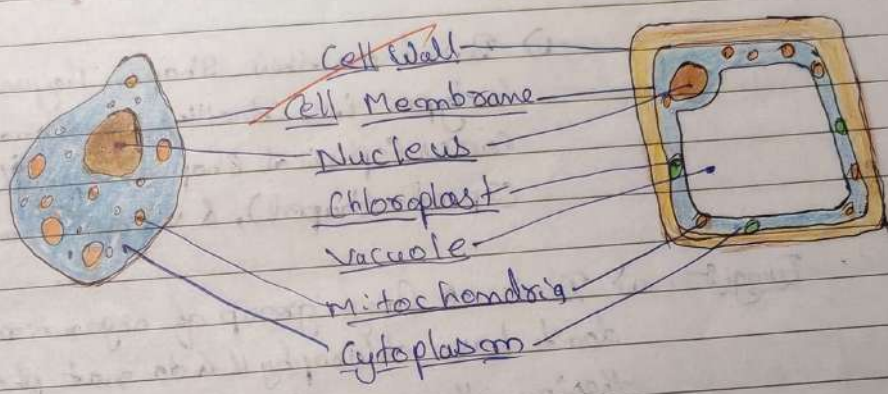
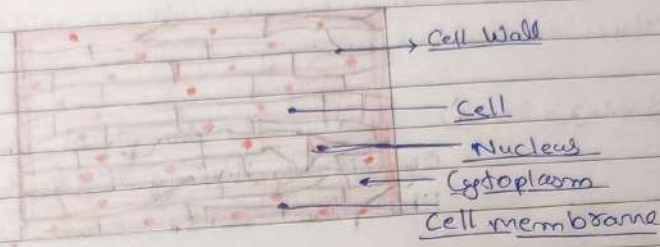


Structure of Onion peel under the microscope



Plastids

They occur in most plant cell & are absent in animal cell. They are of different colours, like "chloroplast" which contain the green pigment "chlorophyll", & is essential for photosynthesis.



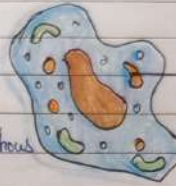
Plastid/
Chloroplast

Cell Organelles

A cell performs different function with the help of various, small, highly specialized structures called organelles present in the cytoplasm. ~~are~~ They are:

Mitochondria:

They are tiny rod shaped structures which provide energy for all activities of the cell & often called the powerhouse of the cell.



Mitochondria

Vacuoles:

They are sac-like structures containing a solution of mineral, salts, & sugars.

In plant cell, the vacuoles are larger, distinct & permanent, occupying most of the volume of the cell.

On the contrary, an animal cell has small & temporary vacuoles or it may be absent.



Vacuoles

- It controls all the metabolic activities of the cell.
- It is concerned with the transmission of hereditary traits from parents to offsprings.

→ Cell wall

- The plant cell have an ~~another~~ outer rigid thick layer outside the cell membrane.



It is ~~the~~ made up of tough material called cellulose.

It is a non-living part exclusively present only in plant cell.

It gives protection against variations in temperature, high wind speed, atmospheric moisture, etc.

→ Cytoplasm:

- It is a transparent, jelly like substance that makes up most of the inside of a cell.



- It is present between cell membrane & the nucleus.

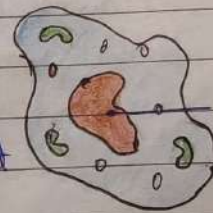
Various structures like the nucleus, mitochondria are present in it. They are called cell organelles.

~~Salt~~ Salts, proteins & sugars & other substance are dissolved in this fluid.

Most of the chemical reaction which keep the cell alive takes place in cytoplasm.

Nucleus:

It is a large, spherical & most important cellular component present in all the cells. (Except RBCs).



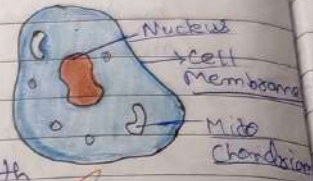
It is the largest organelle in the cell that can be easily seen with a microscope.

Parts of the Cell:

- These cells vary in shape & size. Some of the parts are present in all of them. These are:

→ Cell membrane:

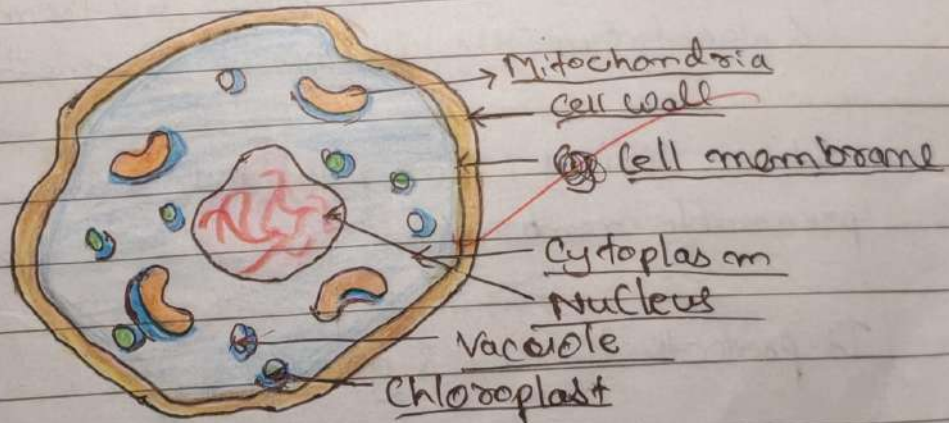
- The outer boundary of each cell is called plasma / cell membrane.
- Inside it lies the cytoplasm with various cell organelles & nucleus.
- The cell membrane separates cell from one another & also from the surrounding medium.
- It is living, thin, delicate elastic porous & selectively permeable membrane.
- It protects the cell & gives it a cell.



The Cell

Cells are the basic structural units of life. Just as the building that may differ in designs, shapes & sizes, but are made up of bricks, in the same way organisms may differ from one another but all of them are made up of cells.

Cells in the living organisms are complex living structures unlike non-living bricks.



Direct Elections $\rightarrow$ ATP