**Chemistry of Life (Bio Chapter 2) Study Guide**

**Know the definitions of the following vocabulary words:**

* Homeostasis:
* Atom:
* Molecule:
* Compound:
* Element:
* Mixture:
* Ionic bond:
* Covalent bond:
* Cation:
* Anion:
* Hydrogen bond:
* Polarity:
* Cohesion:
* Adhesion:
* Surface tension:
* Solvent:
* Solute:
* Hydrophobic:
* Hydrophilic:
* Monomer:
* Carbohydrate:
* Lipid:
* Protein:
* Nucleic acid:
* Chemical reaction:
* Reactant:
* Products:
* Activation energy:
* Exothermic:
* Endothermic:
* Catalysts:
* Enzymes:
* Specificity:
* Substrates:
* Active site:

What are the 8 characteristics of all living things? (Use your mnemonic to remember!)

Be able to determine the number of protons, electrons, and neutrons in an atom using the Periodic Table.

What does the atomic number of an element tell you?

What does the mass number of an element tell you?

Be able to draw the atomic structure of an element using the Periodic Table.

Ionic bond form between:

Covalent bonds form between:

Hydrogen bonds form between:

How does an atom become a cation?

How does an atom become an anion?

Water has a high specific heat. What does this mean?

Water is often called the universal solvent. What does water dissolve?

How does the density of liquid water compare to the density of ice?

What are the major elements of life?

Describe the functions of the four groups of macromolecules.

What are the monomers of each group of macromolecules?

How does the energy of the reactants and products differ between an energy-absorbing reaction and an energy-releasing reaction?

What affect do catalysts (enzymes) have on the activation energy of the chemical reaction?

Explain how enzymes work, including the role of the enzyme-substrate complex.

What factors affect the activity of enzymes?