

परमाणु ऊर्जा शिक्षण संस्था, मुंबई

ATOMIC ENERGY EDUCATION SOCIETY, MUMBAI

SESSION: 2023-24

CLASS: 9

SUBJECT: BIOLOGY

WORKSHEET NO. 1

Name of the Chapter: The Fundamental Unit of Life

Name of the topic: Cell

Q 1. Choose one correct option for the following questions (MCQ): 10 X 1 = 10 Marks

1. Movement of water molecules from higher to lower concentration through semi-permeable membrane is called as:
  - a. Plasmolysis
  - b. Diffusion
  - c. Osmosis
  - d. Transpiration
2. Shrinkage of the cell content away from the cell wall is called as:
  - a. Diffusion
  - b. Plasmolysis
  - c. Ascent of sap
  - d. Photosynthesis
3. We are mostly internal, small-sized \_\_\_\_\_ found in eukaryotic cells:
  - a. Organs
  - b. Lymph nodes
  - c. Glands
  - d. Organelles
4. Identify us: We're non-green coloured plastids who attract animals for pollination:
  - a. Leucoplasts
  - b. Lysosomes
  - c. Chloroplasts
  - d. Chromoplasts
5. If there were no \_\_\_\_\_, packaging and dispatching of materials synthesized by the cell will stop:
  - a. Nuclei
  - b. Golgi bodies
  - c. Protoplasm
  - d. Membranes
6. \_\_\_\_\_ is called as powerhouse of a cell.
  - a. Mitochondria
  - b. Cytoplasm
  - c. Plastid
  - e. Nucleus
7. Which organelle present in the liver of animal cells detoxifies poison?
  - a. Rough Endoplasmic Reticulum
  - b. Smooth Endoplasmic Reticulum
  - c. m-RNA
  - d. r-RNA
8. \_\_\_\_\_, mitochondria and plastids have their own DNA & Ribosomes
  - a. Cytoplasm
  - b. Golgi Apparatus
  - c. Vacuole
  - d. Nucleus
9. Movement of materials in and out of the cells take place by \_\_\_\_\_ & Osmosis.
  - a. Plasmolysis
  - b. Protein synthesis
  - c. Exocytosis
  - d. Diffusion
10. Who discovered the first living cell?
  - a. Antony Van Leeuwenhoek
  - b. Robert Hooke
  - c. Schwann
  - d. Kölliker

Q 2. Answer the questions in one or two sentences: 10 X 1 = 10 Marks

1. Name the organelle that is called the powerhouse of the cell, and Why?
2. Why is the plasma membrane called as selectively permeable membrane?
3. What is plasmolysis?
4. Do vacuoles store any material? Name at least three materials stored by them.
5. What is an ATP (Expand) and its use?
6. Justify the statement 'All cells come from pre-existing cells'.
7. What are chromosomes?
8. Explain cytoplasm.
9. What is the function of nucleus in a cell?
10. What lacks in a virus that makes it dependant on a living cell to multiply?

Q 3. Answer the questions in brief (3-4 sentences): 10 X 2 = 20 Marks

1. Why do dry raisins swell-up when placed in water?
2. Explain the structure and function of Golgi bodies.
3. Name and explain - with examples - the types of cells based on organization.
4. Explain what would happen if we put an animal cell in salt or sugar solution.
5. Write two differences between a eukaryotic and a prokaryotic cell. (Table)
6. State the types and functions of Endoplasmic Reticulum.
7. Explain isotonic, hypotonic and hypertonic solutions.
8. What is the advantage of deeply folded membrane in mitochondria?
9. What is the function of plastids?
10. What will happen if an RBC is kept in concentrated saline solution? Why?

Q 4. Answer the questions elaborately: 5 X 3 = 15 Marks

1. What does 'Cell theory' state? Which organism is an exception and why?
2. Write three points of difference between diffusion and osmosis. (Table)
3. Write three points of difference between a plant cell and an animal cell.
4. Explain membrane biogenesis.
5. Draw a neat labelled diagram of an animal cell.

Q 5. Answer the questions descriptively: 5 X 5 = 25 Marks

1. Differentiate between mitochondria and plastids (three points). What are the different types of plastids based on colours and functions? Quote one or two examples.
2. Draw a neat – labelled diagram of a plant cell w.r.t. the following organelles to locate:
  - a. Nucleus, b. Nucleolus c. Chloroplast, d. Golgi apparatus & e. Mitochondrion
3. Write one function each of the following:

- a. Lysosome, b. Chloroplast, c. Vacuole, d. Microvilli & e. Nucleus
4. Why are lysosomes also called as suicidal bags, and how are they useful?
  5. Ishu was helping his mother in laying the table when they had some guest for lunch at 1 p.m. Ishu was about to sprinkle salt on the garnished salad at 12:30 p.m. His mother stopped him from doing so and told him that it was too early to sprinkle salt on the salad, he should do so only when they are seated for having the lunch. Ishu tries to find out the reason....
  6. (a) What would happen if salt is sprinkled on the salad?
  7. (b) Which property of cells is seen in adding salt to it?
  8. (c) What two values of Ishu can be observed through the situation above?