

Assignment 1 Subject: - Science Class: - IX Teacher: - Mrs. Sandhya Sood

Name: _____ Class & Sec: _____ Roll No. _____ Date: 30.03.2020

Cell – Structure and Functions

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)

Soln:

- a) True
- b) False
- c) False
- d) True

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

Soln:

Human Nerve cell

The main function of the nerve cell is to transmit messages to the brain from receptor organs and vice versa. It has control over the working of different parts of the body.

3. Write short notes on the following.

- (a) Cytoplasm
- (b) Nucleus of a cell

Soln:

(a) Cytoplasm:

The cytoplasm is a fluid that contains all the cell organelles such as the Mitochondria, Ribosomes, Golgi bodies, etc. It is present between the nucleus and the plasma membrane. It helps in the exchange of materials between cell organelles. It is made up of eighty percent water and is usually clear and colourless.

(b) The nucleus of a cell:

The Nucleus is a double-membrane bound cell organelle present in eukaryotic cells. It contains the DNA, the genetic material. It is the command centre of the cell and is spherical in shape. It has the following components:

- Cell and Nucleus Diagram
- Nuclear membrane
- Nucleolus
- Chromosomes

Nuclear membrane:

It has is a double-layered membrane. It separates the contents of the nucleus from the cytoplasm and acts as a wall. It has pores that allow the transfer of certain substances in and out of the cell.

2. Nucleolus:

It is a small dense spherical body. It is not bound by any membrane.

3. Chromosome:

These are thread-like structures that carry genes. All the necessary information required for the transfer of characteristics from the parents to the offspring are stored in the genes. Inheritance of characteristics is possible only because of chromosomes.

4. Which part of the cell contains organelles?

Soln:

Various cell organelles are present in the cytoplasm. It is a clear and colorless fluid that contains organelles like Mitochondria, Ribosomes, Golgi bodies.

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

Soln:

Plant cell	Animal cell
They are large in size	They are smaller than plant cells
The cell wall is present	The cell wall is absent
Vacuoles are large	Vacuoles are small
Plastids could be seen	Except for Euglena, Plastids could not be seen in animal cells.
Animal and plant cell	

6. State the difference between eukaryotes and prokaryotes.

Prokaryotes	Eukaryotes
Most of them are unicellular	Most of them are multicellular
There is no nuclear membrane.	There is a nuclear membrane.
So, the nucleus is poorly defined.	So, the nucleus is well defined.
Not all cell organelles are present	All the cell organelles are present.
Nucleolus is absent	Nucleolus is present
Eg: Blue-green algae, Bacteria	Eg: Plant, Animal cells and Fungi.

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

Soln:

Chromosomes are thread-like structures present in the nucleus that carry genes. All the necessary information required for the transfer of characteristics from the parents to the offspring are stored in the genes. Inheritance of characteristics is possible only because of chromosomes.

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

Soln:

Various components of plants and animals are constituted by cells. It is the smallest unit of life and is capable of all living functions. They are the building blocks of life. That is the reason why cells are referred to as 'the basic structural and functional blocks of life'.

Cells exist in various shapes and sizes and perform a wide range of activities.

Their shapes and sizes are related to the function it performs.

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

Soln:

Chloroplasts are plastids required for the food making process, called photosynthesis, and thus they are only present in plant cells.

Frequently Asked Questions

What is Cytoplasm?

The cytoplasm is a fluid that contains all the cell organelles such as the Mitochondria, Ribosomes, Golgi bodies, etc. It is present between the nucleus and the plasma membrane. It helps in the exchange of materials between cell organelles. It is made up of eighty percent water and is usually clear and colourless.

Define Nucleus of a cell?

The Nucleus is a double-membrane bound cell organelle present in eukaryotic cells. It contains the DNA, the genetic material. It is the command centre of the cell and is spherical in shape.

Which part of the cell contains organelles?

Various cell organelles are present in the cytoplasm. It is a clear and colorless fluid that contains organelles like Mitochondria, Ribosomes, Golgi bodies.

Where are chromosomes found in a cell?

Chromosomes are thread-like structures present in the nucleus that carry genes. All the necessary information required for the transfer of characteristics from the parents to the offspring are stored in the genes. Inheritance of characteristics is possible only because of chromosomes.

Explain why chloroplasts are found only in plant cells?

Chloroplasts are plastids required for the food making process, called photosynthesis, and thus they are only present in plant cells.

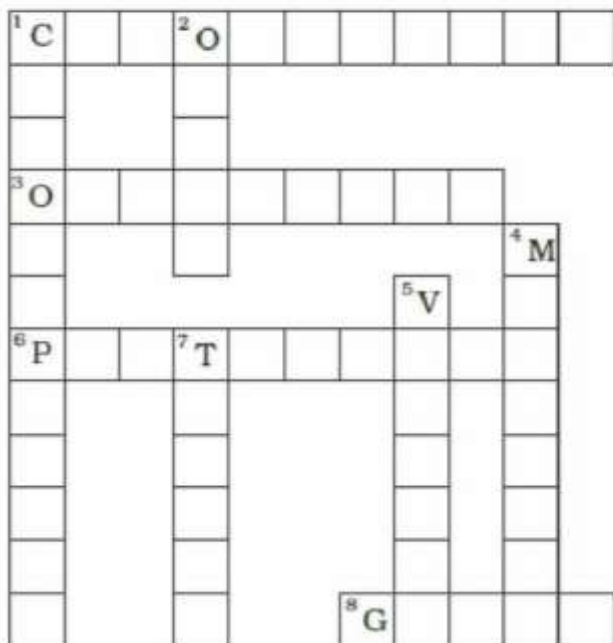
10. Complete the crossword with the help of clues given below.

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.



Soln:

Across

1. Chlorophyll
2. Organelle
3. Protoplasm
4. Genes

Down

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

