Cell - Structure and Functions

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

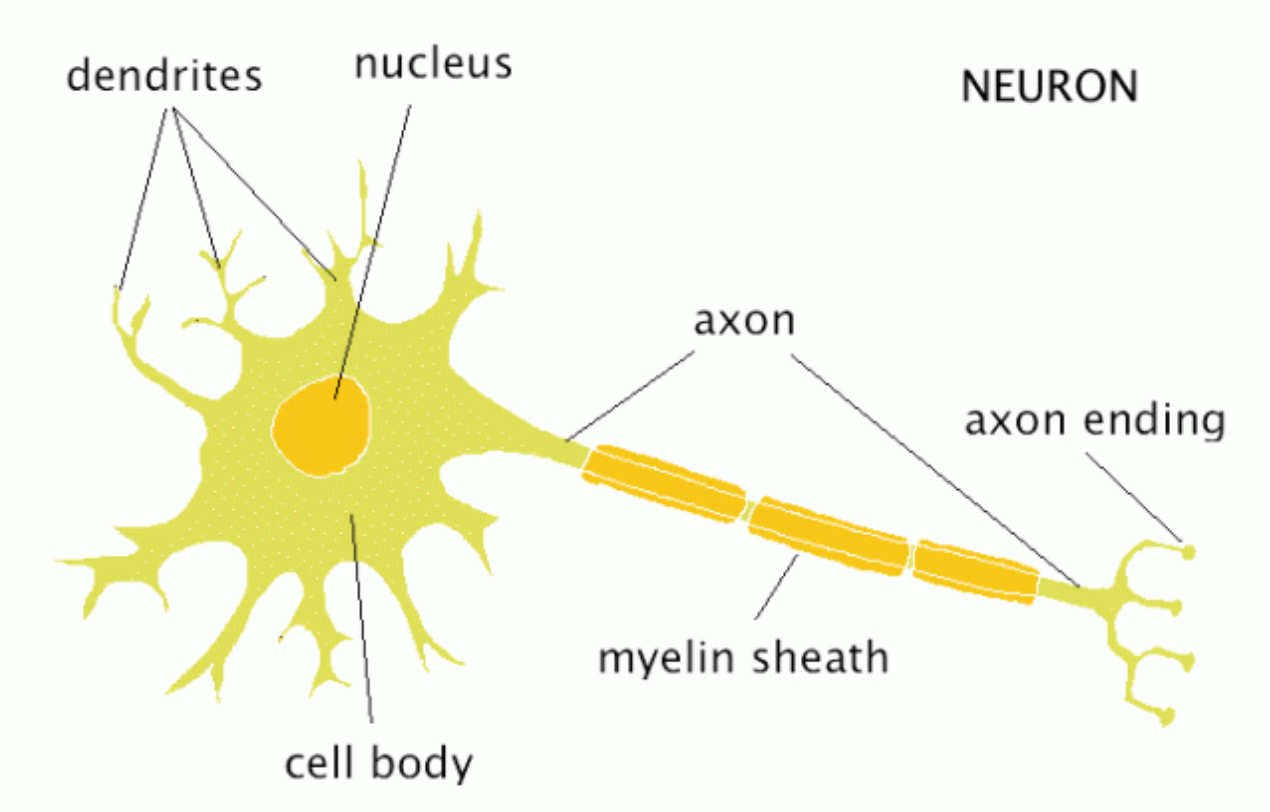
(a) Unicellular organisms have one-celled body. (T/F)
(b) Muscle cells are branched. (T/F)
(c) The basic living unit of an organism is an organ. (T/F)
(d) Amoeba has irregular shape. (T/F)

Sol:

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

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

Sol:



Function: The nerve cell or neuron generally receives and transmits the messages from one neuron to other. It helps brain to control and coordinate the body parts.

Q.3 Write short notes on the following.

(a) Cytoplasm
(b) Nucleus of a cell

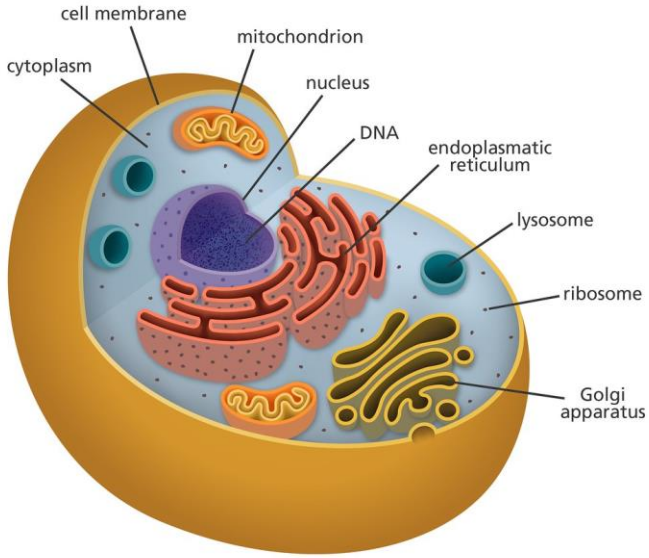
Sol:

(a) Cytoplasm: It is a jelly like substance present between the plasma membrane and nucleus. It is made up of proteins and lipids. In this substance, various cell organelles like the nucleus, mitochondria, Ribosomes, Golgi body, ER and all are float.

