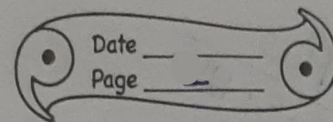


THE FUNDAMENTAL UNIT OF LIFE



16/5/21

EXERCISE

1: Make a comparison and write down the ways in which plant cells are different from animal cells.

Ans: Animal cell

Plant cell

→ Do not have a fixed shape.

→ Have a fixed shape.

→ Do not have a cell wall.

→ Have a cell wall.

→ Do not have plastids.

→ They have plastids.

→ Have centrioles.

→ Don't have centrioles.

→ Do not have vacuoles or very small vacuoles.

→ Large vacuoles.

2: How is a prokaryotic cell different from a eukaryotic cell?

Ans: Prokaryotic cell

Eukaryotic cell

→ Nucleus is absent.

→ Nucleus is present.

→ One chromosome is present but not true chromosome plastids.

→ More than one chromosome present.

→ Unicellular.

→ Multicellular

→ Vacuoles absent.

→ Vacuoles present.

→ Sexual reproduction is absent.

→ Sexual reproduction is present.

→ Ex- Bacterians

→ Ex- Animals

3. What would happen if the plasma membrane ruptures or breaks down?

Ans. Plasma membrane is called as selectively permeable barrier between cell and external environment (called surroundings) because it allows only selected materials to move in and out of cell. If the cell membrane ruptures it will result in the exposure of cell component to external environment causing cell death.

4. What would happen to the life of cell if there was no golgi apparatus?

Ans. If there was no Golgi Apparatus, then the various substances would not be able to packaged and sent to their functioning destinations. The substances like protein and lipid are important for plasma membrane formation, but if golgi apparatus is absent then the plasma membrane will be affected because it needs to grow larger for cell division.

5. Which organelle is known as powerhouse of the cell? Why?

Ans: Mitochondria are the organelle which is known as powerhouse of cell because they are present inside cell and releases energy from food in form of ATP (Adenosine triphosphate) which is required to carry out several chemical activities.

6. Where do the lipids and proteins constituting the cell membrane get synthesised?

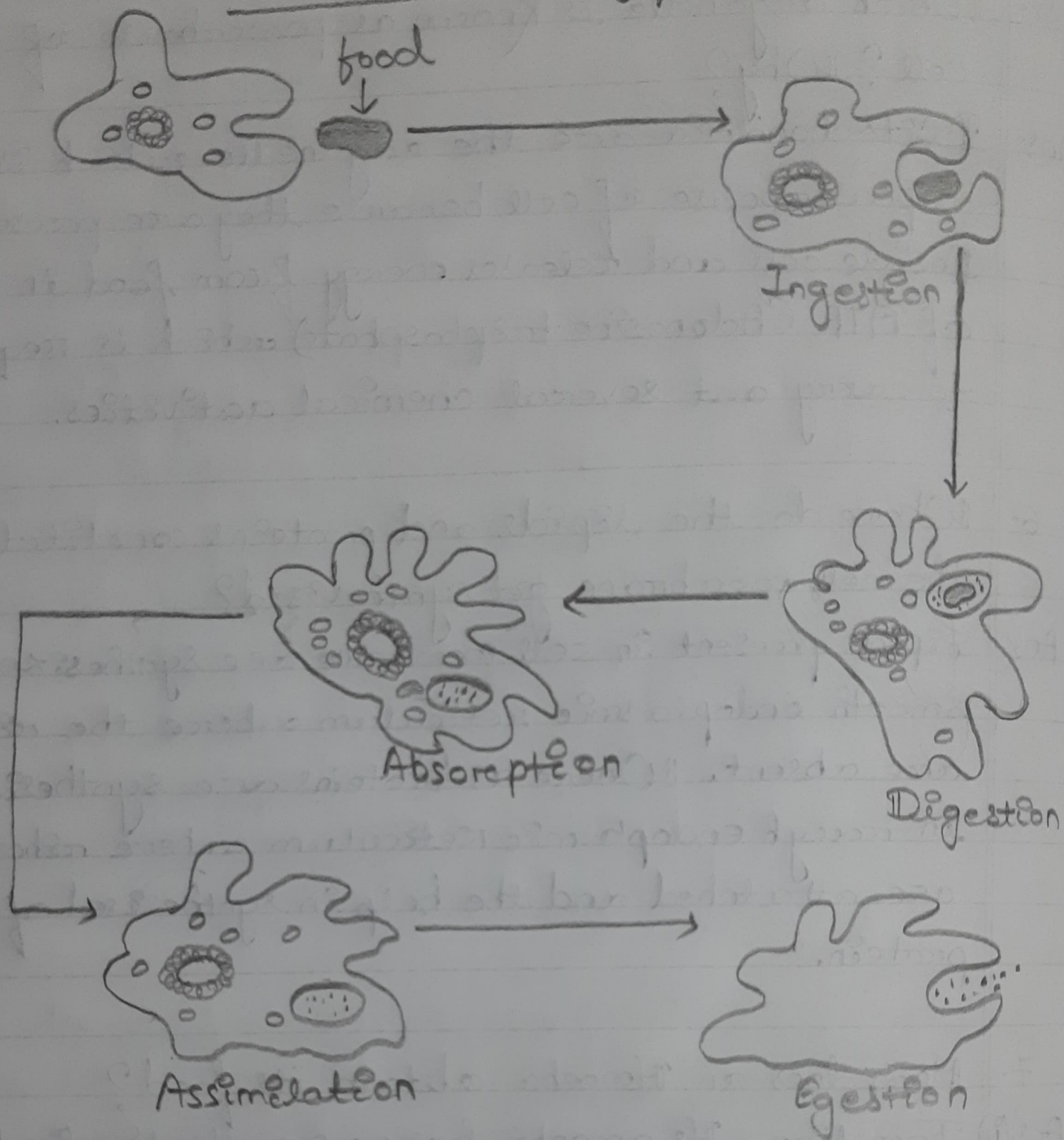
Ans: Lipids present in cell membrane are synthesised in smooth endoplasmic reticulum where the ribosomes are absent. Where as Proteins are synthesised in rough endoplasmic reticulum where ribosomes are attached and they help in synthesised of protein.

