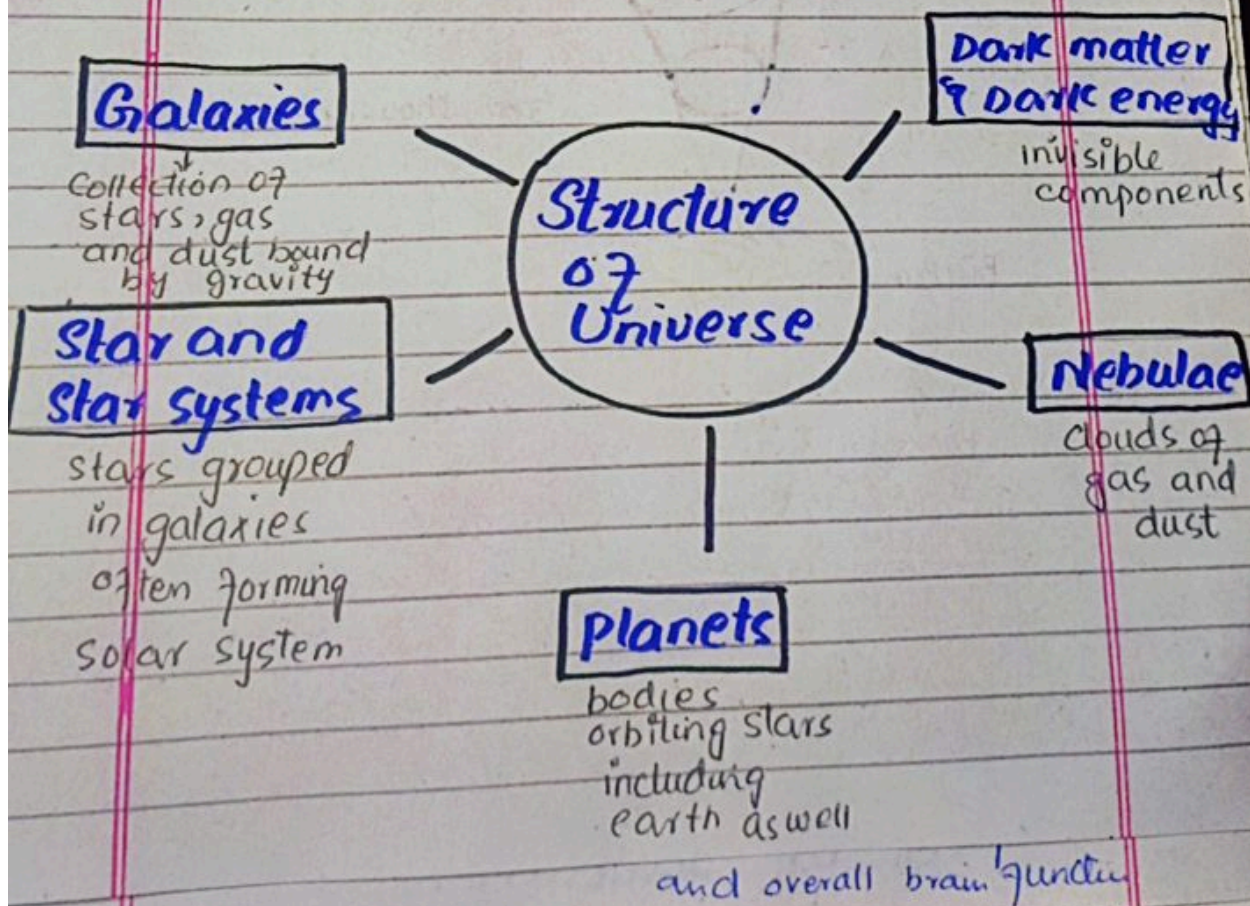
Question 02:

Part (a)