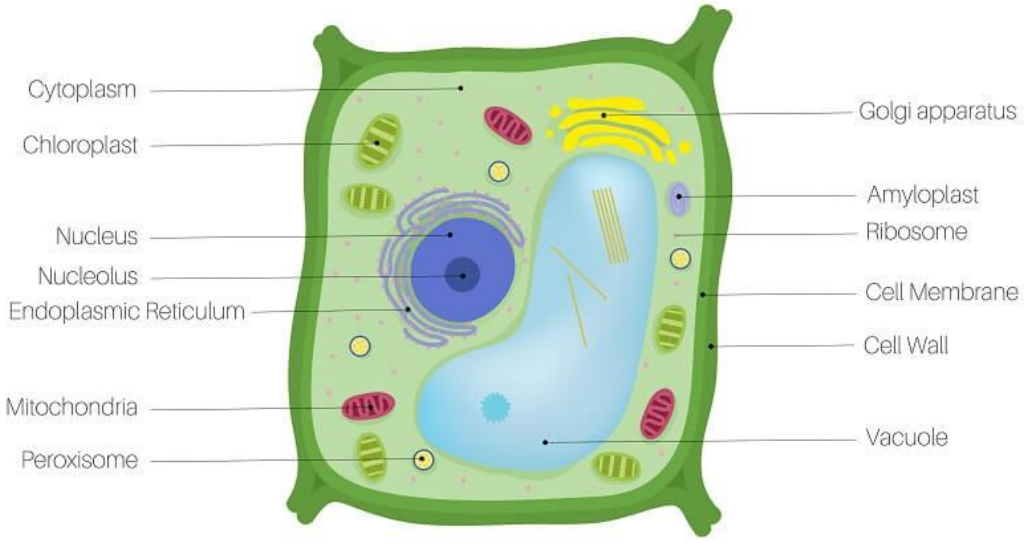
(b) Nucleus of a cell: It is main organelle of the cell. It is generally spherical in shape and contains the genetic material of the cell. Genetic material in our body is DNA in the form of chromosome. It is separated from the cytoplasm by a double lipid layer called as nuclear membrane. There are various pores in the membrane which allows nucleus to connect with the cell. It also controls all the metabolic activities of cell.

Q.4 Which part of the cell contains organelles?
Sol: Cytoplasm, It is the jelly like substance, in which all the cell organelles float.

Q.5 Make sketches of animal and plant cells. State three differences between them.
Sol:
Animal cell:



Plant Cell:



Animal Cell	Plant Cell
Cell wall is absent.	Cell wall is present
Outermost covering layer is cell membrane.	Outermost covering layer is cell wall.
Plastids are absent in this cell	Plastids are present in this cell.
It has small size vacuoles.	It has large size vacuole.

Q.6 State the difference between eukaryotes and prokaryotes.

Sol: the difference between eukaryotes and prokaryotes

Eukaryotes	Prokaryotes
The nucleus is well define due to presence of nucleus membrane around the nucleus.	The nucleus is not well define due to absence of nuclear membrane.
This type of cells have simple type structure.	This type of cells have complex structure.
Example : Plant Cell and animal Cell	Example: Bacteria and blue green algae.

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

Sol: Chromosomes are found in the nucleus in the form of chromatin. Chromosome is the genetic material which stores all the information called genes and is passed on from one generation to another generation.

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

Sol: Each living being like –animal, plant and bacteria is made up of cells. These organisms have different types of cell. For simple organisms like bacteria and amoeba etc., they have a single type of cell to do all the required functions to survive. And for complex organisms like human being, cells combine to form tissues and tissues combine to form organs. Similarly, organs combine form organ systems to perform different life processes. From this we can say that cells are the structural units of living organisms.

Q.9 Explain why chloroplasts are found only in plant cells?

Sol: Chloroplast is the plastid which has a green pigment known as chlorophyll which absorbs sunlight and produces food for the plants by the process of photosynthesis. As photosynthesis is an important process in plant cells for making food and not to be done by animal cells, that' why the chloroplast is only present in the plant cell.

