INDIAN SCHOOL NIZWA - WORKSHEET

BIOLOGY

CH:4 Fundamental Unit of life

Name: _____ Date:_____ Class: IX Sec: ABC

1.	A cell is placed in a solution and it swells up. What can be concluded about the nature of the solution? A. The solution is isotonic B. The solution is hypertonic C. The solution is hypotonic D. The solution is saturated
2.	Which of the following cell organelles is semi-autonomous and has its own DNA? A. Ribosome B. Endoplasmic Reticulum C. Mitochondrion D. Golgi Apparatus
3.	A person drinks saltwater accidentally. What cellular process may be disturbed in his body cells? A. Endocytosis B. Osmosis C. Diffusion of oxygen D. Respiration
4.	If the function of the mitochondria is disrupted in a cell, which of the following will be most directly affected? A. Synthesis of proteins B. Storage of genetic material C. Release of energy D. Movement of water into the cell
5.	Which organelle is called the “suicidal bag” of the cell and why? A. Nucleus, because it controls all activities B. Lysosome, because it digests the cell’s own components C. Ribosome, because it synthesizes toxic proteins D. Golgi body, because it removes waste
	Assertion Reason: Choose the correct option: A. **Both Assertion and Reason are true**, and **Reason is the correct explanation** of Assertion. B. **Both Assertion and Reason are true**, but **Reason is not the correct explanation** of Assertion. C. **Assertion is true**, but **Reason is false**. D. **Assertion is false**, but **Reason is true**.
6.	Assertion: In plant cells, the vacuole occupies a large space. Reason: Vacuoles help in energy production in plant cells.
7.	Assertion: Prokaryotic cells lack membrane-bound organelles. Reason: They have a well-defined nucleus with a nuclear membrane.
8.	Assertion: Plasma membrane is made up of cellulose and is rigid. Reason: It provides structural support to the cell.
9.	Assertion: In hypertonic solution, a plant cell undergoes plasmolysis. Reason: Water moves out of the cell by osmosis.

10.	Assertion: Mitochondria are known as the powerhouse of the cell. Reason: They have their own DNA and ribosomes.
11.	How does the cell wall differ from the plasma membrane in function?
12.	Why do onion peel cells not burst in distilled water, but red blood cells do?
13.	Explain how osmosis is essential for the survival of plant cells. Support your answer with an example.
14.	How does the structure of a vacuole differ in plant and animal cells? State its functions in both.
15.	A plant cell and an animal cell are placed separately in distilled water. a) Predict the changes that will occur in both cells. b) Explain the reasons behind these changes. c) How does the presence or absence of a cell wall influence these changes?
16.	Explain how prokaryotic and eukaryotic cells differ in their genetic material, cellular organization, and organelles. Support your answer with examples.
17.	Draw neat, labelled diagrams of ; a. An animal cell b. A prokaryotic cell c. A plant cell d. Mitochondrion e. Chloroplast