

Cell - Structure and Functions



1) **Indicate whether the following statements are True (T) or False (F).**

a) **Unicellular organisms have one-celled body.**

Ans. True

b) **Muscle cells are branched.**

Ans. False

c) **The basic living unit of an organism is an organ.**

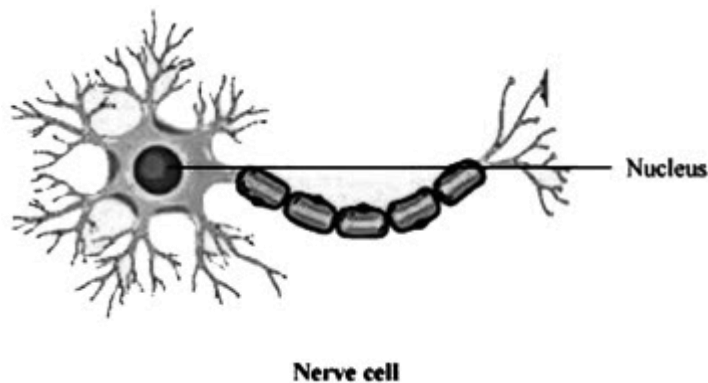
Ans. False

d) **Amoeba has irregular shape.**

Ans. True

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

Ans. The function of the nerve cell is to receive and transmit messages, helping the brain to regulate and coordinate the activity of various parts of the body.



3) **Write short notes on the following.**

a) **Cytoplasm.**

Ans. The cytoplasm is a fluid-like substance between the nucleus and the plasma membrane. Various cell organelles such as ribosomes, mitochondria, endoplasmic reticulum, etc. are suspended in the cytoplasm. It helps in the exchange and storage of substances between cell organelles.

b) Nucleus of a cell.

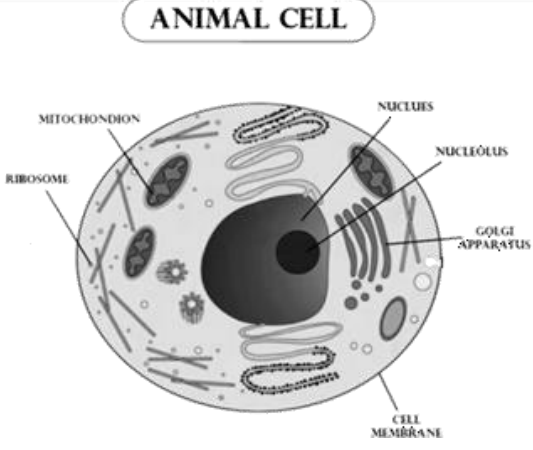
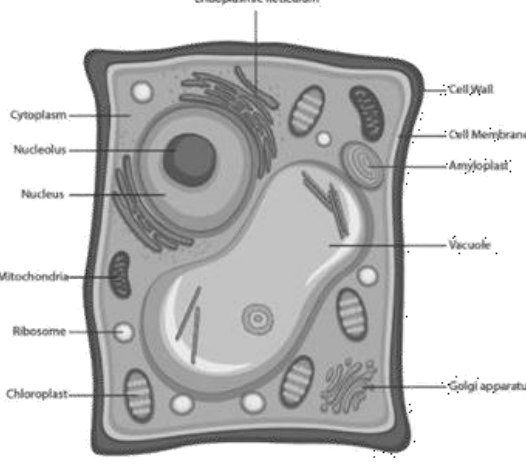
Ans. The nucleus is the cell master, it controls all cell operations. It is usually located in the centre of the cell and has a circular shape. A membrane called the nuclear membrane separates it from the cytoplasm. It also contains DNA and RNA. This perforated membrane allows for the transfer of substances in the nucleus and cytoplasm. The nucleus contains a dense body called Nucleolus that contains chromosomes.

4) Which part of the cell contains organelles?

Ans. Cytoplasm, a fluid-like structure located inside the plasma membrane. It is a large part of the cell, which holds all the organelles of the cell such as the nucleus, mitochondria, Ribosomes, Golgi body, ER and all.

5) Make sketches of animal and plant cells. State three differences between them.

Ans.

Animal cells	Plant cells
	
Animal cells do not have chloroplasts.	Plant cells have chloroplasts. Chloroplasts enable plants to perform photosynthesis to make food.
They are generally small in size.	They are usually larger than animal cells.
Cell wall is absent.	Cell wall is present.

6) State the difference between eukaryotes and prokaryotes.**Ans.**

Eukaryotes	Prokaryotes
Eukaryotes exist as both unicellular and multicellular organisms.	Prokaryotes are unicellular organisms in nature.
Nucleolus is present here.	Nucleolus is absent here.
Lysosomes and Peroxisomes present in eukaryotes.	Lysosomes and Peroxisomes are absent in prokaryotes.
Ribosomes are larger.	Ribosomes are smaller.
For example: Fungi, plant, and animal cells.	For example: Bacteria and blue-green algae.

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

Ans. Chromosomes are in the form of chromatin found in the nucleus. Chromosome is a gene that stores all kinds of the data which is then passed on from one generation to the next.

8) 'Cells are the basic structural units of living organisms.' Explain.

Ans. Each living thing is made up of cells, plants or animals, bacteria or any other living thing, all made up of different cell types. Organisms that are as simple as viruses, have a single cell type to perform all the functions needed to survive. For complex organisms like human beings the various types of cells come together and form tissues, organs, organ systems and living organisms. Each cell type varies in shape, size and functions.

9) Explain why chloroplasts are found only in plant cells?

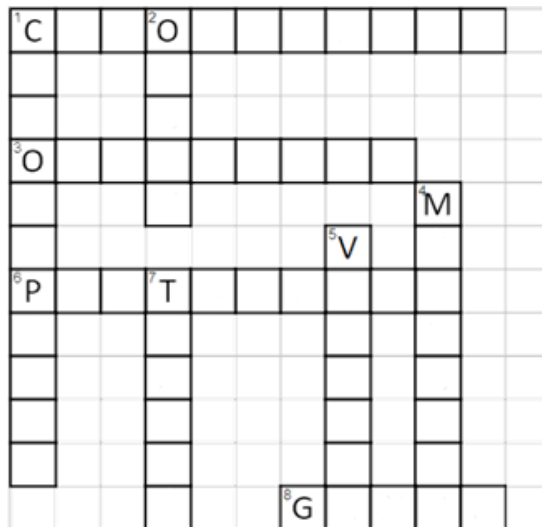
Ans. Chloroplasts are found in plant cells only because chloroplasts contain chlorophyll essential for photosynthesis. Chlorophyll captures sunlight and uses it to prepare plant food through the process of photosynthesis.

10) Complete the crossword with the help of clues given below.**Across**

- 1. This is necessary for photosynthesis.**
- 2. Term for component present in the cytoplasm.**
- 6. The living substance in the cell.**
- 8. Units of inheritance present on the chromosomes.**

Down

1. **Green plastids.**
2. **Formed by collection of tissues.**
3. **It separates the contents of the cell from the surrounding medium.**
4. **Empty structure in the cytoplasm.**
5. **Empty structure in the cytoplasm.**
6. **Empty structure in the cytoplasm.**
7. **A group of cells.**

**Ans.**

1. **CHLOROPHYLL**
2. **ORGAN**
3. **ORGANELLE**
4. **MEMBRANE**
5. **VACUOLE**
6. **PROTOPLASM**
7. **TISSUE**
8. **GENES**

