

Exercises

Question 1:

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

- (a) Unicellular organisms have one-celled body. (T/F)
- (b) Muscle cells are branched. (T/F)
- (c) The basic living unit of an organism is an organ. (T/F)
- (d) Amoeba has irregular shape. (T/F)

Answer 1:

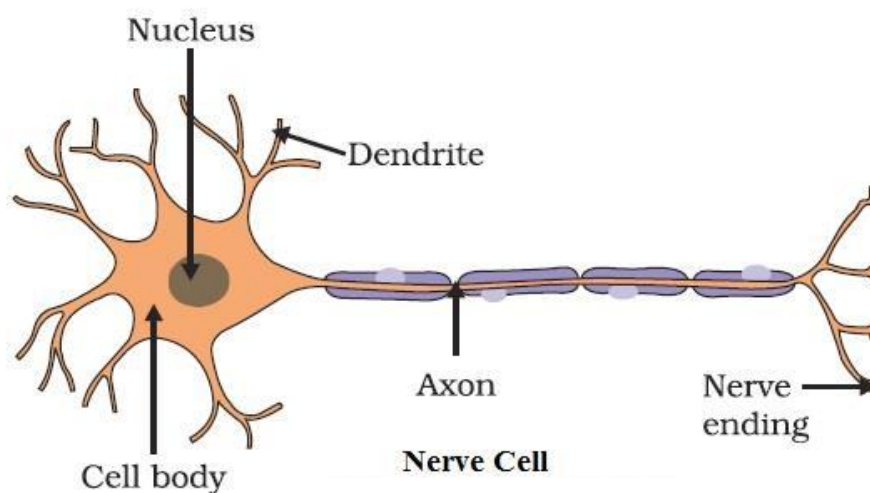
- (a) Unicellular organisms have one-celled body. (**True**)
- (b) Muscle cells are branched. (**False**)
- (c) The basic living unit of an organism is an organ. (**False**)
- (d) Amoeba has irregular shape. (**True**)

Question 2:

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

Answer 2:

The nerve cell receives and transfers messages, thereby helping to control and coordinate the working of different parts of the body.



Question 3:

Write short notes on the following:

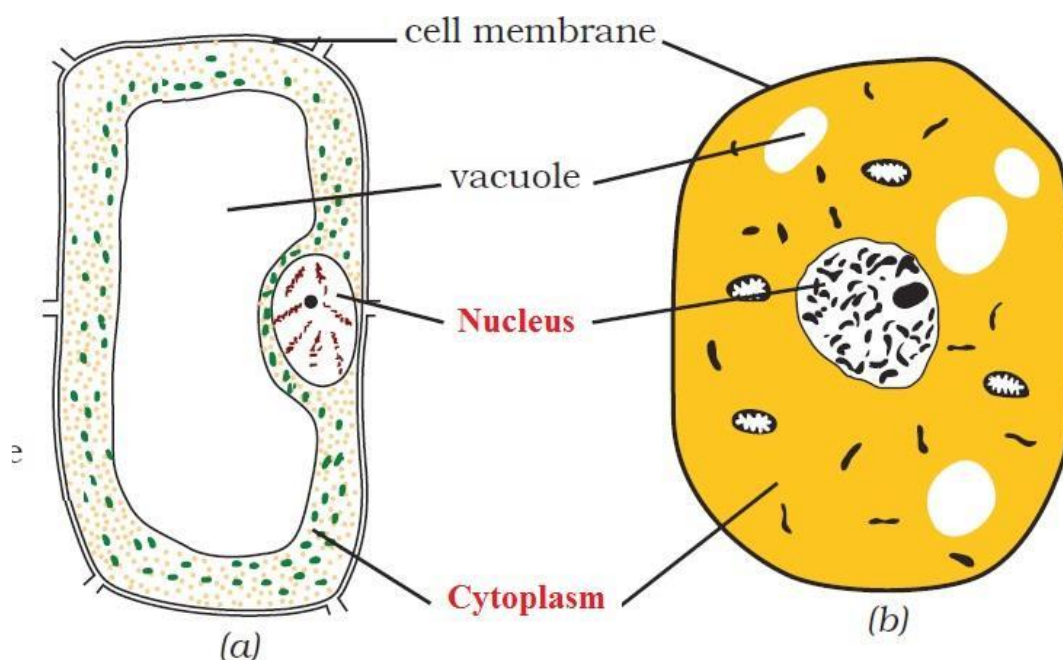
(a) Cytoplasm

(b) Nucleus of a cell

Answer 3:

