61. What are genes? Where are genes located?
Ans A gene is basic and physical unit of heredity in plants and animals. Gene are located in nucleas of a cell.

62. What is a plastid? What is the name of green plastids present in plant cells?
Ans The organelles containing pigments present in the cytoplasm of plants cell are called plastids. Chloroplasts is the name of green plastids present in plant cells.

63. What is the size of an ostrich egg? Is it a single cell or a double cells?
Ans The size of an ostrich egg is 170mm. It is a single cell.

64. What is the function of cell wall in a plant cell?
Ans Cell wall provide shape and support to the plant cell.

65. Name two cells which are found in animals and two which are found in plants.
Ans Two animal cell → Red Blood cell, White Blood cell
Two plant cell → Epidermal cell, Xylem cell

56. (a) What is cytoplasm? What is its functions?
Ans Cytoplasm is a transparent, jelly-like material which fills the cell b/w nucleus and cell membrane.
functions are :- Cytoplasm keep cell alive by doing chemical reactions.

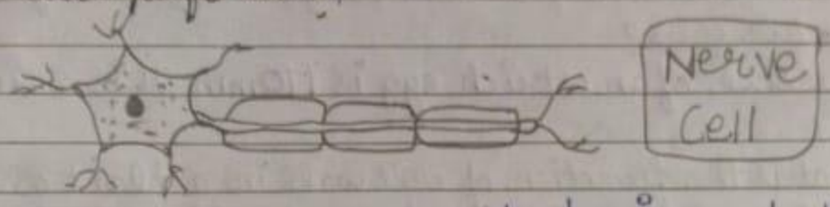
(b) What is protoplasm? Name the four elements which make up major part of protoplasm.
s All the living matter in a cell is called protoplasm. Protoplasm is a liquid substance, which is present

55. State the cell theory of organisms.
Ans The cell theory states that the basic unit of structure and function of all living organisms in the cell.

56. Explain the function of mitochondria in a cell.
Ans Mitochondria provide energy for all the activities of the cell this energy is produced by the process of respiration in which food is broken down by oxygen.

57. Make a sketch of human nerve cell. What function do nerve cells perform?

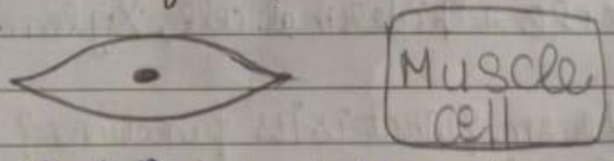
Ans (a)



(b) Nerve cell carry messages b/w brain and other parts of the body

Q-58 Make a sketch of human muscle cell. What function do muscle cells perform?

Ans (a)



(b) Muscle cells bring about the movement of body parts by contracting and relaxing.

0. Where are chromosomes found in a cell? State functio
s Chromosomes are found in nucleus in a cell. Chromosom are responsible to transfer genetic information fro one generation to next generation.

Ans	Prokaryotic cells	Eukaryotic cells
1)	small cells (< 5mm)	large cells (> 10 mm)
2)	always unicellular	often multicellular
3)	no nuclear or any membrane bound organelles, such as mitochondria	always have nucleus and other membrane-bound organelles
4)	DNA is circular, without proteins	DNA is linear and associated with proteins to form chrom[osomes]
5)	ribosomes are small (70S)	ribosomes are large (80[S])
6)	No cytoplasmskeleton	always has a cytoskeleton
7)	motility by rigid rotating flagellum made by flagellin	motility by flexible waving undulipodium, made of tub[ulin]
8)	cell divison is by binary fission	cell division is by mitosis or meiosis.
9)	reproduction is always asexual	reproduction is asexual or sexual.
10)	huge variety of metabolic pathways	common metabolic pathways.

Q-54 (a) Why are nerve cells long and have branches?

Ans The nerve cells are long and have projections so that they can make contacts with many other nerve cells and carry messages over long distances (b/w brain and other parts of the body).

(b) What is the other name of a nerve cell?

Neuron.

~~Q) Why are nerve could cells not be observed and studied for thousands of years?~~

together to perform a particular function in the body of an organisms.
Ex. Heart, Stomach

Q-3 What is an organ system?
Ans A group of interconnected organs which works together to do a big job for the organism, is called an organ system.
(a) Give two ex. of organ system in animals.
= Digestive system, Respiratory system
(b) Name the two main organ system in plants.
= Root system, Shoot system

Q-4 What are the functions of the following organs?
i) Heart = To pump the blood around the body.
ii) Brain = Control all part of our body.
iii) Roots = Absorb water and minerals for photosynthesis from soil.
iv) Leaves = Prepare food for plants by photosynthesis.