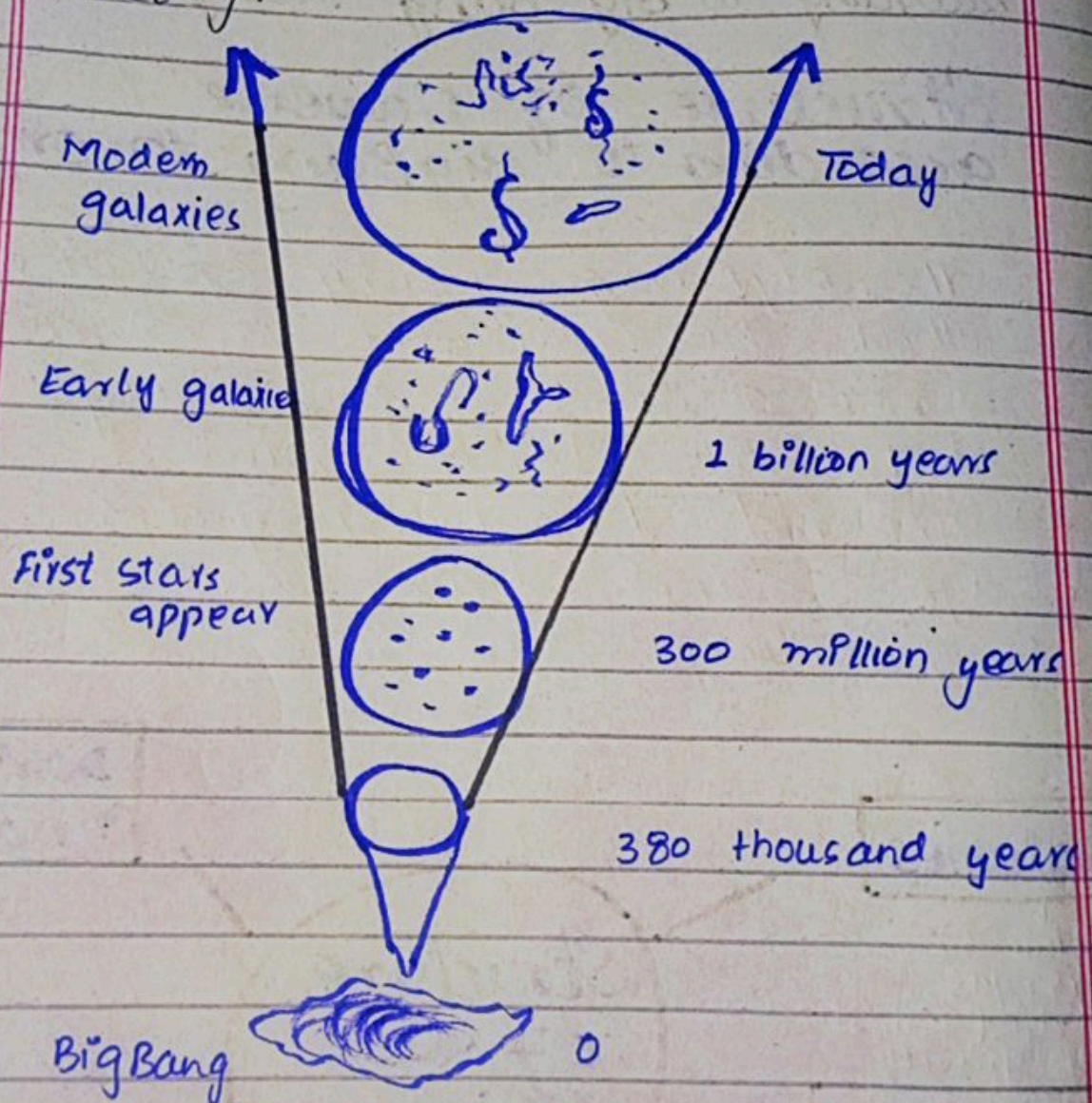
Describe the structure of universe according to big bang theory.

Structure of Universe according to Big Bang theory.

The big bang theory explains that the universe originated from a small, extremely hot and dense point around 13.8 billion years ago and has been expanding ever since.



The universe is expanding in all directions, containing billions of galaxies, stars, planets and vast amount of invisible matter and energy as predicted by the Big Bang theory.

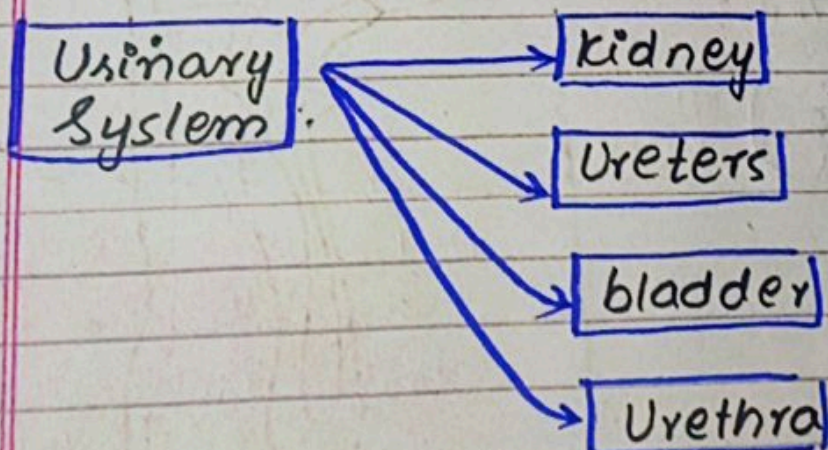


(b) Part:

Define Urinary System and explain the working of Nephron.

Urinary System:

The urinary system is the part of the body that produces, stores, eliminates urine and plays a crucial role in removing waste products and maintain water and salt balance in the body.



Working of Nephron:

The Nephron is the functional unit of the kidney where urine is formed.

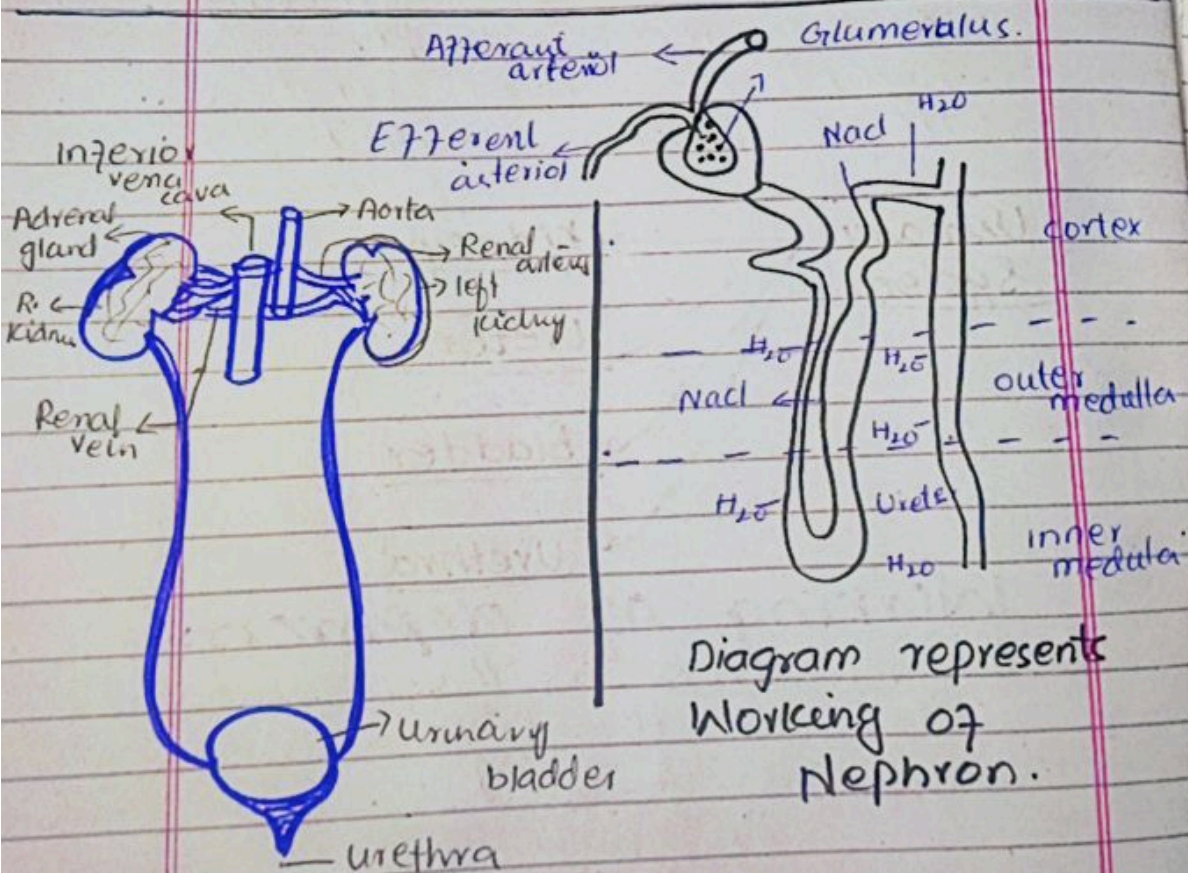
Steps of Urine Formation.