7. How does an Amoeba obtain its food?

Ans: (i) Ingestion - The amoeba has no mouth, the food is ingested by using pseudopodia. When the food comes near amoeba it engests the food forming temporary finger like projections called pseudopodia around it. A food vacuole forms considering it as temporary stomach of amoeba.

16.5

Amoeba Obtaining Food



(ii) **Digestion** - In amoeba, the food vacuole helps to digest the food by digestive enzymes. These enzymes break down the food through chemical reactions.

(iii) Absorption - The digested food present in food vacuole of Amoeba is absorbed directly in cytoplasm by diffusion. Then the food spreads out from food vacuole and food vacuole disappears.

(iv) Assimilation - A part of food is absorbed which is used to obtain energy through respiration and leads to the growth of Amoeba which results in dividing of two daughter cells.

(v) Egestion - When a considerable amount of food collects in amoeba, the cell membrane ruptures at any place and undigested food is thrown out from amoeba's body.

8. What is osmosis? And diffusion?

Ans: When the solvent moves from the area of dilute solution to the area of concentrated solution through a semi permeable membrane in order to equalize the concentration level of both the solution, the process is called as osmosis.

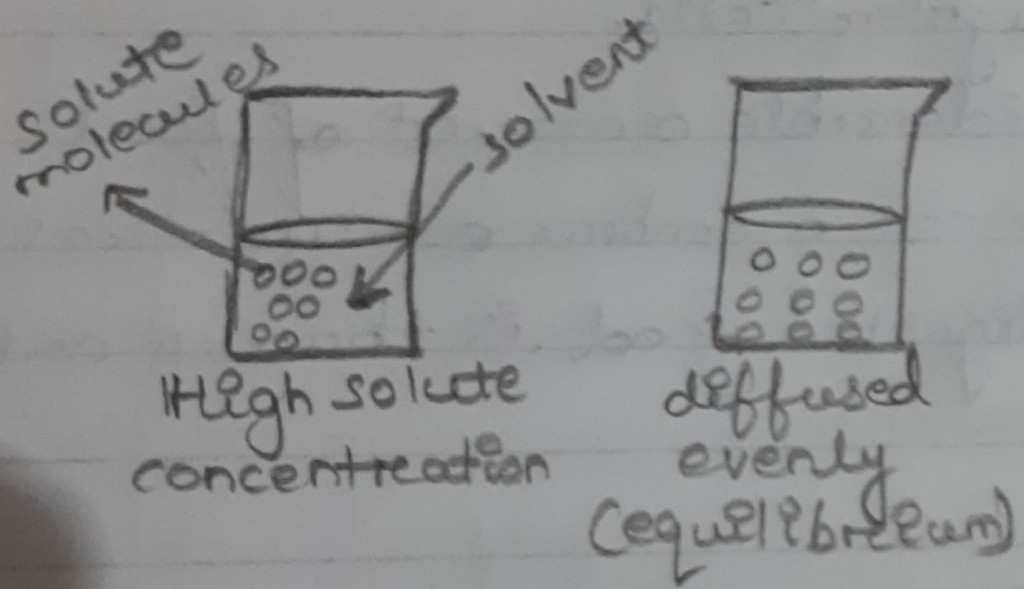
When the particles of any material move from a region of higher concentration to lower concentration until the equilibrium is reached, the process is known as diffusion.

