(Q.) Mention the layer outside the plasma membrane of a plant cell. (1 Mark)

(**Ans**) Cell wall is the layer outside the plasma membrane of a plant cell.

(Q.) Name the outermost layer of an animal cell. (1 Mark)

(**Ans**) Plasma membrane.

(Q.) Name the cells having branching structure. (1 Mark)

(**Ans**) Nerve cells are branched.

(Q.) Why cells could not be observed before seventeenth century? (1 Mark)

Ans) Cells could not be observed before seventeenth century because till that time microscope was not invented.

(Q.) What is the basic structural and functional unit of all living organisms? (1 Mark)

(**Ans**) The basic structural and functional unit of all living organisms is Cell.

(Q.) Which organism has the smallest cell? (1 Mark)

(**Ans**) Mycoplasmas, a bacteria has the smallest cell of the size of 0.1 micron i.e. ten thousandth part of a milimetre.

(Q.) Which is the largest cell visible by unaided eye? (1 Mark)

(**Ans**) Ostrich egg is the largest visible cell.

(Q.) Name the four elements, which form major part of protoplasm. (1 Mark)

(**Ans**) Carbon, hydrogen, oxygen and nitrogen forms the major part of protoplasm.

(Q.) Give two examples of unicellular organisms. (1 Mark)

(**Ans**) Amoeba and Paramecium.

(Q.) Name the jelly like substance present between the nucleus and the cell membrane. (1 Mark)

(**Ans**) Cytoplasm.

(Q.) Name the living substance of the cell. (1 Mark)

(**Ans**) Protoplasm is living substance of the cell.

(Q.) Which organelle is called control centre of the activities of the cell? (1 Mark)

(**Ans**) Nucleus is called control centre of the activities of the cell.

(Q.) Give two examples of prokaryotes.

(1 Mark)

(**Ans**) Bacteria and blue green algae.

(Q.) Name the largest organelle present in a cell.

(1 Mark)

(**Ans**) Vacuoles

(Q.) Name the green plastids present in cell.

(1 Mark)

(**Ans**) Chloroplasts is green plastid present in cell.

(Q.) Why is the cell called basic unit of living organism?

(2 Marks)

(**Ans**) Cell is the structural and functional unit of an organism because a cell in itself is the smallest part of an organism which is capable of functioning independently and can carry out the fundamental duties of life like reproduction, metabolism (photosynthesis and/or respiration).

(Q.) What is the function of cell membrane?

(2 Marks)

(**Ans**) The function of the cell membrane is to let particles move in and out, to or from the cell.

(Q.) What is the function of nerve cell?

(2 Marks)

(**Ans**) The nerve cell receives and transfers messages, so help to control and coordinate the working of different parts of the body.

(Q.) What are the basic components of cell?

(2 Marks)

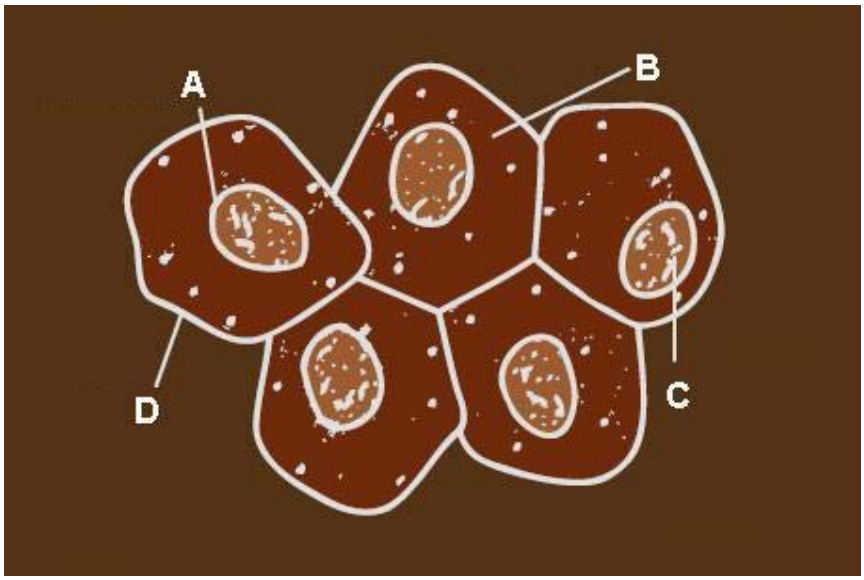
(**Ans**) The basic components of cell are as follows:
Cell membrane, cytoplasm and nucleus.