Filteration

Reabsorption

Secretion

Excretion

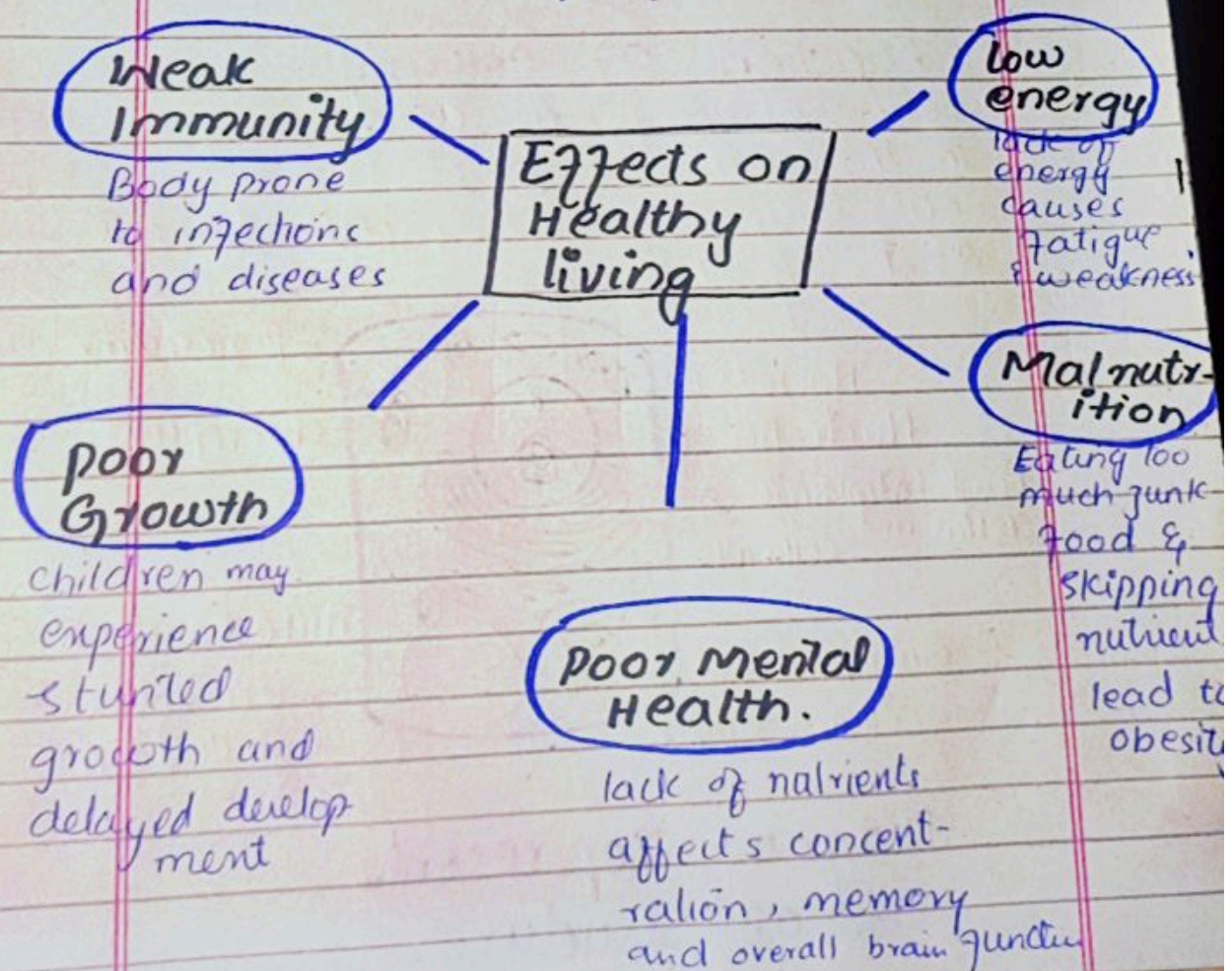


(C) part.