The examples of osmosis and diffusion:-

- Ex of Osmosis - roots absorb water from the soil through osmosis.
- Ex of diffusion - when you spray perfume, its fragrance spreads in air through diffusion.

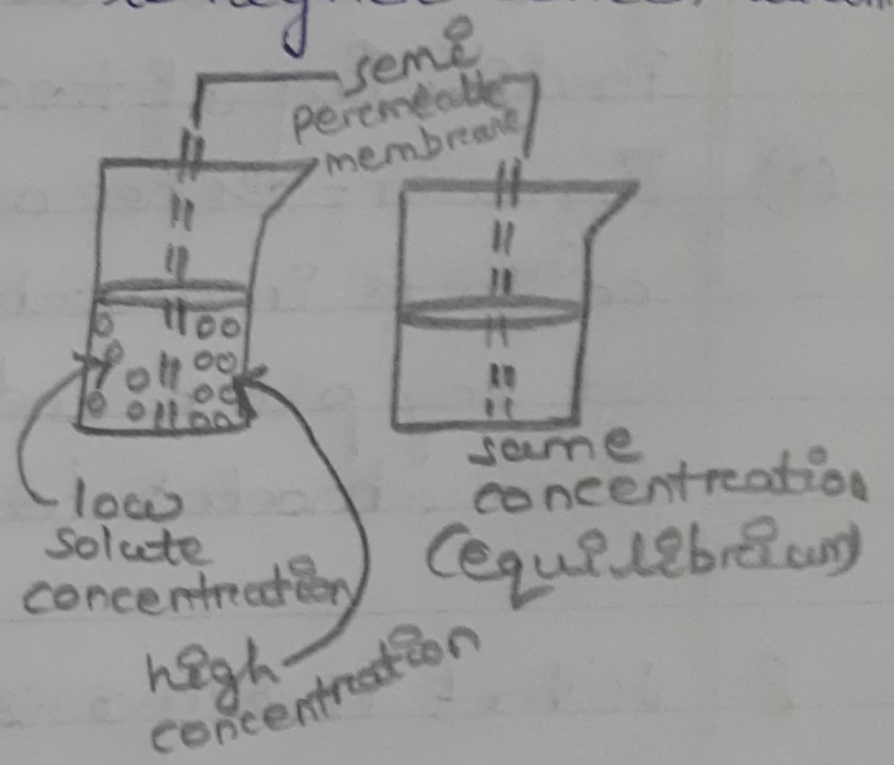
Diffusion

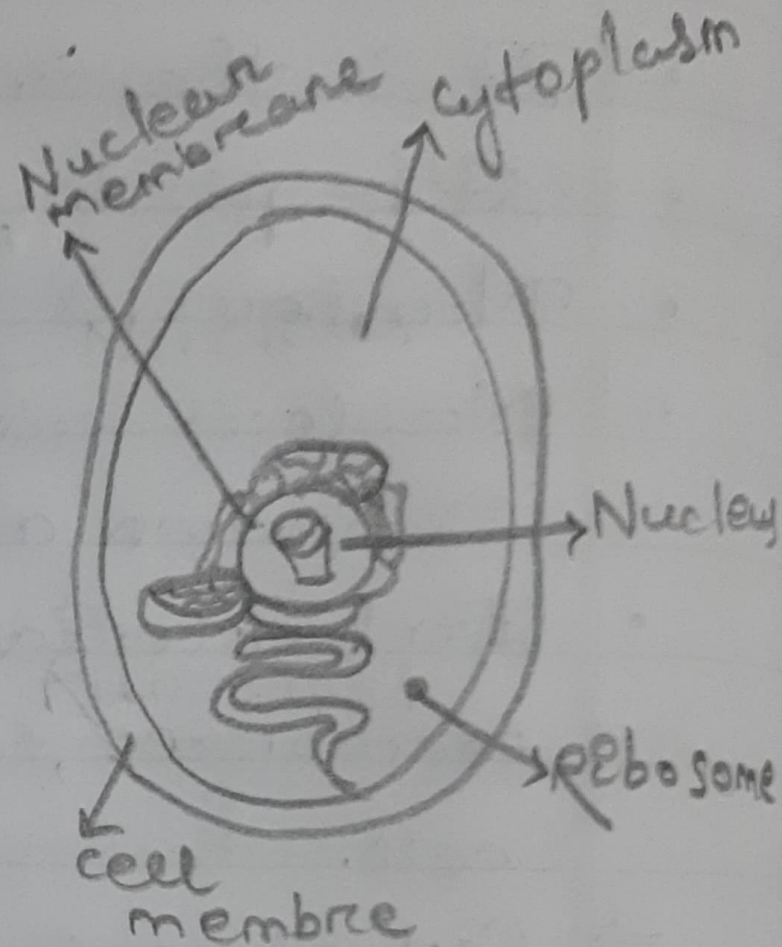
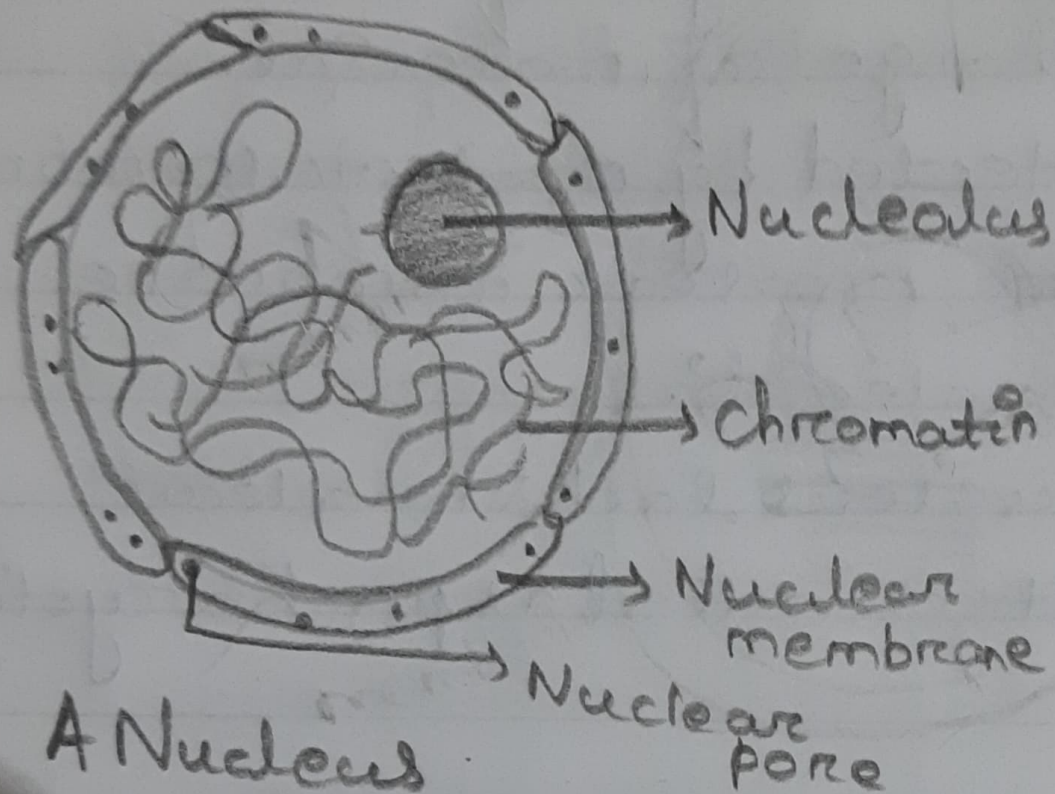
Solute molecules move from higher to lower concentration.

