

Class-9

Subject-English

Topic -5

Question 1:Who discovered cells and how?

Solution:Cell was discovered by Robert Hooke with the help of his self-designed microscope. He examined a thin slice of cork and saw that the cork resembled the structure of a honey comb consisting of many compartments.

Question 2:Why is the cell called the structural and functional unit of life?

Solution:There are various components in the animal and plant cell known as cell organelles.Each kind of cell organelle performs a specific function, such as making new materials in the cells, release of waste, transportation, etc. Thus, a cell can perform all its functions with the help of these organelles. That is why the cells are called structural and functional unit of life.

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

Solution:Substances like CO₂ accumulate in high concentration inside the cell. There is CO₂ concentration difference in the internal and external environment of a cell. CO₂ moves out of the cell, from a region of high concentration to a region of low concentration outside the cell by the process of diffusion.

Question 2: Why is the plasma membrane called a selectively permeable membrane?

Solution: The plasma membrane selectively allows the entry and exit of some materials in and out of the cell. It also prevents movement of some other materials. Therefore, it is called a selectively permeable membrane.

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

Solution: Mitochondria and plastids.

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

Solution: The cell will not be able to perform its basic functions and will die after sometime.

Question 3: Why are lysosomes known as suicide bags?

Solution: The lysosomes contain very powerful hydrolytic enzymes which are capable of breaking down organic matter. For example, when a cell gets damaged, then lysosomes burst and enzymes digest their own cell. Hence, the lysosomes are known as 'suicide bags' of cells.

Question 4: Where are proteins synthesised inside the cell?

Solution: Ribosomes are the site of protein synthesis.

Exercises

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

Solution: Comparison of plant cell and animal cell

Plant Cell

Cell wall is present outside the plasma membrane.

Generally regular in shape.

Larger in size than animal cells

Plastids are present.

A permanent and large vacuole is present.

Animal Cell

Cell wall is absent.

Generally irregular in shape.

Smaller in size than animal cells.

Plastids are absent except in Euglena.

Vacuoles are many, small and temporary.

