Very Short Answer Questions

Q. 1. In leaves, name the cell organelle and pigment that is responsible for green colour.

[NCERT Exemplar]

Ans. Chloroplast and chlorophyll.

Q. 2. Name the instrument used to observe cells. [NCERT Exemplar]

Ans. Microscope

Q. 3. We do not sense any pain when we clip our nails or cut our hair. Why? [NCERT Exemplar]

Ans. Nails and hair are both made up of dead cells. They do not have nerve cells. Hence we don't feel the pain when they are cut.

Q. 4. In a cell, where are the genes located? [NCERT Exemplar]

Ans. Nucleus/chromosomes.

Q. 5. Amoeba and Paramecium belong to which category of organisms? [NCERT Exemplar]

Ans. Unicellular and Eukaryotic/Protozoan.

Q. 6. What are the functions of cell wall in plant cells? [NCERT Exemplar]

Ans. Cell wall protects the cell contents, gives shape to the cell.

Q. 7. Name the main parts of a cell.

Ans. The cell has three main parts:

i. The cell membrane,
ii. Cytoplasm, and
iii. The nucleus.

Q. 8. Give the difference between unicellular and multicellular organisms.

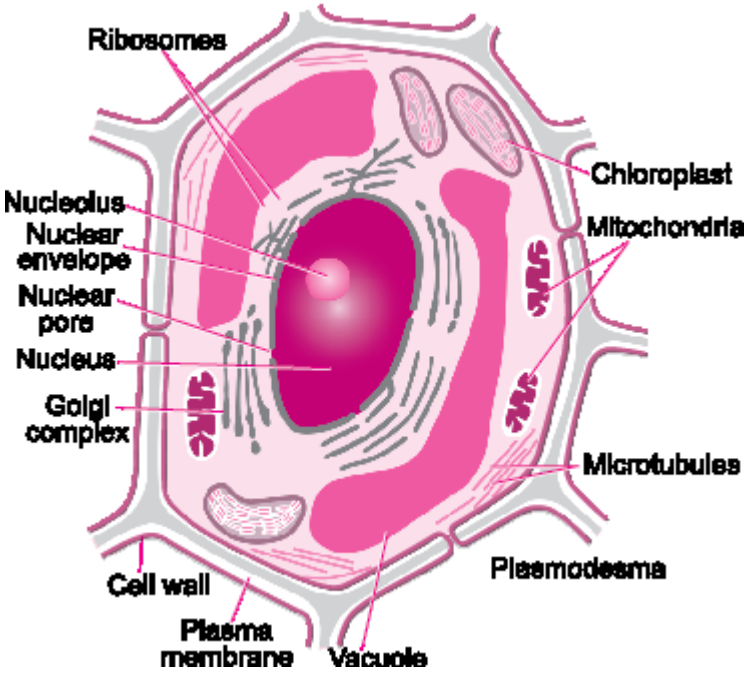
Ans. Unicellular organisms like *amoeba* or *paramecium* are single celled while multicellular organisms like human beings are made up of many cells.

Short Answer Questions

Q. 1. Why a cell is called the structural and functional unit of living organisms?

Ans. Cell is called structural unit because it provides a shape to the body and all the life processes occurs inside the cell, so it is called functional unit of living organisms.

Q. 2. Observe the following diagram. [NCERT Exemplar]



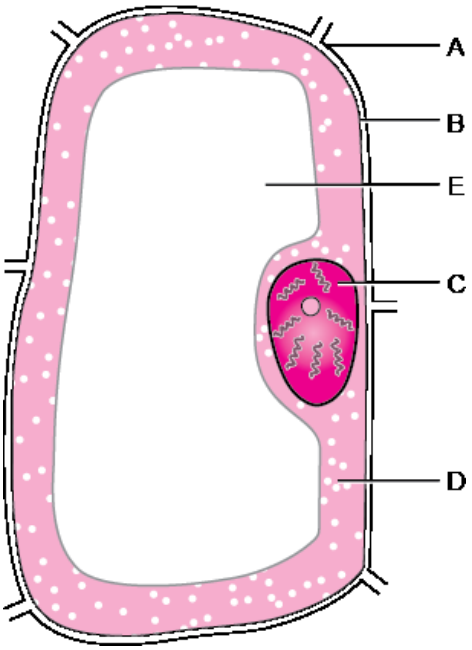
Answer the following questions.

(i) Does it represent a plant cell or an animal cell?
(ii) Does it represent a prokaryotic cell or a eukaryotic cell?

Ans. (i) It represents an animal cell.

(ii) It represents a eukaryotic cell.

Q. 3. Label the parts A to E in the diagram given below. [NCERT Exemplar]



Ans. A — Cell wall B — Cell membrane C — NucleusD — Cytoplasm E — Vacuole

Q. 4. Classify the following terms into cells, tissues and organs and write in the tabular column given below. [NCERT Exemplar]

RBC, WBC, nerve cell, blood vessels, brain, heart, hand, blood, muscle, nerve

Cell	Tissue	Organ
_____	_____	_____
_____	_____	_____
_____	_____	_____

Ans.

Cell	Tissue	Organ
RBC	Blood	Blood vessels
WBC	Muscle	Heart
Nerve Cell	Nerve	Hand Brain

Q. 5. Why are mitochondria known as power house of the cell?

Ans. Mitochondria are known as power house of the cell because it provides energy from food as a result of cellular respiration.

Long Answer Questions

Q. 1. Cells consist of many organelles, yet we do not call any of these organelles as structural and functional unit of living organisms. Explain. [NCERT Exemplar]

Ans. Although cell organelles have specific structures and perform specific functions but they cannot be called structural and functional units of living organisms. This is so because they can perform their functions only when they are within a living cell. They cannot function outside the cell as an independent unit.

Q. 2. Why do plant cells have an additional layer surrounding the cell membrane? What is this layer known as? [NCERT Exemplar]

Ans. As plants cannot move they need protection against variations in temperature, high wind speed, atmospheric moisture, etc. These variations damage the plant cell to an extent of killing them. The cell membrane is a flexible and semi-permeable membrane and cannot fight the adverse climatic changes in its own. Therefore, a stiffer outer covering is present which protects and gives shape to the plant cell. This layer is called the cell wall.

Q. 3. The size of the cells of an organism has no relation with the size of its body. Do you agree? Give reason for your answer. [NCERT Exemplar]

Ans. I agree because the cells in the body of an elephant is not necessarily bigger than those in a rat, it is not true that bigger organisms have cells of bigger size in their body. The size of the cell in an organism is related to the function it performs. For example, the nerve cells in both, the elephant and the rat are long and branched. They perform the same function, that of transferring messages.

Hots (Higher Order Thinking Skills)

Q. 1. What is meant by ‘division of labour’ in multicellular organisms?

Ans. In unicellular organisms, the only cell present will have to complete all tasks necessary for survival. Whereas in multicellular organisms, certain cells specialise in their function and divide the labour between multiple different cell groups.

Q. 2. Does the number of cells depend upon the size of the organism?

Ans. Yes, the bigger organisms have more number of cells than organisms which are smaller in size.