What is unbalanced diet?
How it affects the healthy living?

Unbalanced Diet:

An unbalanced diet is a diet that does not contain the right amount of nutrients such as carbohydrates, proteins, fats, vitamins, and minerals - needed for healthy growth and body functions.



Part(d)

Question:

Describe the structure and function of cell wall, cell membrane, cytoplasm and mitochondria.

① Cell Wall :- Structure.

The cell wall is a rigid layer that surrounds the plant cell and it is made up of cellulose in plants.

Function of cell wall :-

Cell wall supports, and shape to the cell. It protects the cell from mechanical damage and pathogens.

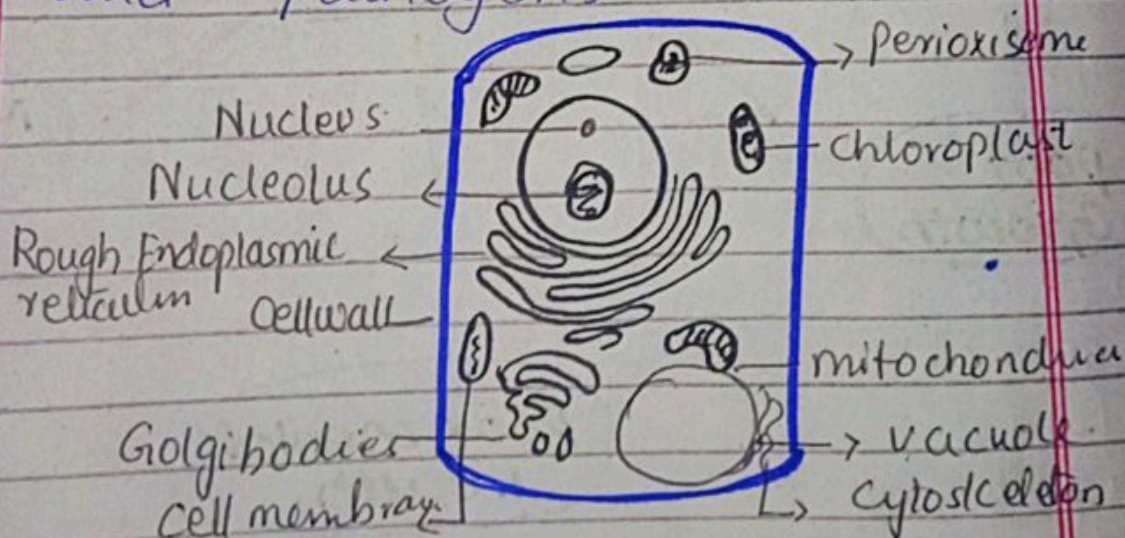


Diagram represents cell wall structure.

② cell membrane:

Structure

cell membrane is a thin, flexible layer that is made up of lipids and proteins that surrounds all cells.

Function

It controls entry and exit of substances in and out of the cell. It also protects and maintains internal environment.

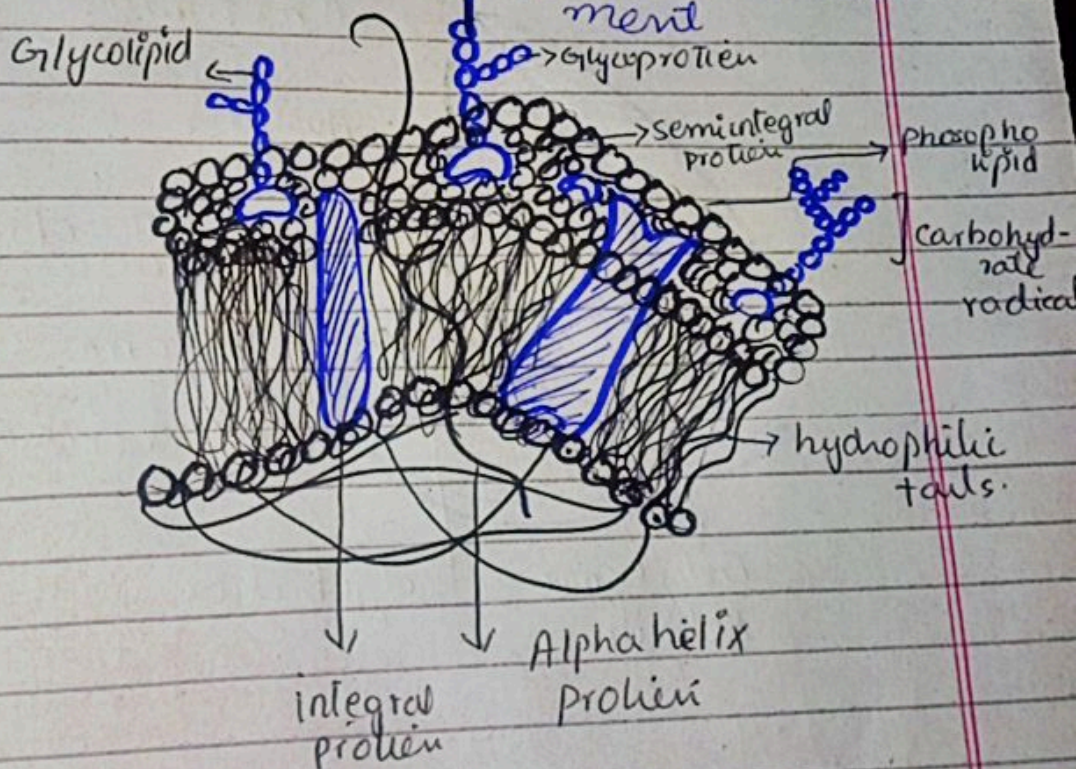


Diagram presents cell membrane structure.

