

UNIT 2 - BASIC PRINCIPLES OF BODY CHEMISTRY

STANDARDS AND OBJECTIVES

STANDARD

02 Students will explain basic principles of body chemistry.

OBJECTIVES

- 02.01 Review the following terms and concepts.
(states of matter, elements, basic components of the atom [nucleus, electrons, protons, and neutrons], ion [electrolyte])
- 02.02 Identify the four major elements in the body.
(carbon, hydrogen, oxygen, nitrogen)
- 02.03 Differentiate between a compound and a molecule.
- 02.04 Differentiate between a cation and an anion.
- 02.05 Describe the characteristics of ionic, covalent, and hydrogen bonds.
- 02.06 Define pH.
- 02.07 Categorize acidic, basic, or neutral solutions based on the pH of a solution.
- 02.08 Distinguish between “neutral” pH and the “average” pH range of the blood.
(neutral pH = 7.0, average pH of blood = 7.35 to 7.45)
- 02.09 Describe the properties of water and how it is utilized in the human body.
(universal solvent, transport, lubricant, heat capacity, chemical reactions)
- 02.10 Distinguish between inorganic and organic compounds.
(Inorganic compounds do not contain carbon, are small molecules, and usually form ionic bonds. Organic compounds usually contain carbon, are large molecules, form covalent bonds, and flammable)
- 02.11 Describe the structures and functions of carbohydrates, proteins, lipids, and nucleic acids.
- 02.12 Describe how the body produces energy during cellular respiration.
($\text{ATP} \leftrightarrow \text{ADP} + \text{P} + \text{ENERGY}$)