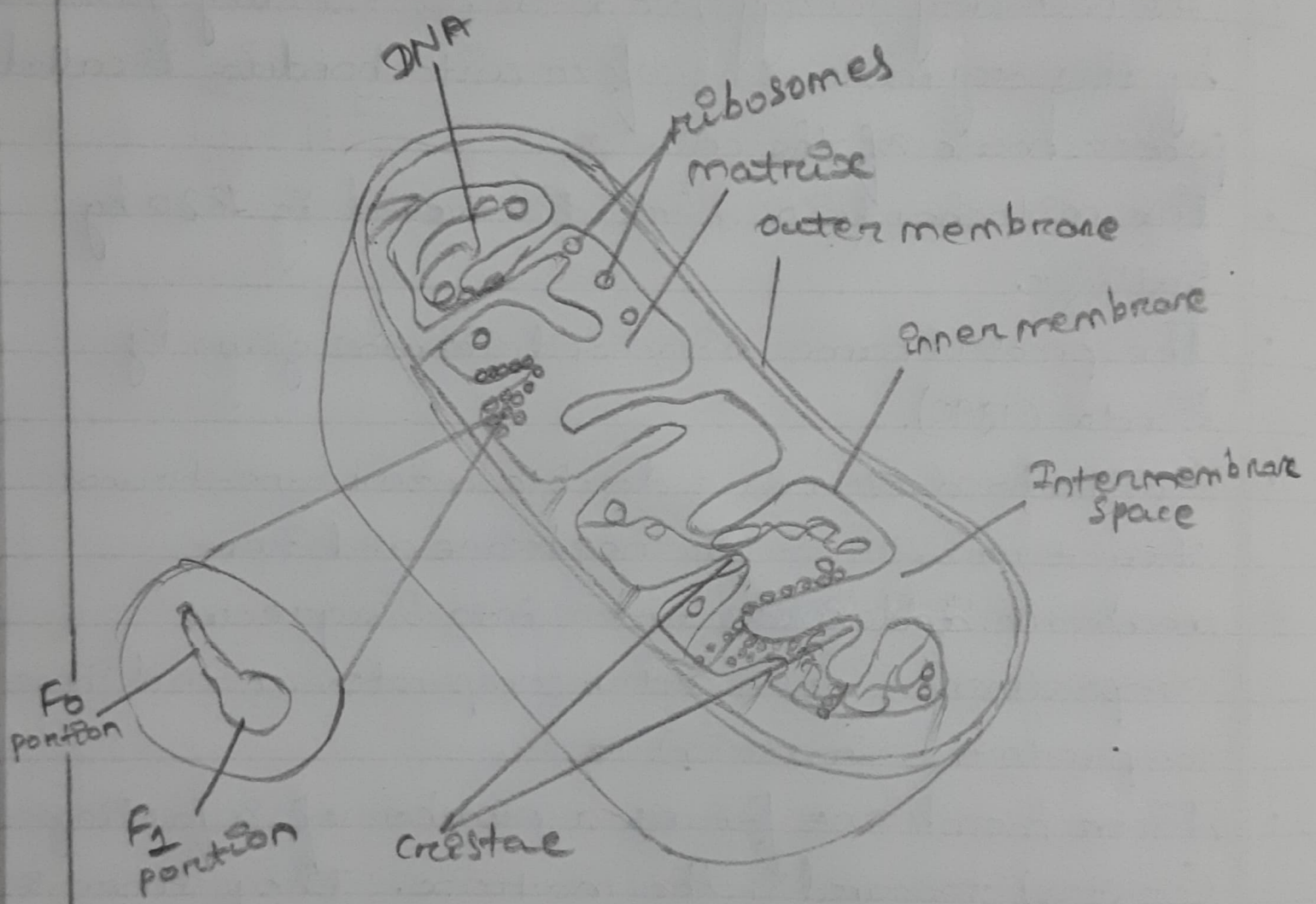
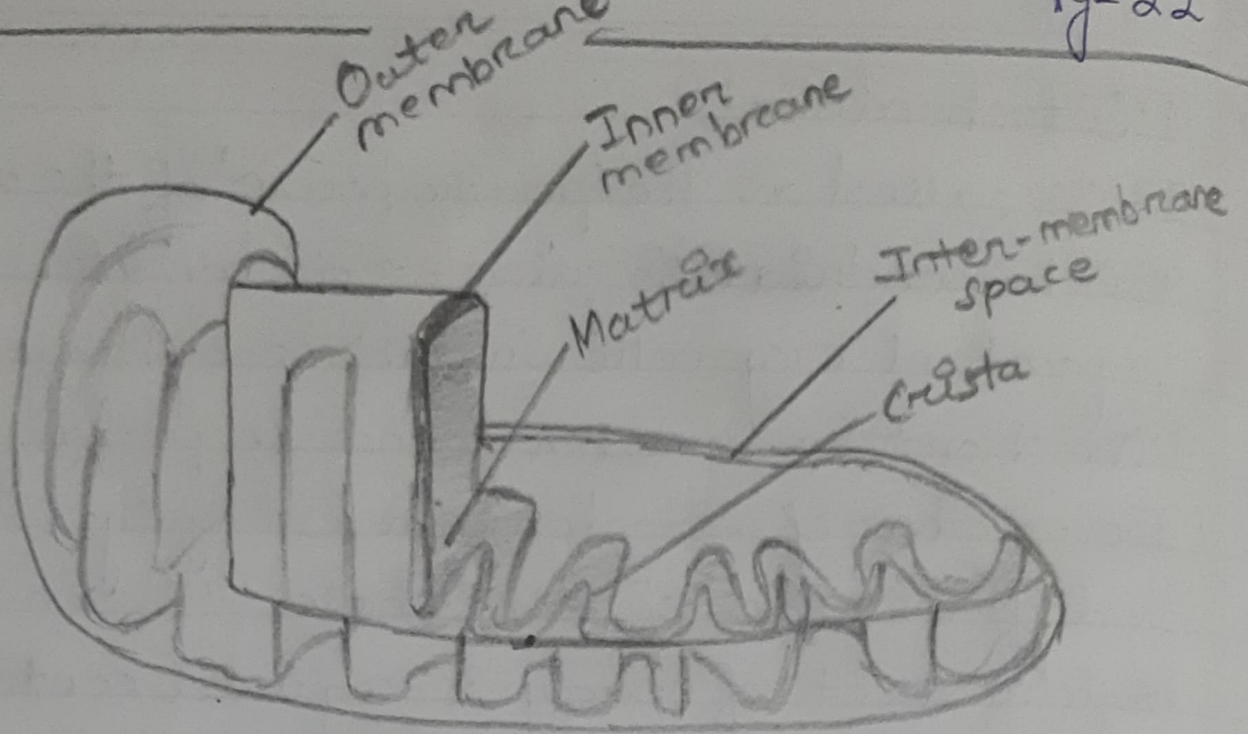