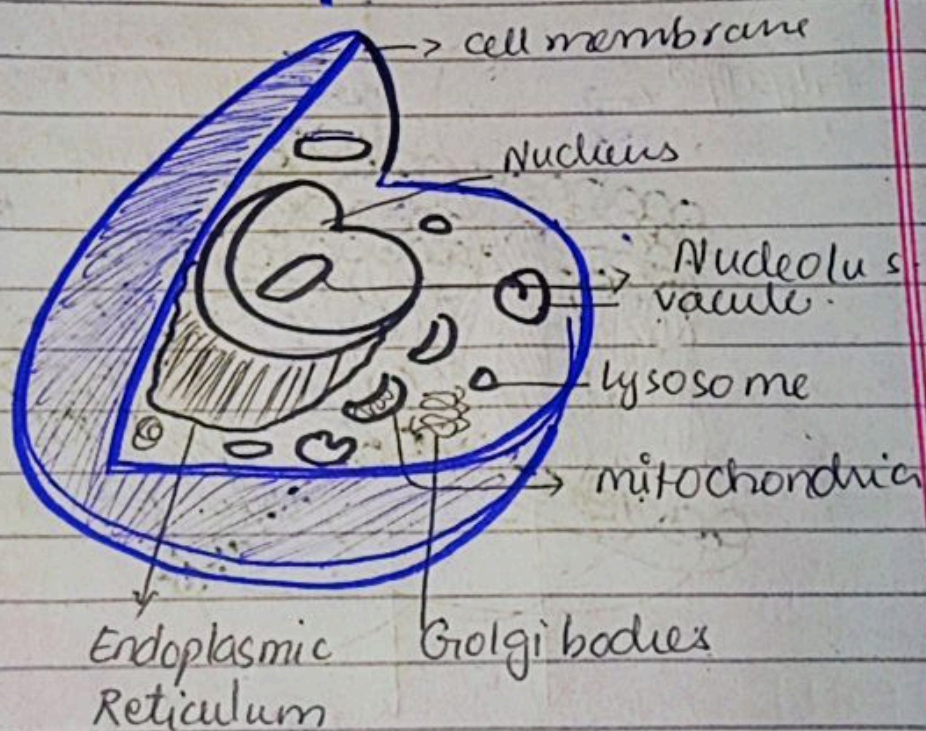
③ Cytoplasm:-

Structure

cytoplasm is Jelly-like substance that filled the space between the cell membrane and nucleus.

Function

Its main function is that it holds organelles in place. It also provides a medium for chemical reactions inside the cell.



Mitochondria:

Structure

Mitochondria are oval-shaped double membrane organelles with folded inner membranes called cristae.

Function:

It produces energy (ATP) through cellular respiration. It is also called power house of the cell because it provides energy for all cell activities.

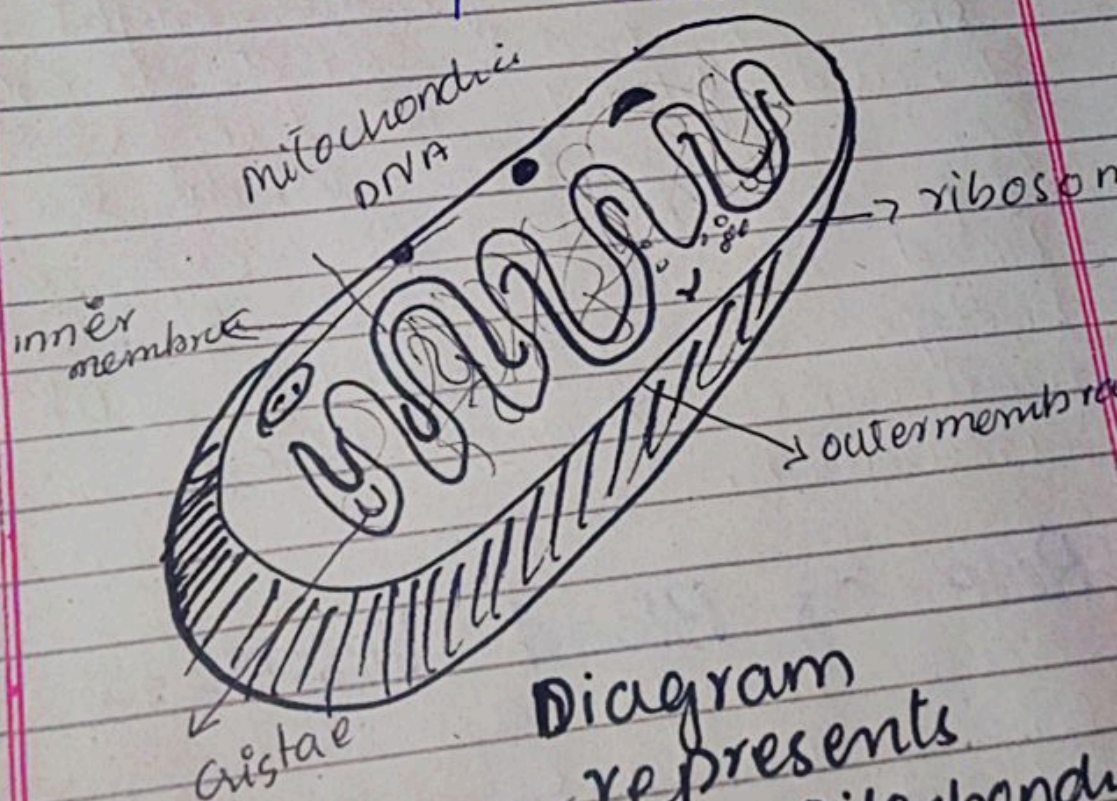


Diagram represents mitochondria structure.

