

Cell- Fundamental Unit of Life: In-Text Questions

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Q.1 Who discovered cells and how?

Sol. Cell was discovered by the scientist Robert Hooke. He observed the cells in thin slices of cork. They appeared like small compartments when viewed through the microscope.

Q.2 Why the cell is called structural and functional unit of life?

Sol. A cell is capable of independently carrying out all the necessary life functions such as nutrition, excretion, respiration, etc. that's why a cell is called the functional unit of life. Since all the living beings are made up of cells. So, a cell is also called the structural unit of life.

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Q.1 How do substances like CO₂ and water move in and out of the cell? Discuss.

Sol. Substances like CO₂ and O₂ move in and out of the cell by the diffusion process. Diffusion is the movement of particles from high concentration to lower concentration in order to attain concentration equilibrium.

While substance like water (H₂O) move in and out of the cell by the osmosis process. The movement of water from high concentration to lower concentration through a semi-permeable membrane is called osmosis.

Q.2 Why the plasma membrane is called a selectively permeable membrane?

Sol. Plasma membrane allows the entry and exit some selected substances. Hence it is called a selectively permeable or semi-permeable membrane.

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

Sol. Mitochondria and Chloroplast are the two cell organelles that contain their own genetic material.

Q.2 If the organisation of a cell is destroyed due to some physical or chemical influence, what will happen?

Sol. Various parts of a cell are responsible for various functions. If the organisation of a cell is destroyed due to some physical or chemical influence, then cell will not be able to survive and it will be digested by its cell organelle lysosomes.

Q.3 Why are lysosomes known as suicide bags?

Sol. Lysosomes consist of digestive enzymes. If rupture in the lysosome happens due to any reasons, the enzymes are released in the cytoplasm and these enzymes digest the contents of the cell. This results in cell death. Due to this reason, lysosome is also known as suicide bags of cells.

Q.4 Where are proteins synthesized inside the cell?

Sol. Proteins are synthesized in ribosome.