Exercise:

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

Animal cell	Differences	Plant cell
Do not have fixed shape	Shape	Have fixed shape
Do not have cell wall	Cell wall	Have cell wall
Do not have vacuoles (or - small)	Vacuoles	Large vacuoles
Do not have chloroplast	Chloroplasts	Have chloroplast
Have centrioles	Centrioles	do not have centrioles
Glycogen	Food storage	starch

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

	Prokaryotes	Eukaryotes
1. Size and external appearance	Small about 0.5 micrometers.	Upto 40 micrometers

• appearance	Bacterial cells also contain flagellum, plasmid and capsule	
• Organelles	Lacks membrane bound nucleus and membrane bound organelles	Membrane bound organelles nucleus, mitochondria and chloroplasts GA (Golgi apparatus) ER (Endoplasmic reticulum) & lysosomes
• Cell wall structure	Rigid, formed from glycoproteins (mainly murein)	Fungi: rigid, formed from polysaccharide, chitin, plant: rigid, formed from polysaccharide Eg. cellulase
• Genetic material	circular DNA in cytoplasm	DNA in form of linear chromosomes (in nucleus)
• Ribosome	70S	80S

3. What happens if plasma membrane ruptures?

Ans) If the plasma membrane suddenly breaks or ruptures then the exchange of substances in and out of cell will not be proper and the cell's organelles will combine with external function of cell and indeed the cell will die.

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

Ans) * If they were no golgi apparatus in the cell, then the packaged material would not be dispatched to various targets inside and outside the cell.

* Without it, there will be no such place inside the cell for the storage, modification and packaging of products in vesicles.

* If there will be no golgi apparatus there will be no synthesis of cell wall, plasma membrane and lysosomes.

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

Ans) Mitochondria ~~are~~ is the site of aerobic respiration and known as the powerhouses of the cell. The energy required for various chemical activities needed for life is released by mitochondria in the form of ATP (Adenosine triphosphate)

molecules. ATP is known as the energy currency of the cell. The body uses energy stored in ATP for making new chemical compounds and for mechanical work.

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

Ans) Lipids are synthesized in the smooth endoplasmic reticulum (SER), and the proteins are synthesized in the rough endoplasmic (RER).