Q3. Part (a)

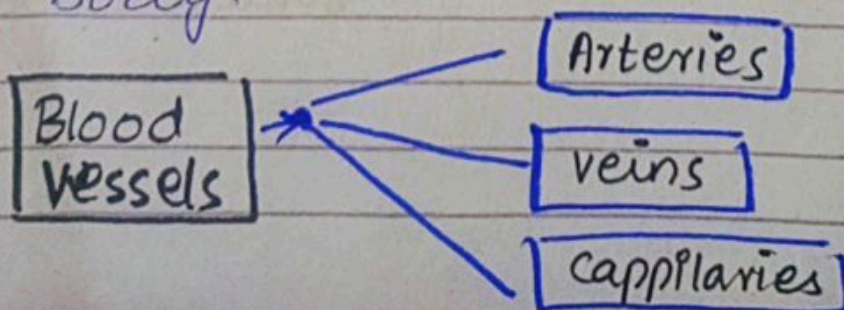
Explain the role of Heart and blood vessels in circulation

@ Role of Heart in Circulation

The heart is a muscular organ that works as a pump. It continuously pump blood to all parts of the body. The right side of heart send de-oxygenated blood to lungs for oxygenation, while the left side pumps oxygenated blood to the rest of the body. This pumping action maintains proper blood circulation.

(b) Role of Blood Vessels:-

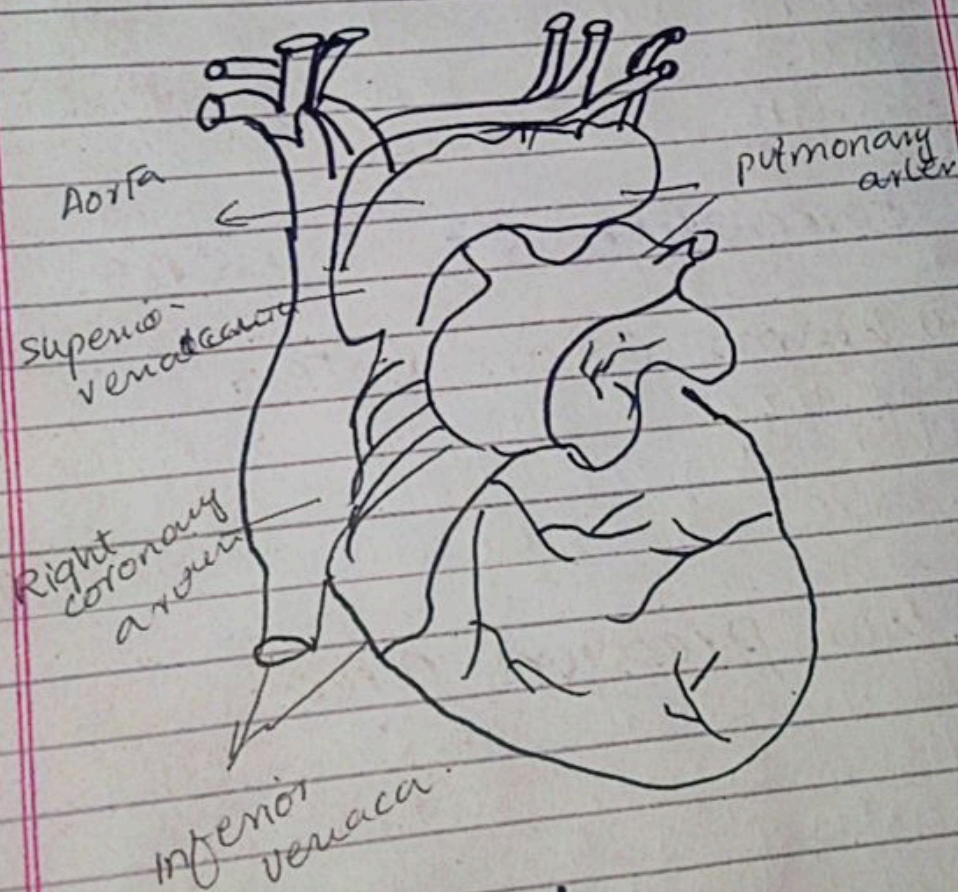
Blood vessels are tube like structures that carry blood throughout the body.



Arteries: carry oxygenated blood away from the heart.

Veins: bring deoxygenated blood back to the heart.

capillaries: allow exchange of oxygen, nutrients.



Human Heart

(b)

What is cyclone? Describe formation of cyclone.

Cyclone:

A cyclone is a large rotating storm that forms over warm ocean water and is characterized by strong winds, heavy rain fall and low air pressure as its center.

Formation of a Cyclone:

(a) Warm Ocean water:

cyclone begins to form over warm water of sea where temperature is high.

(b) Low pressure area:

warm air rises from the ocean surface, creating a low-pressure area below.

(c) Rising air and cloud formation:

As warm, moist air rises it cools and condenses to form clouds and rain.