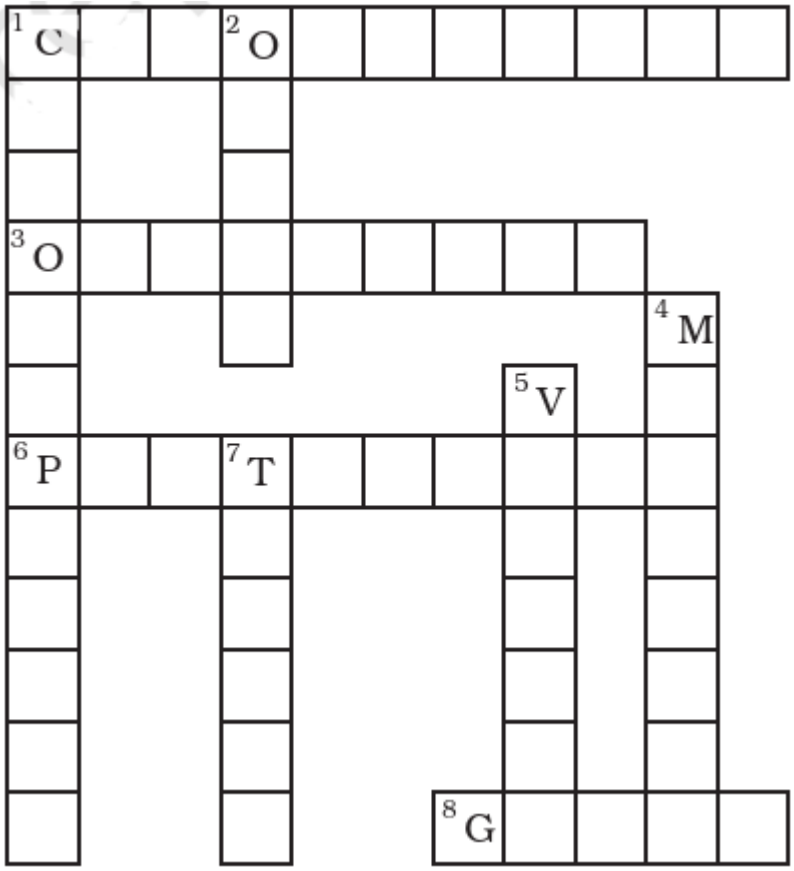
Q.10 Complete the crossword with the help of clues given below.

Across

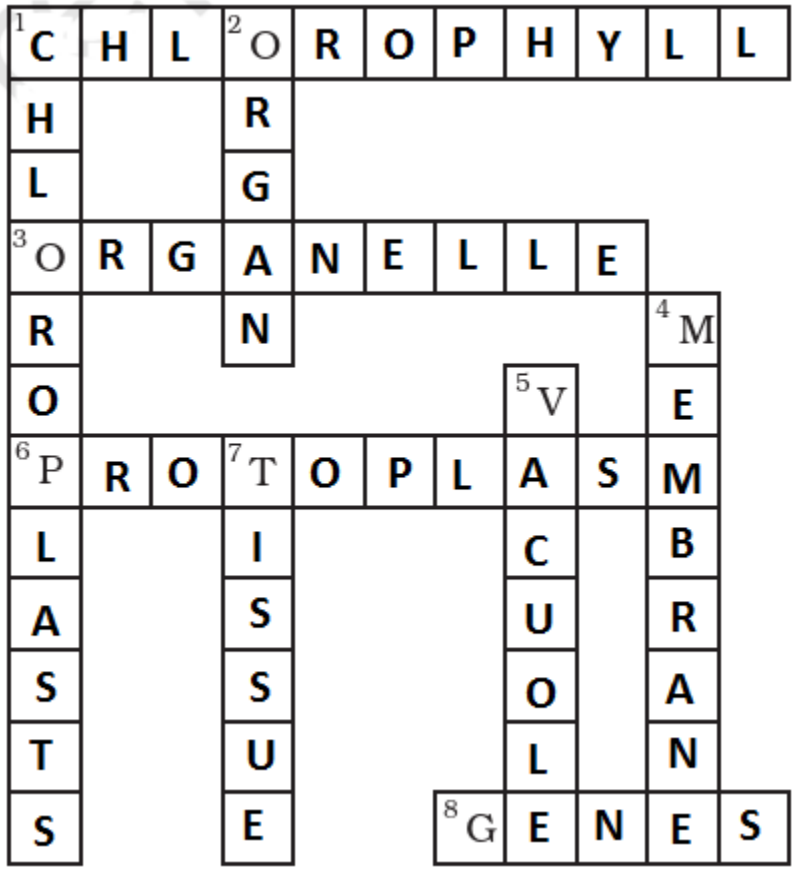
1. This is necessary for photosynthesis.
2. Term for component present in the cytoplasm.
6. The living substance in the cell.
8. Units of inheritance present on the chromosomes.

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.
7. A group of cells.


1 C
2 O
3 O
4 M
5 V
6 P
7 T
8 G

Sol:


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