

# Science

([www.tiwariacademy.net](http://www.tiwariacademy.net))

(Chapter 5)(The Fundamental Unit of Life)(Intext Questions)

Class - 9

 Page 61

## Question 1:

How do substances like CO<sub>2</sub> and water move in and out of the cell? Discuss,

## Answer 1:

The cell membrane is selectively permeable and regulates the movement of substances in and out of the cell.

### *Movement of CO<sub>2</sub>:*

CO<sub>2</sub> is produced during cellular respiration. Therefore, it is present in high concentrations inside the cell. This CO<sub>2</sub> must be excreted out of the cell. In the cell's external environment, the concentration of CO<sub>2</sub> is low as compared to that inside the cell. Therefore, according to the principle of diffusion, CO<sub>2</sub> moves from a region of higher concentration (inside the cell) towards a region of lower concentration (outside the cell). Similarly, O<sub>2</sub> enters the cell by the process of diffusion when the concentration of O<sub>2</sub> inside the cell is low as compared to its surroundings.

### *Movement of water:*

Water moves from a region of high concentration to a region of low concentration through the plasma membrane. The plasma membrane acts as a semi-permeable membrane, and this movement of water is known as osmosis. However, the movement of water across the plasma membrane of the cell is affected by the amount of substance dissolved in water.

## Question 2:

Why is the plasma membrane called a selectively permeable membrane?

## Answer 2:

The cell membrane or the plasma membrane is known as a selectively permeable membrane because *it regulates the movement of substances in and out of the cell*. This means that the plasma membrane allows the entry of only some substances and prevents the movement of some other materials.

[www.tiwariacademy.com](http://www.tiwariacademy.com)

A Free web support in education