

Ch3 – Chemistry of Life

Section 1: Matter and Substances

1. What is the difference between an atom, element, and a compound?
2. Draw and label the structure of an atom (pick any atom from the book).
3. What elements are found in a chemical formula: H₂O?
4. What is polarity?
5. What are the main elements found in living things?
6. What is the difference between the three types of bonds: covalent, ionic, and hydrogen?
7. What is an ion?

Section 2: Water and Solutions

1. Explain the 4 properties of water.
 - A. Water molecules stick to each other and other things
 - B. Water molecules are polar (negative and positive sides) and act as a solvent
 - C. Water absorbs and releases heat without a large change in temperature
 - D. Ice floats on water
2. What is a solution?
3. What are the differences between acids and bases?

Section 3: Macromolecules

1. What is the main element of living things?

2. What are the 4 main types of macromolecules?

Macromolecule	Polymer (Many monomers)	Monomer (Basic Building Block)	Functions	Examples
Carbohydrate <i>Elements:</i>			1. 2.	Glucose <u>Storage:</u> Plants - _____ and _____ Animals - _____
Lipid <i>Elements:</i>	No True Polymers		1. 2. 3.	1. Triglyceride - _____ 2. 3. Wax 4. Hormones, Steroids, and _____
Protein <i>Elements:</i>			1. 2. 3. Movement 4. Transport oxygen 5. Immune system	1. 2. 3. muscle proteins 4. hemoglobin in red blood cells 5. antibiotics
Nucleic Acid <i>Elements:</i>	1. 2. 3.		1.	Same as polymers