

organisms interact with their external environment to maintain an internal environment favorable for the existence of cells. Osmotic phenomena in cells are determined by the relative concentration of solutes across membranes. The motion of molecules produces a variety of effects such as diffusion, osmosis and Brownian movement (is the presumably random moving of particles suspended in a fluid (a liquid or a gas) resulting from their bombardment by the fast-moving atoms or molecules in the gas or liquid). These membranes are boundaries that the solutes must cross to reach the cellular site where they will be utilized for the processes of life. Biological membranes are selectively permeable allowing some substances to move easily while completely excluding others. Diffusion is the movement of solute molecules from a region of high to low concentration. The movement of water and solutes is determined by membrane properties and solute gradients. Osmosis is the diffusion of water across a differentially permeable membrane. This flow of materials into or out of the cell is regulated by the membranes surrounding the cells. The substances dissolved in water are called solutes. The combination of a solvent such as water and dissolved solutes is a solution. In the process, materials pass between the organism and its environment as well as among cells within the organism. Almost all substances entering and leaving cells are dissolved in water. One of the most important functions within a living organism is to Molecules in cells are in constant motion. This motion increases with temperature. Living cells are made .up of 75--85 % water