(Q.) Why plant cell have cell wall?

(2 Marks)

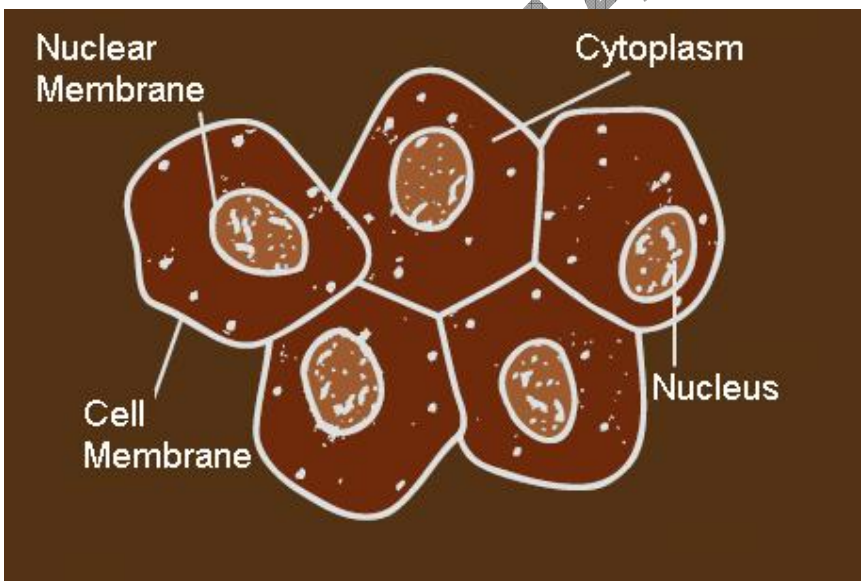
(**Ans**) Plant cells need protection against variations in temperature, high wind speed, atmospheric moisture, etc. They are exposed to these variations because they cannot move. That's why they have cell wall.

(Q.) Label the parts A, B, C and D in the below given image of human cheek cells:



(2 Marks)

(**Ans**)



(Q.) Write a brief note on mitochondria.

(2 Marks)

(**Ans**) These are rod shaped or spherical in shape. They provide energy to the cell for various activities. Mitochondria is also called the powerhouse of the cell.

(Q.) Why do we stain the small components of section, before seeing under the microscope? Name a stain.

2 Marks)

(**Ans**) Staining with coloured dyes makes the parts clearly visible. The dyes react with cellular components to give colour to the components. Eosin is a stain which gives a red orange colour.

(Q.) Name any four cell organelles found in the cell cytoplasm?

(2 Marks)

(**Ans**)
- Mitochondria
- Golgi bodies
- Plastids
- Vacuoles.

(Q.) Describe the variations in shape and size of cells.

(3 Marks)

(**Ans**) Cells are generally round or spherical in shape. However they can be cuboidal or columnar and some animal cells are long and branched as in nerve cells.

Size may range from very small which can not be visible with the naked eye and are the order of 0.1 micron e.g. in bacteria, to large and long e.g. muscle cells in animals and fibers in plants.

(Q.) Explain why chloroplasts are found only in plant cells?

(3 Marks)

(**Ans**) Plants prepare their food by their own. Chloroplasts provide green colour (Chlorophyll) to leaves, which is essential to photosynthesis. Animals do not prepare their food by their own. That's why chloroplasts are found only in plant cells.

(Q.) Write the functions of the following

a) Mitochondria b) Chromosomes c) Plastids

(3 Marks)

(**Ans**) Functions are as follows:

Mitochondria provide the energy to the cell for carrying out various activities.

Chromosomes transfer the characters from parents to the next generation.

Plastids are the largest cell organelle containing pigments. They give colour to flowers and fruits, which help in pollination.

(Q.) Write three differences between prokaryotic and eukaryotic cells.

