

Biology Class 9 - Lecture Notes

- I. Pray
- II. Model of an Atom
- III. **Diffusion Experiment**
- IV. Describe Egg Osmosis Experiment
- V. Carbohydrates
- VI. Acidity and the pH Scale
 - A. low=acid, high=base/alkaline
 - B. Acids are proton donors. Bases are proton receivers.
 - C. **Litmus Paper**: Acids turn blue paper red. Bases turn red paper blue.

Definitions from Module 5 on next page

VII. Chemistry Definitions

- A. **Matter:** Anything that has mass and takes up space
- B. **Model:** An explanation or representation of something that cannot be seen
- C. **Element:** A collection (category) of atoms that all have the same number of protons
- D. **Molecules:** Chemicals that result from atoms linking together
- E. **Physical Change:** A change that affects the appearance but not the chemical makeup of a substance
- F. **Chemical Change:** A change that alters the makeup of the elements or molecules of a substance
- G. **Phase:** One of three forms – solid, liquid, or gas – which every substance is capable of attaining
- H. **Diffusion:** The random motion of molecules from an area of high concentration to an area of low concentration
- I. **Concentration:** A measurement of how much solute exists within a certain volume of solvent
- J. **Semipermeable Membrane:** A membrane that allows some molecules to pass through but does not allow other molecules to pass through
- K. **Osmosis:** The tendency of a solvent to travel across a semipermeable membrane into areas of higher solute concentration
- L. **Catalyst:** A substance that alters the speed of a chemical reaction but is not used up in the process
- M. **Organic Molecule:** A molecule that contains only carbon and any of the following: hydrogen, oxygen, nitrogen, sulfur, and/or phosphorous
- N. **Biosynthesis:** The process by which living organisms produce larger molecules from smaller ones
- O. **Isomers:** Two different molecules that have the same chemical formula
- P. **Monosaccharides:** Simple carbohydrates that contain 3 to 10 carbon atoms
- Q. **Disaccharides:** Carbohydrates that are made up of two monosaccharides
- R. **Polysaccharides:** Carbohydrates that are made up of more than two monosaccharides
- S. **Dehydration Reaction:** A chemical reaction in which molecules combine by removing water
- T. **Hydrolysis:** Breaking down complex molecules by the chemical addition of water
- U. **Hydrophobic:** Lacking any affinity to water
- V. **Saturated Fat:** A lipid made from fatty acids that have no double bonds between carbon atoms
- W. **Unsaturated Fat:** A lipid made from fatty acids that have at least one double bond between carbon atoms
- X. **Peptide Bond:** A bond that links amino acids together in a protein
- Y. **Hydrogen Bond:** A strong attraction between hydrogen atoms and certain other atoms (usually oxygen and nitrogen) in specific molecules