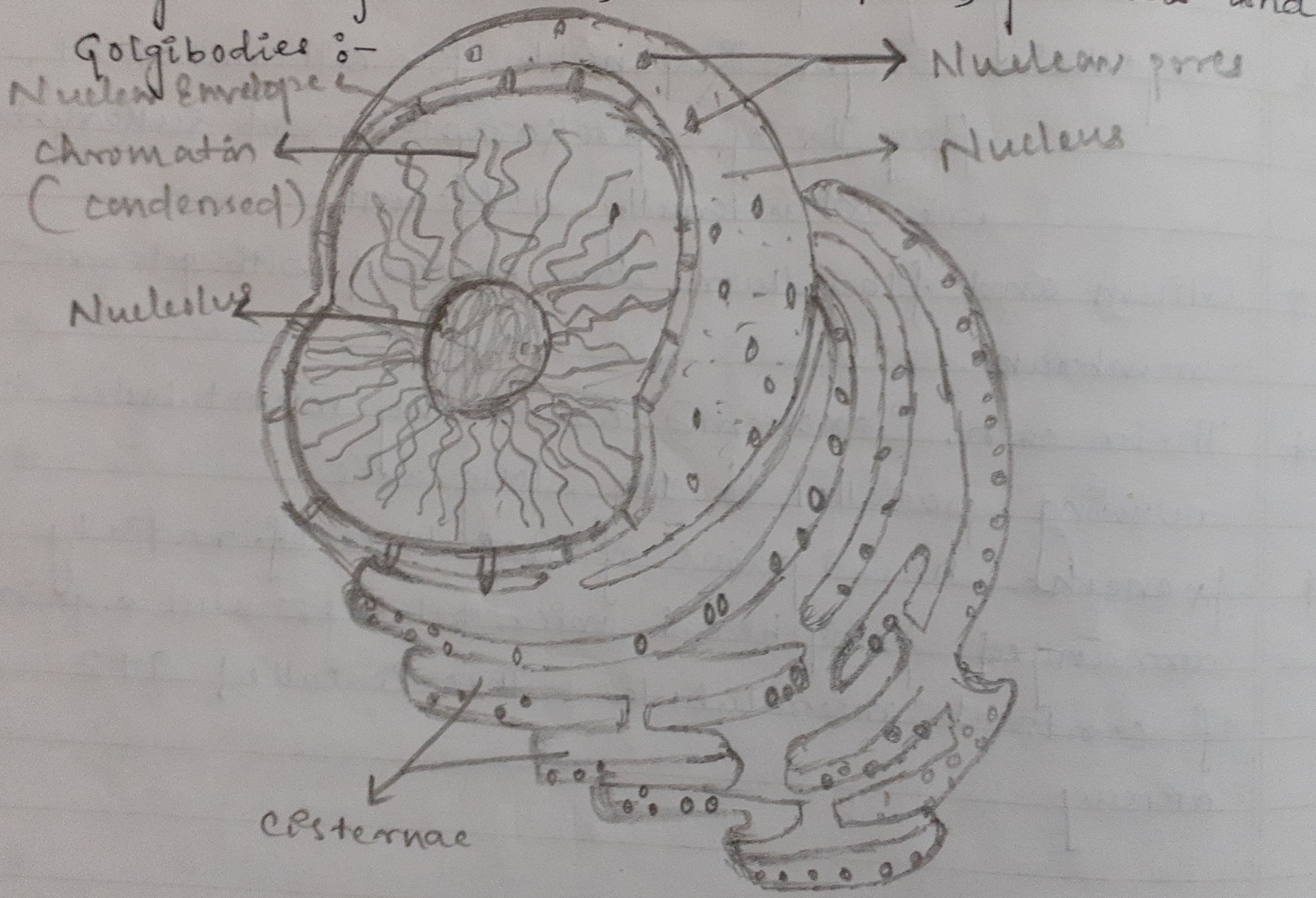
7. How does an Amoeba obtain its food?

Ans) Amoeba obtains its food by the process of endocytosis. It engulfs the food particle with the help of pseudopodia and then forms a vacuole around it. When the particle is completely trapped the amoeba secretes digestive enzymes that digests the food, thus the amoeba obtain it's food.

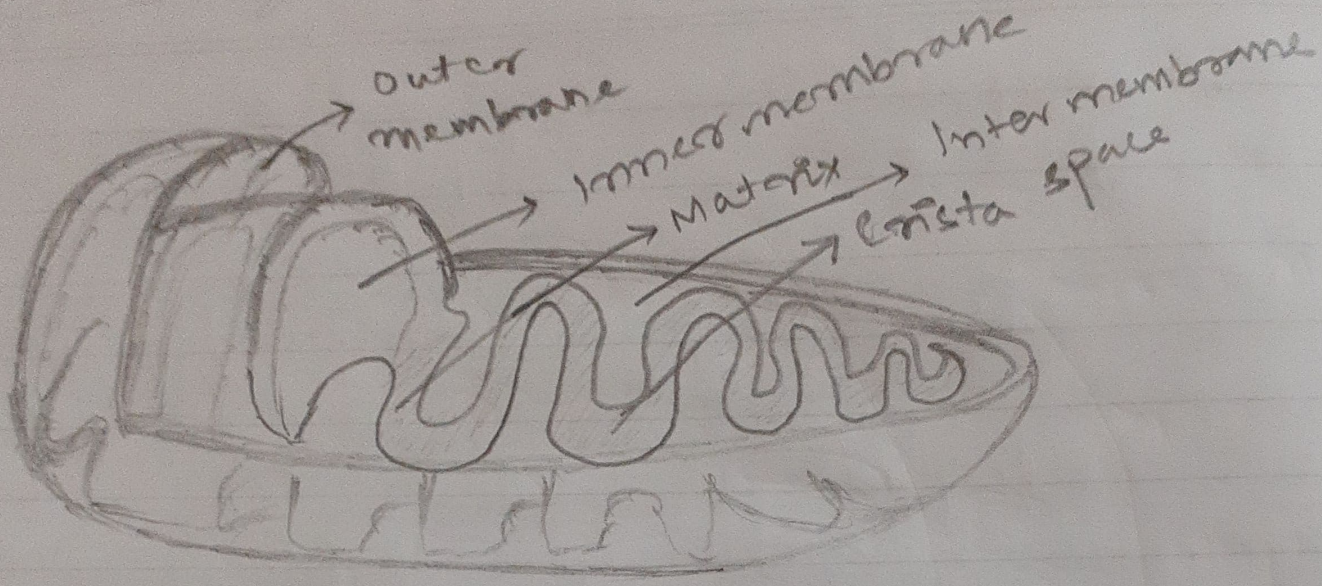
8. What is osmosis?