(a) Cytoplasm

The jelly-like substance between the nucleus and the cell membrane is called *cytoplasm*. Various cell organelles like ribosomes, mitochondria etc. are suspended inside cytoplasm. It helps exchange and storage of substances among cell organelles. Most of the metabolic activities occur inside cytoplasm.



(b) Nucleus of a cell

The central dense round body in the centre is called the nucleus. It is an important component of the living cell. It is generally spherical and located in the centre of the cell. It can be stained and seen easily with the help of a microscope. Nucleus is separated from the cytoplasm by a membrane called the nuclear membrane. This membrane is also porous and allows the movement of materials between the cytoplasm and the inside of the nucleus. A smaller spherical body in the nucleus, is called the nucleolus. Nucleus also contains thread-like structures called chromosomes. These carry genes and help in inheritance or transfer of characters from the parents to the offspring.

Question 4:

Which part of the cell contains organelles?

Answer 4:

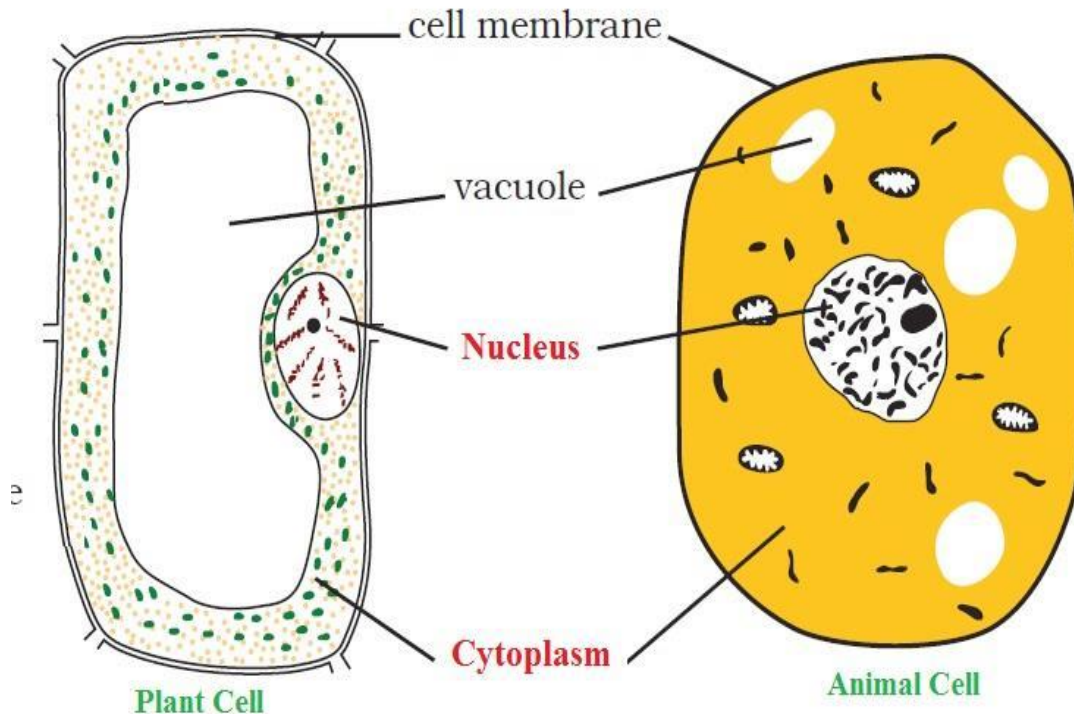
Cytoplasm, gelatinous fluid inside a cell contains various organelles like mitochondria, Golgi bodies, ribosomes etc.