Osmosis

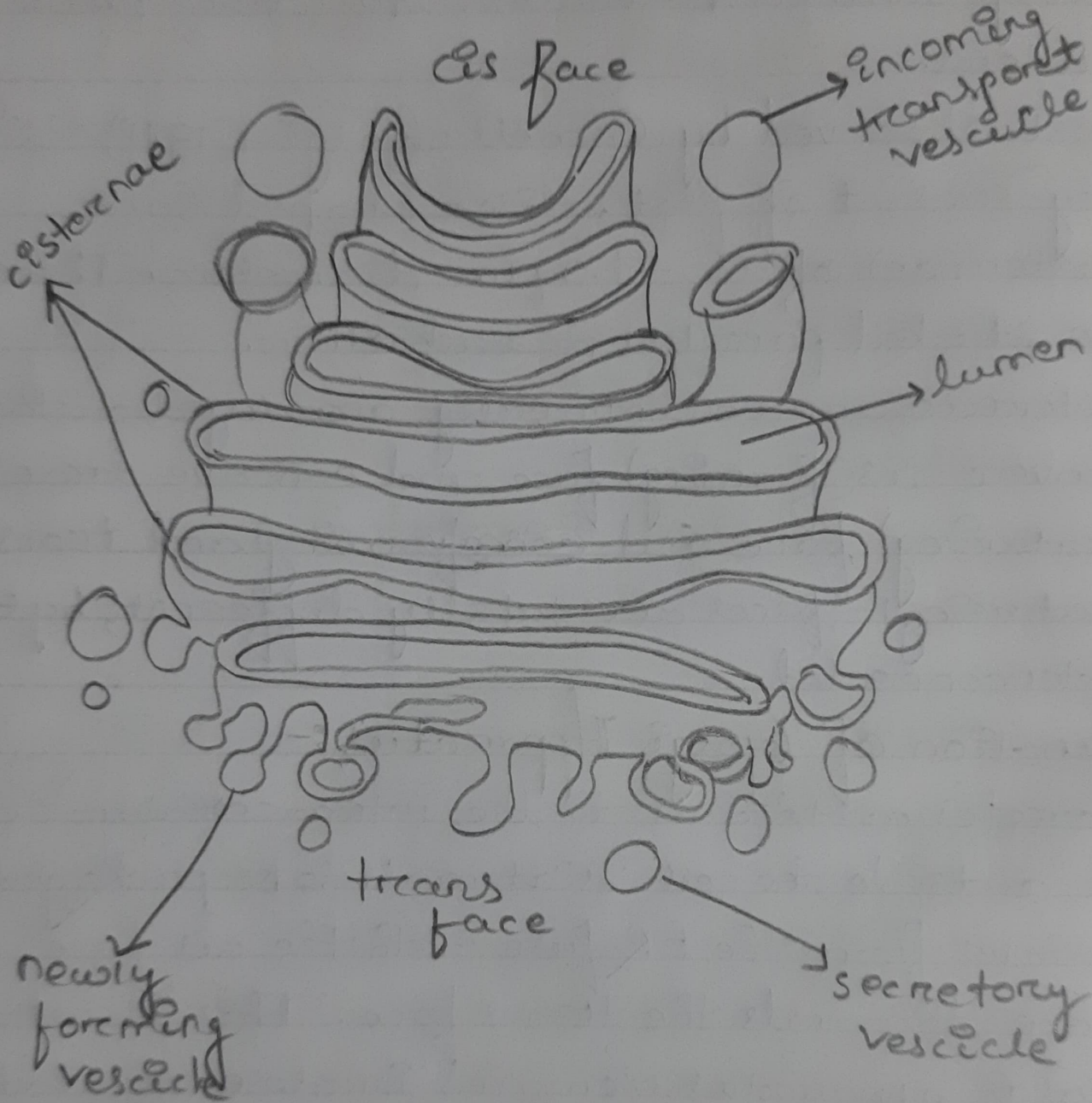
Solvent molecules move from lower to higher concentration.