(3 Marks)

(**Ans**)

Prokaryotic cells	**Eukaryotic cells**
1. The cells having nuclear material without nuclear membrane are called prokaryotic cells. 2. No cell organelle is present in prokaryotes. 3. Examples: Bacteria and blue green algae.	1. The cells, having well organised nucleus with a nuclear membrane are called as eukaryotic cells. 2.All cell organelles like mitochondria, chloroplast,ER, etc. are present in eukaryotes. 3. Example: All higher organisms.

(Q.) Where are chromosomes found in a cell? State their function.

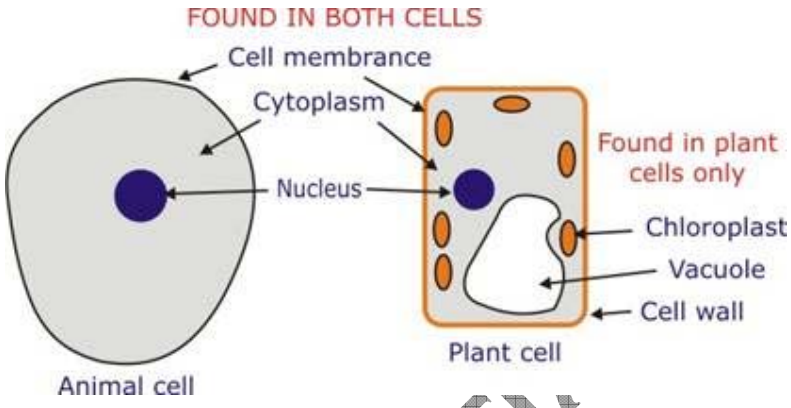
(3 Marks)

(**Ans**) Nucleus contains thread-like structures called chromosomes.
Function: Chromosomes carry genes and help in inheritance or transfer of characters from the parents to the offspring.

(Q.) Draw the diagram of plant and animal cell.

(3 Marks)

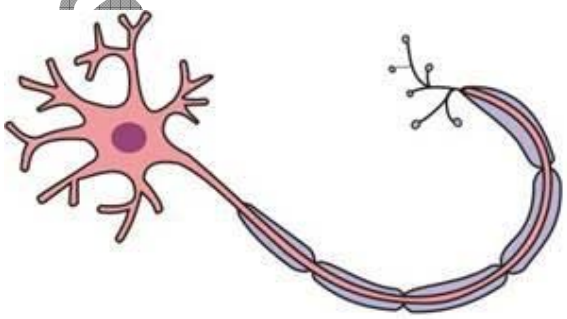
(**Ans**)



(Q.) Make a sketch of the human nerve cell. What function do nerve cells perform?

(5 Marks)

(**Ans**) The nerve cell receives and transfers messages so help to control and coordinate the working of different parts of the body.



Nerve Cell

(Q.) **Write short notes on the following:**
a) Cytoplasm
b) Nucleus

(5 Marks)

(**Ans**) **Cytoplasm:**

It is the jelly-like substance present between the cell membrane and the nucleus.
It is divided into two parts:
1) Cytosol
2) Cell organelles.
Cytosol is the soluble part of the cytoplasm.
Cytoplasm contains many specialised cell organelles (mitochondria, golgi bodies, ribosome, etc). Each of these organelles performs a specific function for the cell.

Nucleus:

This is the most important part controlling the activities of living cells.
In majority of the cells the nucleus lies in the centre, in few cells it may lies near the periphery as in plant cells.
The main components of the nucleus are nucleoplasm, chromatin and nucleolus.
Nucleoplasm is the protoplasm of the nucleus enveloped by the nuclear membrane.
Chromatin is the fibrous network of chromosomes containing the genes.
Nucleolus is round and the denser part.

(Q.) **Differentiate between plant and animal cell.**

(5 Marks)

(**Ans**)

Differences are as follows:

Plant cell	**Animal cell**
ı Larger in size Plastids are present. Cell wall is present. Vacuoles are large in size and more in number. They have fixed and regular shape. Centrosomes are absent.	ı Smaller in size Plastids are absent Cell wall is absent. Vacuoles are smaller or absent. Shape is not fixed and is irregular Centrosomes are present.