Q-5 What is the shape of RBC's in human blood? What functi do red blood cells perform?
Ans The RBC's in human blood is disc like. RBC's is responsible for the supply of O_2 in our body.

Q-3(a) State the ~~two~~ two Prokaryotes and two eukaryotes.
Ans ~~Two~~ Two Prokaryotes are :- Bacteria, Bluegreen alga etc...
= Two eukaryotes are :- Human, Dog, cat, cow etc...

Q-3(b) State the difference b/w prokaryotes and eukaryotes

★ Cells, Tissues, Organs, Organ system and organisms:

- Cells - Tissue, organ, organsystem, organisms.
- Cell - A cell is a smallest unit of life

OR

The structural and functional unit of life is called [illegible]

- Tissues - A group of similar cells that perform a particular function in living organism.
- Organ - A group of different tissue that perform particular functions : Ex : Heart, stomach etc.
- Organ system - A group of inconected organs which work together to do a big job for the organisms is called organ system.

Ex - Digestive system - Mouth, Oesophagus, stomach, Intestines, Rectum and Anus.

- Organism : An organism is made up of any differ organ system and perform functions contain life.

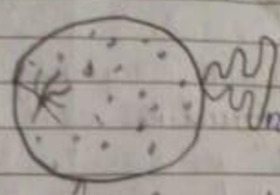
Assignment = 1

1 What is a tissue? Give two ex. of organs tissues.
Ans The group of similar cells which work together to perform a particular function is called tissue.
- Muscle tissue, Photosynthetic tissue.

What is a organ? Give two ex. of organs.
An organ is a collection of different tissues which

Ex.
Q-3
Ans
(a) =
(b) =
Q-4
i)
ii)
iii)
iv)
Q-5
Ans
53 (a)
An
=
Q-6

Pro-karyotic cell
Those cells which do not have well define Nucleus without nuclear ~~cell~~ membrane
Ex. Bacteria



Eukaryotic cells
Those cells which have define nucleus with nuclear ~~cell~~ membrane
Ex.: Amoeba, Human cell

★ Unicellular Organisms
The organism which are made up of only one cell, are called unicellular organisms Ex- Amoeba, Paramecium

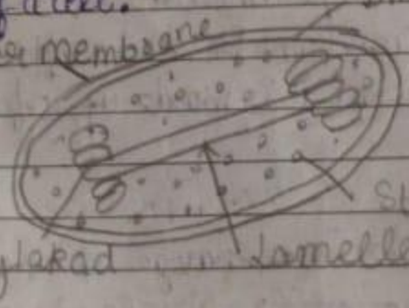
Multicellular Organisms
The organism which are made up of many cells are called multicellular organisms Eg → a rose plant, Human being.

Animal cell

B ii Mitochondria → They are tiny rod shape organelles found in all the cells. It is the power house of cell because it provide energy by using O_2 and Glucose.

Mitochondria

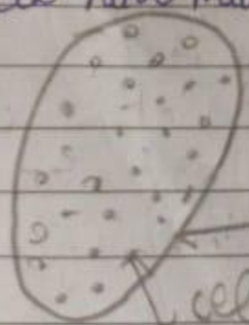
iii Chloroplast → Chloroplast is green coloured organelle present in the cytoplasm of plant cell. Chloroplast help in photosynthesis process. So it known as kitchen of plant cell. * Plastids → The coloured matter containing organelles of a cell.



Chloroplast

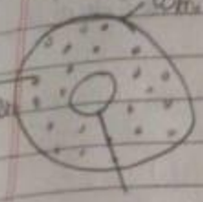
iv Vacuole → Vacuole is a space in the cytoplasm of cell which contains substances dissolved in water. The liquid present in vacuole is called 'cell sap'

i) Plant cell have only single large vacuole.
ii) Animal cells have many little vacuoles.



