

# BRAIN INTERNATIONAL SCHOOL

Biology Assignment

Class: IX

April'21

## Chapter 5: The Fundamental Unit of Life

### 1. MULTIPLE CHOICE QUESTIONS:

- (i) Silver nitrate solution is used to study  
(a) endoplasmic reticulum (b) Golgi apparatus (c) nucleus (d) mitochondria
- (ii) Which part of alimentary canal receives bile from the liver?  
(a) Plasmalemma (b) Tonoplast (c) Rhizoplast (d) Mesosome.

### 2. ASSERTION-REASON QUESTIONS:

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

- (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.

- (a) **Assertion:** Mitochondria are known as “power house” of the cell.

**Reason:** Mitochondria are used to bring about energy requiring activities of the cell.

3. Unicellular freshwater organisms and most plant cells tend to gain water through osmosis. Absorption of water by plant roots is also an example of osmosis. Thus, diffusion is important in exchange of gases and water in the life of a cell. In additions to this, the cell also obtains nutrition from its environment. Different molecules move in and out of the cell through a type of transport requiring use of energy. The plasma membrane is flexible and is made up of organic molecules. However, we can observe the structure of the plasma membrane only through an electron microscope. The flexibility of the cell membrane also enables the cell to engulf in food and other material from its external environment. Such processes are known as endocytosis.

i) Mention the compounds which give fluidity and functional specificity to biomembranes.

ii) Name the process by which amoeba acquires its food.

iii) Most of the substances in the living world are transported across the cell membrane by the process of:

- (a) Osmosis (b) Endocytosis (c) Diffusion (d) Plasmolysis

iv) A student dissolved 1g of sugar in 10 mL of distilled water in a beaker A. He dissolved 10g of sugar in 100 mL of distilled water in beaker B. Then he dropped a few raisins in each. After two hours, he found the raisins

- (a) swollen in A and shrunken in B (b) shrunken in B only  
(c) swollen in both (d) shrunken in A only

v) A potato cup (peeled potato) is kept in a solution with half dipped and half floating, the potato cup also has a solution in it. After few hours the amount of solution in a cup remained the same because:

(a) both the solutions are isotonic

(b) the potato may be boiled one

(c) both (a) and (b)

(d) none of these.

4. Describe the structure of nucleus.
5. What happens when Rheo leaves are boiled in water first and then a drop of sugar syrup is put on it?
6. Differentiate between Prokaryotic cell and Eukaryotic cell.