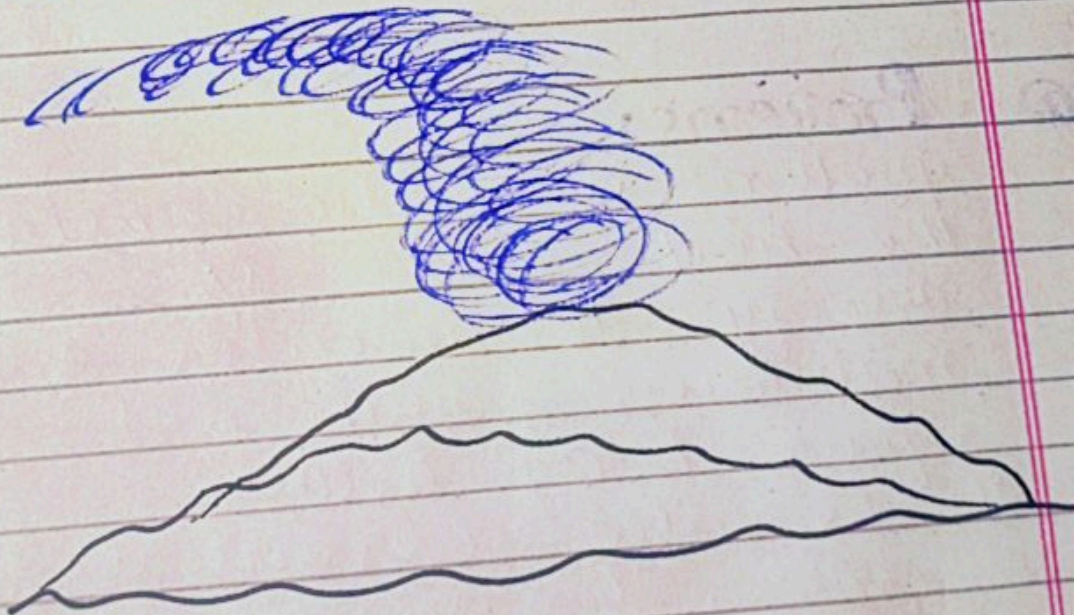
(3)

(d) Rotation of Winds:

Due to earth's rotation, the air starts moving in circular direction around the low-pressure center.

(e) Development of cyclone.

The system grows stronger as more warm air rises, forming fully developed cyclone with very strong winds and heavy rainfall.



cyclone

(c)

Enlist function of the following:

① **Carbohydrates:**

Carbohydrates are the main sources of energy. It plays a powerful role in functioning of brain and metabolic system.

② **Proteins:-**

proteins are also considered the best source of energy. It provides and maintains growth and repairs body tissues. It is also essential for enzymes, hormones, and antibiotics.

Vitamins:-

Vitamins are the source of energy, which is essential for ^{body} functions. It helps in absorbing fat-soluble vitamins (A D E K).

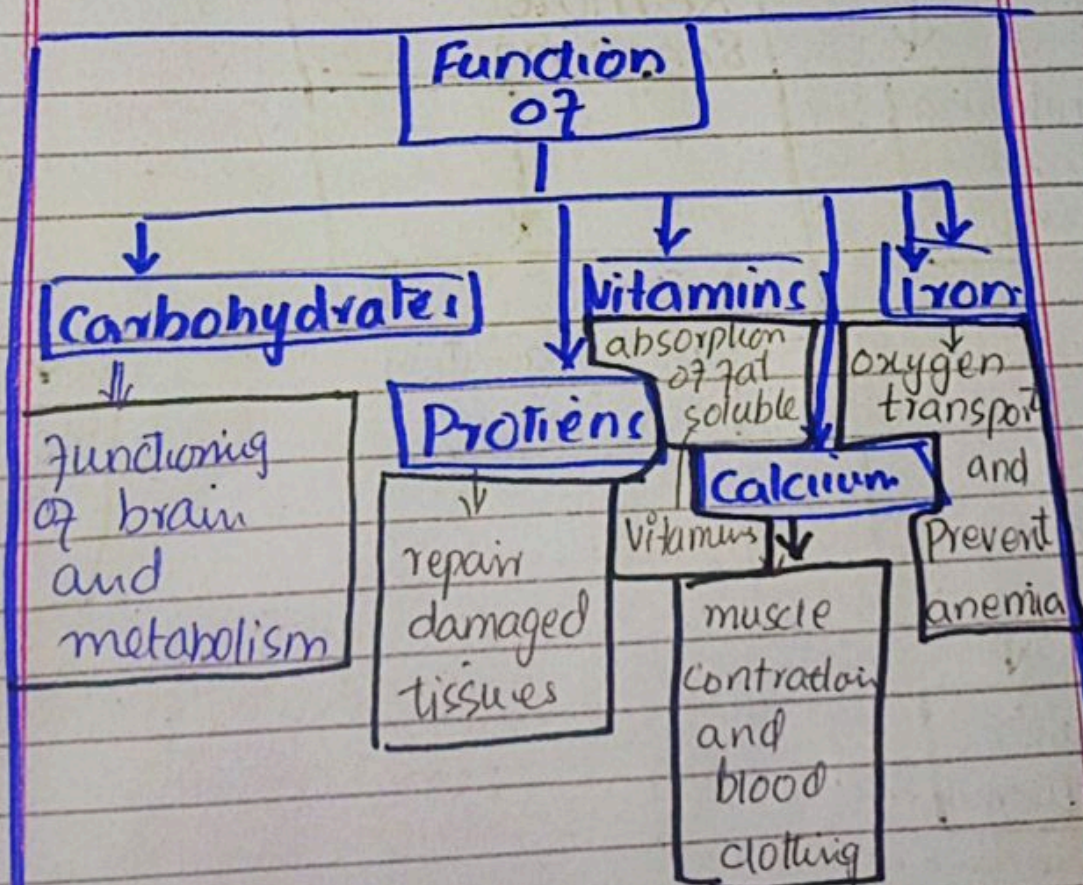
Function of Calcium:-

It play a pivotal role in strengthening bones.

It helps in muscle contraction and blood clotting.

Iron's Function.

It required for the formation of Hemoglobin. It helps in Oxygen transport and prevents anemia.

