

Cell- Fundamental Unit of Life: Exercise Questions

Q.1 Make a comparison and write down ways in which plant cells are different from animal cells.

Sol. A comparison between plant cells and animal cells

Plant cell	Animal cell
Cell wall is present in plant cells	Cell wall is absent in animal cells.
Plastids is present in plant cells	Plastids is absent in animal cells.
This types of cell usually have very large and single vacuole.	This type of cells have very small and multiple vacuole.

Q.2 How is a prokaryotic cell different from a eukaryotic cell?

Sol.

Prokaryotic cell	Eukaryotic cell
This type of cells are generally small in size (1 – 10µm).	This type of cells are generally large in size (5– 100µm).
Nuclear region is poorly defined and nuclear membrane is absent	Nuclear region is well defined and surrounded by double layer nuclear membrane.
This type of cells have single chromosome.	This type of cells have more than one chromosome.
In this type of cells, membrane bound cell organelles are absent	In this type of cells, membrane bound cell organelles are present.

Q.3 What would happen if the plasma membrane ruptures or breaks down?

Sol. The most important function of the plasma membrane is to protect the contents of a cell from the external environment and maintain the shape of the cell. It contains cell organelles and cytoplasm. In case the plasma membrane ruptures or breaks down, the cell contents would be come out to the external environment. And finally cell will die.

Q.4 What would happen to the life of a cell if there was no Golgi apparatus?

Sol. The most important role of the Golgi apparatus in cells is packaging various substances for further use or for storage. If there was no Golgi apparatus, various useful substances would not be transformed in proper forms for further use. For example, certain substances like protein and lipid are important for the formation of plasma membrane and in absence of Golgi apparatus will face the problem for the formation of new cells during cell division.

Q.5 Which organelle is known as the powerhouse of the cell? Why?

Sol. Cell organelle mitochondrion is known as the powerhouse of the cell. Because in this cell organelle, cellular respiration takes place and the energy is released in the form of ATP. These ATP molecules are utilized for different activities of life.

Q.6 Where do the lipids and proteins constituting the cell membrane get synthesised?

Sol. Lipids are synthesized in the cell organelle endoplasmic reticulum. Protein is synthesized in ribosomes which are usually present on the rough ER and lipids are synthesized in smooth ER.

Q.7 How does an Amoeba obtain its food?

Sol. Amoeba obtains its food through the cell membrane. Amoeba projects its cell membrane into numerous finger-like outgrowths which are called pseudopodia and surrounds a food particle and make a food vacuole.

Q.8 What is osmosis?

Sol. It is the process of water movement from high concentration to low concentration through a semi-permeable membrane.