Ans) The movement of water molecules through a selectively permeable membrane from of a region to higher water concentration to a region of lower water concentration is known as osmosis.

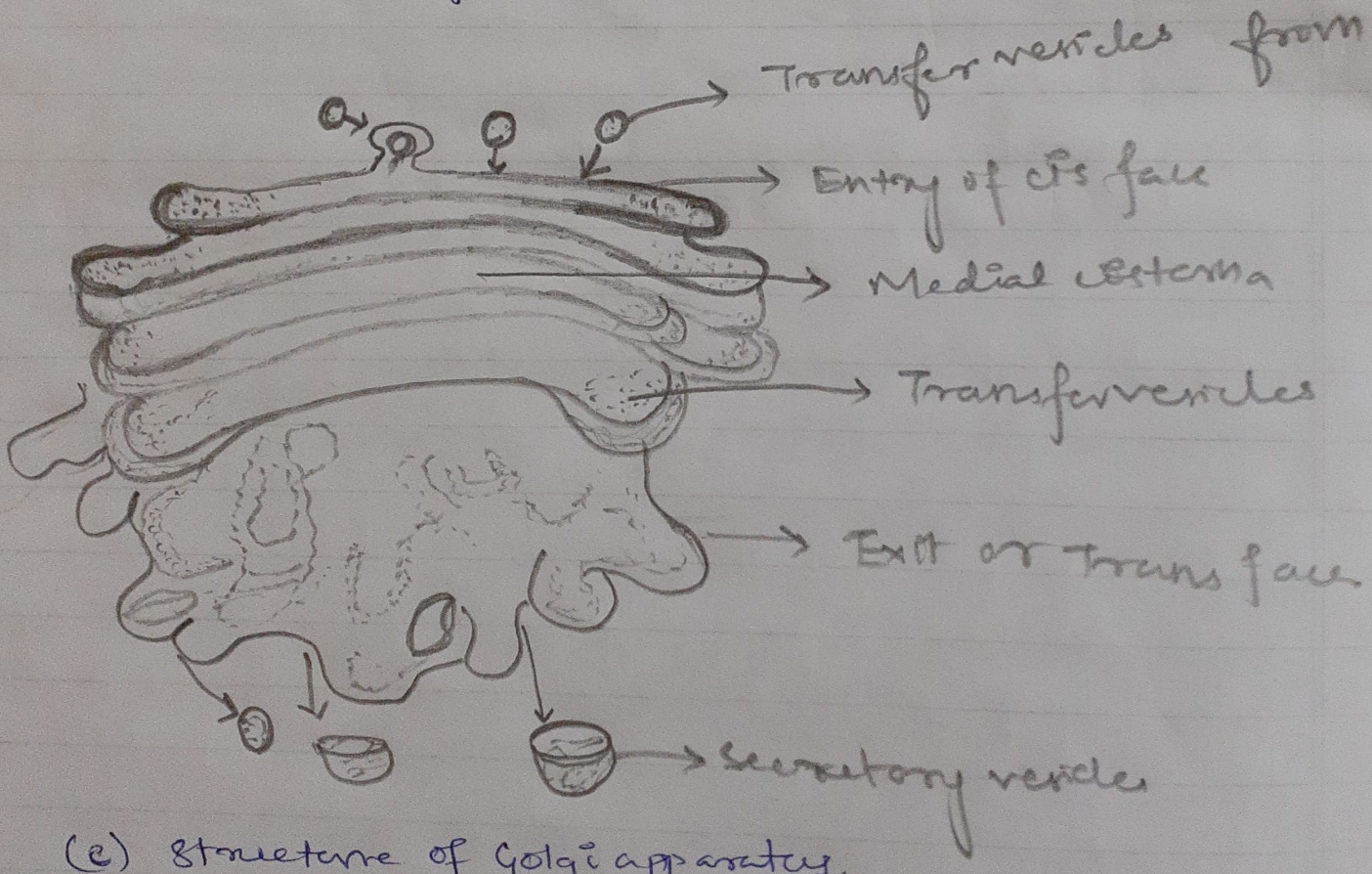
Diagrams of nucleus, mitochondria, plastids and Golgibodies :-