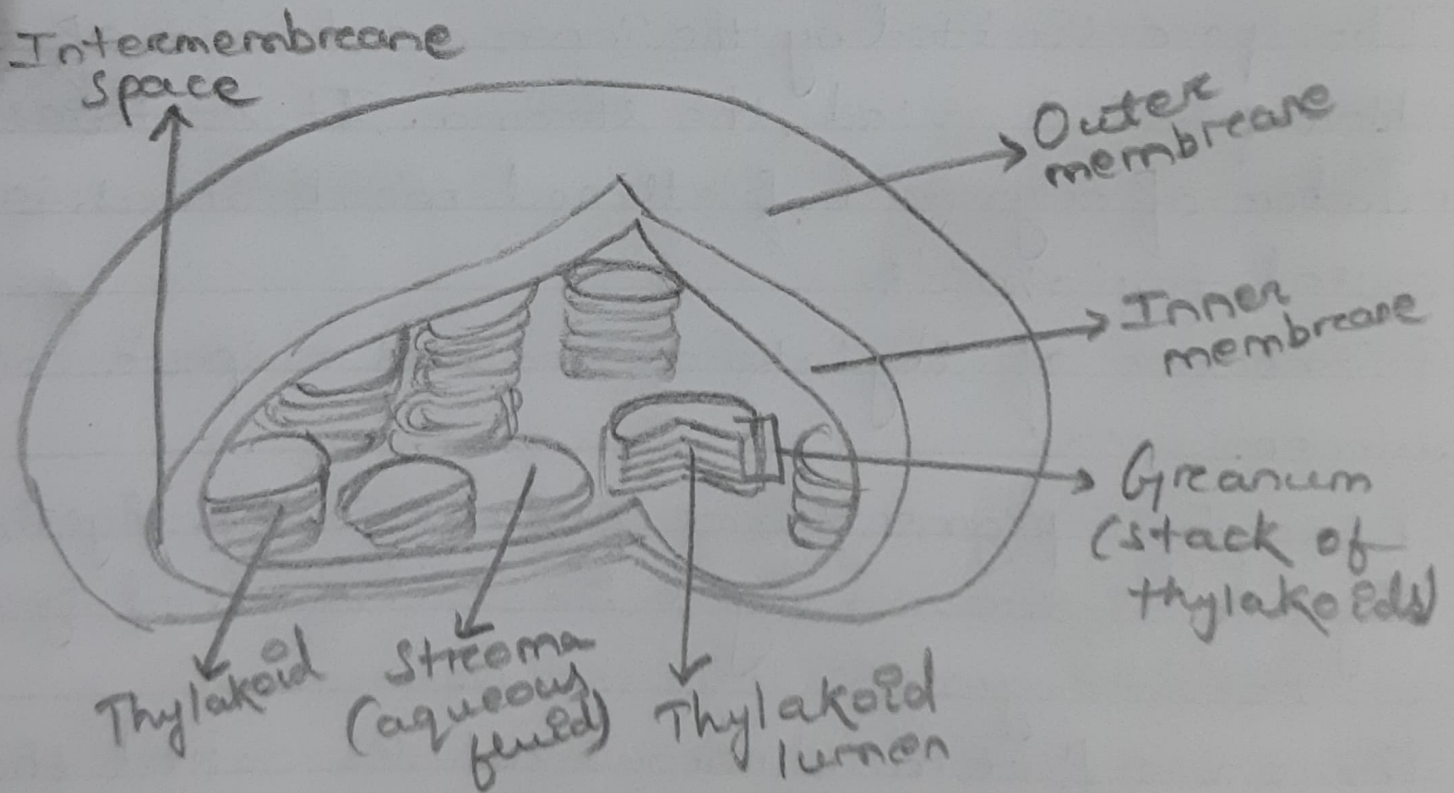
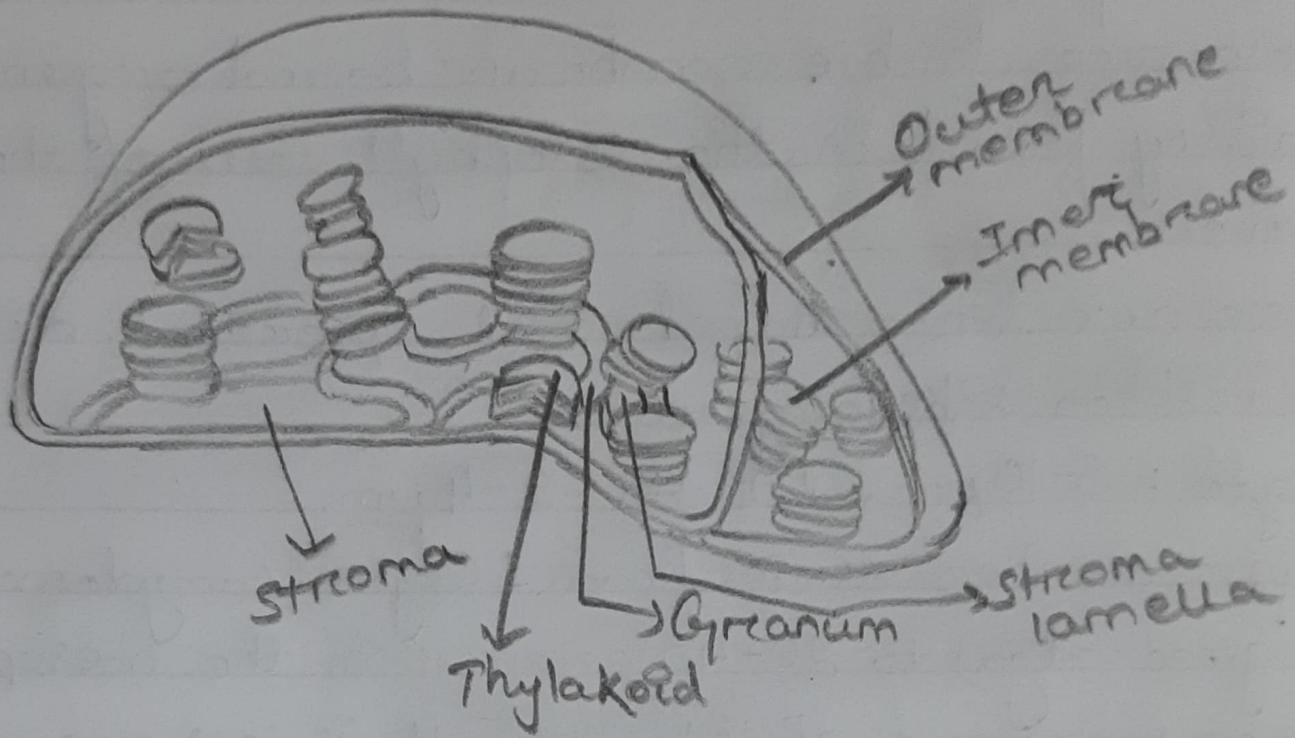




Mitochondria



Golgi Apparatus



Chloroplast (plastid)