



INDIAN SCHOOL AL WADI AL KABIR

Class: VIII	Department: SCIENCE 2020 - 21	Date: 30.04.2020
Worksheet No.: 1	Topic: Cell- structure and functions	NOTE: A4 FILE FORMAT
NAME OF THE STUDENT:	CLASS & SEC:	ROLL NO.

I. OBJECTIVE TYPE QUESTIONS:

- Majority of cells cannot be seen directly with our naked eyes because:
 - Organisms are generally unicellular.
 - Cells are microscopic.**
 - Cells are present only inside the body.
 - Cells are grouped into tissues.
- Which one of the following term is not a part of the nucleus?
 - Mitochondria**
 - chromosome
 - nucleolus
 - gene
- A suitable term for the various components of cell is:
 - Tissue
 - chromosomes
 - cell organelles**
 - genes
- The jelly-like fluid substance present in cells is called:
 - protoplasm
 - chloroplast
 - chromosome
 - cytoplasm**
- Read the following terms and select the pair that is related to inheritance of characters.
 - cell wall and cell membrane
 - chromosome and mitochondria
 - chloroplast and cell membrane
 - chromosome and genes**
- The most important function of cell membrane is that it:
 - controls the entry and exit of materials from cells.**
 - controls only the entry of materials into cells.
 - controls only the exit of materials from cells.
 - allows entry and exit of materials without any control.
- Of the following parts of a cell listed below, name the part that is common to plant cell, animal cell and a bacterial cell.
 - chloroplast
 - cell membrane**
 - cell wall
 - nucleus

For question numbers 8 to 10, two statements are given- one labelled Assertion (A) and the other labelled Reason (R).

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

- i) Both A and R are true and R is correct explanation of the assertion.
- ii) Both A and R are true but R is not the correct explanation of the assertion.
- iii) A is true but R is false.
- iv) A is false but R is true

8. **Assertion-** Bacteria is a prokaryote.

Reason- The bacterial cell is not surrounded by a well-defined cell membrane.

Ans: iii) A is true but R is false.

9. **Assertion-** The nerve cell is long and branched

Reason- To receive and transfer messages, thereby helping to control and coordinate the working of different parts of the body.

Ans: i) Both A and R are true and R is correct explanation of the assertion.

10. **Assertion-**Nucleus is the control centre of a cell.

Reason-Nucleus is a spherical body located in the centre of a cell.

Ans: ii) Both A and R are true but R is not the correct explanation of the assertion.

II. BASIC CONCEPTS LEVEL:

1. Name the scientist who coined the term 'cell' and What is a cell? [Hint- Robert Hooke, Cell is a structural and functional unit of life.]
2. A hen's egg can be seen easily. Is it a single cell or a group of cells? [Hint- A single cell]
3. What are tissues? [Hint- Group of cells that carry out a specific function E.g. Muscular tissue, blood.]
4. Name the cell organelle and pigment that is responsible for green colour in leaves. [Hint- Chloroplast is the organelle and chlorophyll is the pigment responsible for green colour of leaves.]
5. What do you understand by the terms –protoplasm and cytoplasm. [Hint-Protoplasm is the living contents of a cell which includes the nucleus and cytoplasm. Cytoplasm is the jellylike material, which is present between the cell membrane and the nucleus.]
6. What are stains? Give an example of a stain. [Hint-Stains are the dyes which are used to colour the parts of a cell to observe them clearly under a microscope E.g. Methylene blue and safranin]
7. Which of the two has a large vacuole: a plant cell or an animal cell? [Hint- A plant cell]
8. Classify the following terms into cells, organs and organelles: WBC, Stomach, Mitochondria, Neurons, Golgi bodies, Kidney [Hint- cells- WBC and Neurons, organelles-

Mitochondria and Golgi bodies, Organs- Kidney and stomach]

III. INTERMEDIATE LEVEL:

1. State the differences between unicellular and multicellular organisms.
2. What advantage does amoeba derive by changing shape? [Hint-The change in shape is due to the formation of pseudopodia which facilitates movement and help in capturing food.]
3. What is a gene? Write its function. [Hint- Gene is a unit of inheritance. It controls the transfer of hereditary characteristic from parents to offspring]
4. Differentiate between an organ and an organelle. [Hint- An organ is the collection of tissues performing the similar function. An organelle is a small, specialized structure found in the cytoplasm of the cells which carries out a specific life process.]
5. What are the functions of cell wall in plant cells? [Hint- (i) to give shape and support to the plant cell. (ii) to provide protection against variations in temperature, atmospheric moisture, etc. (iii) prevents water loss. (iv) Provides rigidity to the plant cell.]
6. Distinguish between prokaryotic and eukaryotic cell with suitable examples.
7. Observe the following diagrams and answer the following questions:



Fig 1

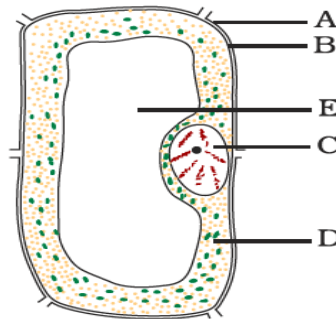


Fig 2

- i) Identify the cells given as fig 1 and 2
 - ii) Label the parts marked in the fig 2
 - iii) Does fig 1 represent a prokaryotic or Eukaryotic cell? Why? [Hint- i) Animal cell and Plant cell, ii) A-cell wall, B- Cell membrane, C- Nucleus, D-Cytoplasm, E- Vacuole]
8. State the differences between animal cell and plant cell.
 9. Write a short note on the structure of a nucleus.
 10. Draw a neat diagram of the following
 - i) Nerve cell.
 - ii) Animal cell
 - iii) Plant cell
 - iv) Red blood cells
 - v) Muscle cells

IV. ADVANCED LEVEL:

1. How is division of labour done in the cells of living organisms? [Hint- Cells show very neat division of labour, each cell has various organelles which have their own function to perform.]
2. Explain why a cell is called the structural and functional unit of living organisms.

[Hint- Cell is called structural unit because body of all the organisms is made up of cells. It is functional unit of life because all the functions of body such as nutrition, respiration, excretion etc. are carried out by the cells.]

3. What would happen if a cell lacks nucleus? [Hint- The cell will die]

4. Complete the given table:

SLNO:	DESCRIPTION	CELL PART
i)	It allows movement of the materials in and out of the cell.	
ii)	The coloured organelles found in the cytoplasm of a plant cell.	
iii)	The living component of a cell consisting of cytoplasm and the nucleus.	
iv)	It provides rigidity to the plant cells	

[Hint- i) Cell membrane, ii) Plastids iii) Protoplasm iv) cell wall]

IV.EXEMPLAR QUESTIONS:

1. Cells consist of many organelles, yet we do not call any of these organelles as structural and functional unit of living organisms. Explain. [Hint-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.]
2. 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. [Hint- I agree because of 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 to performs. For example, the nerve cells in both, the elephant and the rat is long and branched. They perform the same function, that of transferring messages.]

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