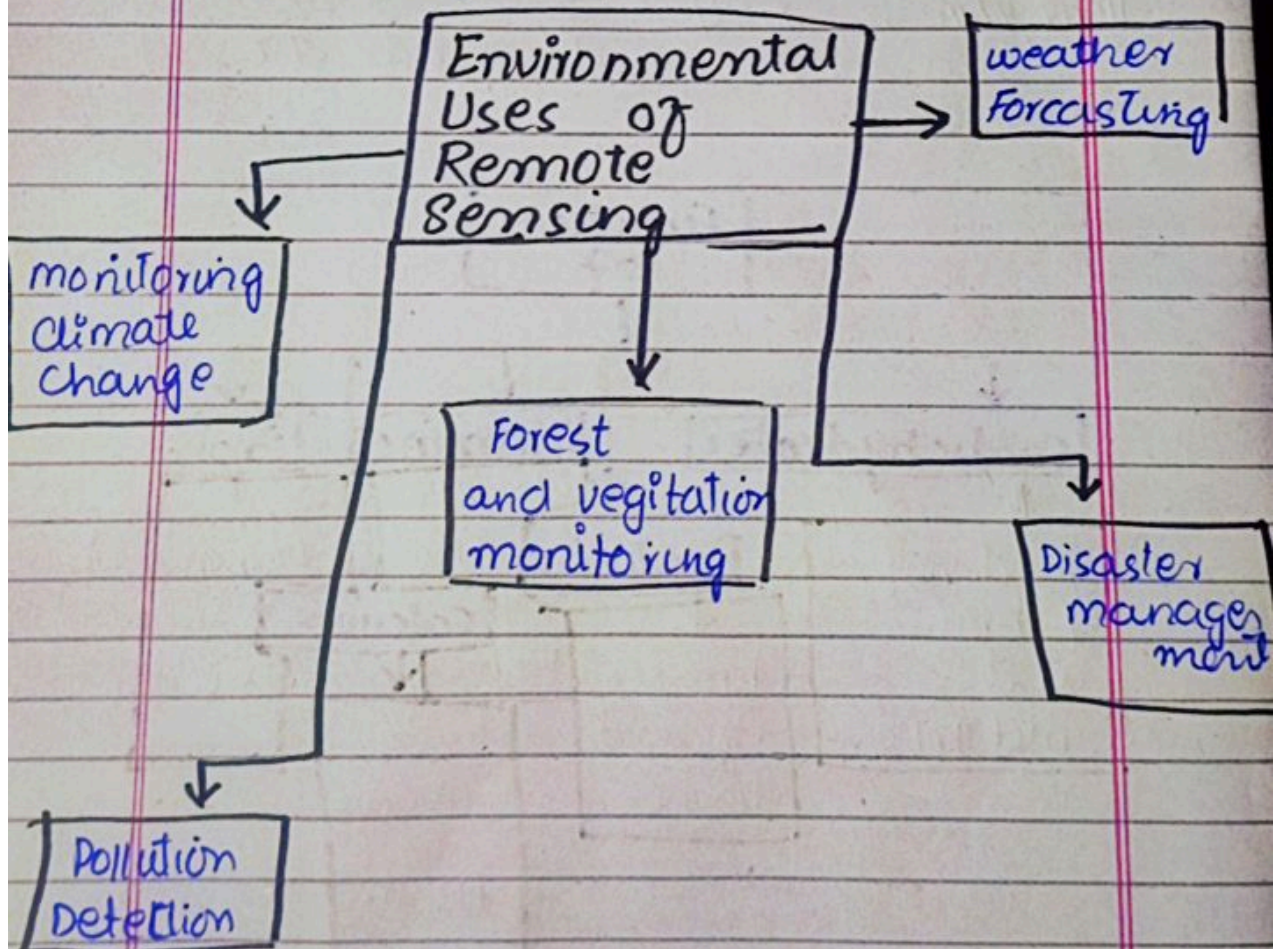


(d)

How remote sensing can be employed for environmental purposes?

Remote Sensing

Remote Sensing is the science of collecting information about the earth's surface without direct contact, using satellites, drones, or aircraft.



Part C.

Q6.

- (a) pointing a ^{woman} ~~mother~~ 'Ahsan said, Her granddaughter is the only daughter of my brother.' How the woman related to Ahsan?

Solution:

- ① Ahsan pointed woman.
- ② The daughter must be Ahsan's niece.
- ③ Her grandmother is the mother of Ahsan's brother
- ④ Therefore the woman is Ahsan's mother.
- ⑤ Relationship between Ahsan and woman is Mother son

Q 7 Part (c)

A man is 24 years older than his son
In two years, his age will be twice the
age of his son. The present age of son?

Solution:

son's age =	$x+2$	2 years after
man's age	$x+26$	

According to the given condition

$$x+26 = 2(x+2)$$

$$x+26 = 2x+4$$

~~xxxxxxxx~~

$$2x - x = -4 + 26$$

$$x = +22$$

son's present age
is

22

Q 8.

(a) part (c) : Find the odd man out in following anagram

(a) KTRIS : ~~Thinks~~ skirt

(a) THRSI = shirt

(b) AOTC = coat

(c) Eoubsl = Bousle

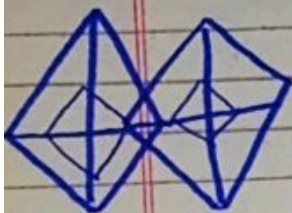
(e) Retaews. = sweater

odd man is
Bousle

Q8 (D) part

How many triangles can you find.

There are total 8 triangle in
2 main squares
 $4+4 = 8$



8 triangles in
sub squares.

$$4+4 = 8$$

4 triangle from the combination
of double triangle itself

total $= 4+4 = 8$

Triangle formed from touching
point $= 2$

so $8+8+8+2 = 26$

total triangle = 26