Question 5:

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

Answer 5:

Sl. No.	Part	Plant Cell	Animal Cell
1.	Cell wall	Present	Absent
2.	Centrosomes	Absent	Present & helps in cell division
3.	Plastids	Present	Absent
4.	Vacuole	Large Vacuole	Small Vacuole or Absent



Question 6:

State the difference between eukaryotes and prokaryotes.

Answer 6:

- *Prokaryotes*: The cells having nuclear material without nuclear membrane are termed as prokaryotic cells. The organisms with these kinds of cells are called prokaryotes.

Examples: Bacteria and blue green algae.

- *Eukaryotes*: The cells having a well-organized nucleus with a nuclear membrane are termed as eukaryotic cells. The organisms with these kinds of cells are called eukaryotes.

Examples: Onion cells and cheek cells.

Question 7:

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

Answer 7:

Chromosomes are found in the nucleus of the cell. These carry genes and help in inheritance or transfer of characters from the parents to the offspring.

Question 8:

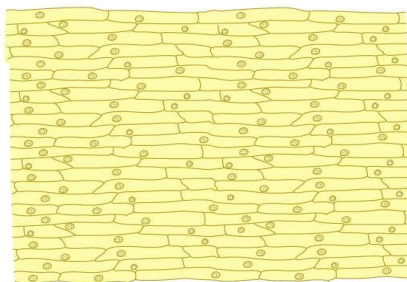
'Cells are the basic structural units of living organisms'. Explain.

Answer 8:

Both, bricks in a building and cells in the living organisms, are *basic structural units*. All basic functions for the organism survival take place inside cells. As bricks assemble to make a building, cells assemble to make the body of every organism. A group of cells form a tissue which performs a specific function. A group of tissue forms an organ and in the same way a group of organs form an organism. That is why cells are considered as the basic structural units of living organisms.



(a) Brick wall



(b) Onion peel

Question 9:

Explain why chloroplasts are found only in plant cells?

Answer 9:

Chloroplasts are found in plant cells only because chloroplasts contain chlorophyll which is essential for photosynthesis. Chlorophyll traps cell energy and use it to prepare food for plants.

Question 10:

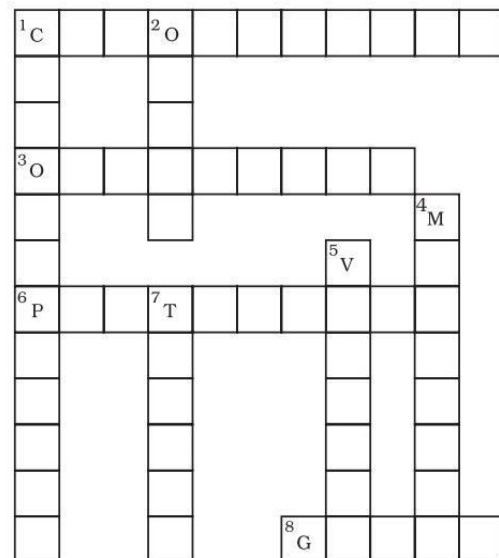
Complete the crossword with the help of clues given below:

Across

1. This is necessary for photosynthesis.
3. 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.
4. It separates the contents of the cell from the surrounding medium.
5. Empty structure in the cytoplasm.
7. A group of cells.



Answer 10:

Across

1. Chlorophyll
3. Organelle
6. Protoplasm
8. Genes

Down

1. Chloroplasts
2. Organ
4. Membrane
5. Vacuole
7. Tissue

¹ C	H	L	² O	R	O	P	H	Y	L	L	
H			R								
L			G								
³ O	R	G	A	N	E	L	L	E			
R			N						⁴ M		
O							⁵ V		E		
⁶ P	R	O	⁷ T	O	P	L	A	S	M		
L			I				C		B		
A			S				U		R		
S			S				O		A		
T			U				L		N		
S			E				⁸ G	E	N	E	S