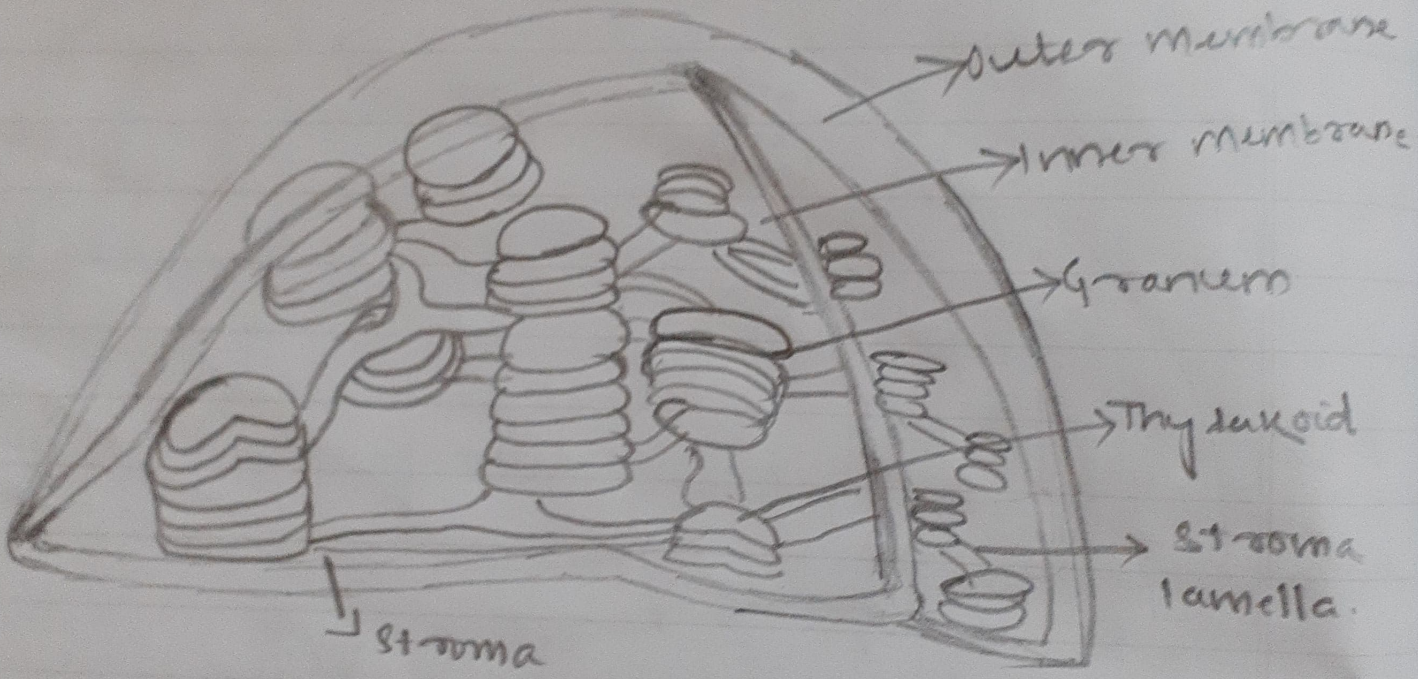
(a) Structure of Nucleus.



(b) Structure of Mitochondria



(c) Structure of Golgi apparatus.



(d) Structure of plastid (Chloroplast).