

Long Answer Questions

Q. 1. Cells consist of many organelles, yet we do not call any of these organelles as structural and functional unit of living organisms. Explain. [NCERT Exemplar]

Ans. Although cell organelles have specific structures and perform specific functions but they cannot be called structural and functional units of living organisms. This is so because they can perform their functions only when they are within a living cell. They cannot function outside the cell as an independent unit.

Q. 2. Why do plant cells have an additional layer surrounding the cell membrane? What is this layer known as? [NCERT Exemplar]

Ans. As plants cannot move they need protection against variations in temperature, high wind speed, atmospheric moisture, etc. These variations damage the plant cell to an extent of killing them. The cell membrane is a flexible and semi-permeable membrane and cannot fight the adverse climatic changes in its own. Therefore, a stiffer outer covering is present which protects and gives shape to the plant cell. This layer is called the cell wall.

Q. 3. The size of the cells of an organism has no relation with the size of its body. Do you agree? Give reason for your answer. [NCERT Exemplar]

Ans. I agree because the cells in the body of an elephant is not necessarily bigger than those in a rat, it is not true that bigger organisms have cells of bigger size in their body. The size of the cell in an organism is related to the function it performs. For example, the nerve cells in both, the elephant and the rat are long and branched. They perform the same function, that of transferring messages.