Vacuole

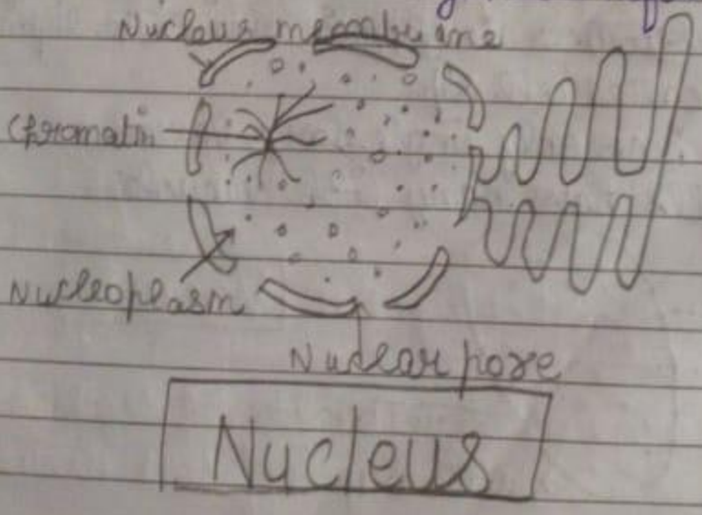
ii) Cytoplasm → It is a transparent, jelly like material that present b/w cell membrane and nucleus.
It contain various structure which are known as cell organelles.
It work just like chemical factory because most of the chemical reactions take place in the cytoplasm.



iii) Protoplasm → Living part of the cell that includes cytoplasm and nucleus is known as protoplasm.
[Protoplasm = Cytoplasm + Nucleus]

★ Cell wall → i) Present in only plant cell and in fungi
ii) It is non-living part of cell
iii) It is permeable
iv) In plant is made up of cellulose and in fungi it is made up of chitin

Ⓐ Nucleus → Nucleus is a large spherical organelle present in all the cells. Nucleus control all the activities of cells. Nucleus contain genetic information of a cell.



Nucleus

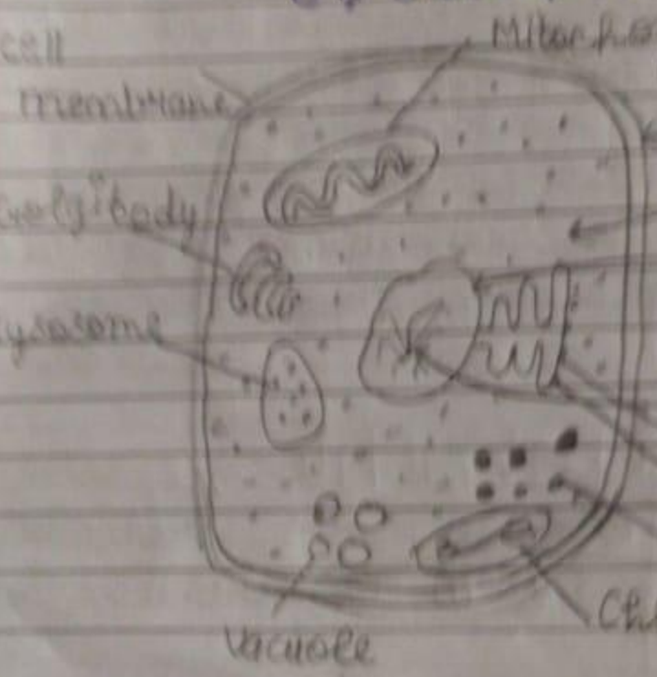
Important Notes

Chapter 8: Cell structure.

- Part of cell. → Basic parts of cell.
- Cell membrane / Plasma membrane.
- Nucleus
- Cytoplasm → Endoplasmic Reticulum (E.R.) (i) Ribosomes (ii) Mitochondria (iii) Lysosomes (iv) Golgi body (v) Vacuole (vi) Chloroplast

Cell organs

cell wall



Parts of cell →

i) Cell membrane / Plasma membrane = It is selective permeable. It is a living part of cell. It works as cell boundary. Cell membrane controls the movement of substances "into the cell" and out of the cell. Cytoplasm and nucleus are enclosed in it.

inside the cell, Carbon, Hydrogen, Nitrogen and Oxygen are four elements which make up a major part of protoplasm.

61 (a) What are unicellular organisms? Name two unicellular org-s?
Ans The organisms which are made up of only 'one cell' are called unicellular organisms Ex:- Amoeba, Paramecium

(b) What are multicellular organisms? Name two multicellular organisms?
Ans The organisms which are made up of many cells are called multicellular organisms Ex:- a rose plant, Humans

70 (a) State three differences b/w a plant cell and an animal cells
Ans The main differences b/w plant cells and animal cells are given below:

Plant cell	Animal cell
1. A plant cell has a cell wall around it.	An animal cell does not have a cell wall around it.
2. A photosynthetic plant cell has chloroplasts in it. Other plant cells have different plastids in them.	2. An animal cell does not have chloroplasts or other plastids.
3. A plant cell has a large vacoule in it.	3. An animal cell has usually no vacoule. Only some animals have small vacoules.