Class 9 Science Chapter 5

The Fundamental Unit of Life

1 Marks Questions

1. Can you name the two organelles we have studied that contain their own genetic material?

Ans. Chloroplast and Mitochondria.

2. Where are proteins synthesised inside the cell?

Ans. Ribosomes are the sites for protein synthesis inside the cell.

3.Who discovered cells, and how?

Ans. In 1665, an English scientist named Robert Hooke discovered cells. When he saw honey comb like structure while observing thin slice of cork under his self-designed microscope.

2 Marks Questions

4. Why is the cell called the structural and functional unit of life?

Ans. All living organisms are made up of cells so cell is the basic building unit of a living organism and all the activities performed by a living organism are sum total of activities performed by its cells hence cell is called the structural and functional unit of life.

5. Why is the plasma membrane called a selectively permeable membrane?

Ans. Plasma membrane is a highly specific structure. It is made up of lipids and proteins who selectively allow the entry of substance into cell and exit of some other substances from the cell i.e. selectively permeable.

---

4. If the organisation of a cell is destroyed due to some physical or chemical influence, what will happen?

Ans. If the organisation of a cell is destroyed due to some physical or chemical influence then

such cell would not survive any more as all components of that cell are digested up by its lysosomes.

7. Why are lysosomes known as suicide bags?

Ans. Lysosomes are cell organelles filled with hydrolytic(digestive) enzymes. When a cell is damaged, its lysosomes may burst out and its enzymes digest up its own cell. Due to this, we can say that lysosomes are suicide bags.

8. What would happen if the plasma membrane ruptures or breakdown?

Ans. The rupture or break down of cell's plasma membrane indicates that cell is damaged and in such condition the lysosomes of the damaged cells may burst and the digestive enzymes present inside those lysosomes would digest their own cell. This will result into death of the cell.

9. What would happen to the life of a cell if there was no Golgi apparatus?

Ans. The functions of golgi apparatus includes storage, modification and packaging of products in the vesicles. If there was no golgi apparatus for a cell then all sort of storage, modification, packaging and dispatch of materials within and outside the cell would be impossible.

10. Which organelle is known as the powerhouse of the cell? Why?

Ans. It is Mitochondria of the cell also known as the power house of the cell because it synthesizes energy in the form of ATP during respiration which is vital for various life activities.

11. Where do the lipids and proteins constituting the cell membrane get synthesised? Ans. The endoplasmic reticulum is of two types:

i) Smooth endoplasmic reticulum (SER): It is responsible for the synthesis of lipids constituting cell membrane.

ii) Rough endoplasmic reticulum (RER): It bears the ribosomes and is therefore responsible for the synthesis of proteins constituting cell membrane.