Name: _____ Period: _____ Date: _____

Chemistry of Life Assignment – Student Edition

I. Multiple Choice – Select the best answer.

1. An element is defined as _____.
    a) a substance that cannot be broken into a simpler form
    b) anything that has mass and takes up space
    c) a substance that cannot be dissolved in a solvent
    d) a substance that can be dissolved in a solvent

2. The three subatomic particles are called _____.
    a) proton, electron, isotope
    b) proton, electron, element
    c) proton, electron, neutron
    d) proton, electron, orbital

3. Which of the following best describes the difference between a cation and an anion?
    a) Anions are positively charged and cations are negatively charged.
    b) Cations gain electrons and anions lose electrons.
    c) Cations are positively charged and anions are negatively charged.
    d) Cations are gaseous and anions are metallic.

4. A(n) _____ is formed when two atoms share electrons, such as with hydrogen and oxygen in water.
    a) element
    b) covalent bond
    c) ionic bond
    d) hydrogen bond

5. The main elements found in living things are.
    a) Carbon, hydrogen and oxygen
    b) Carbon, sulfur and chlorine
    c) Carbon, oxygen and potassium
    d) Carbon, nitrogen and sodium

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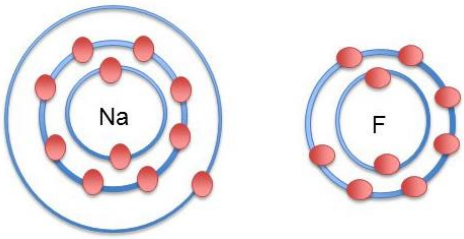
II. Use the diagram below of sodium (Na) and fluorine (F) to answer the questions that follow.



a) Predict the type of ion formed by each atom

_____

b) Identify the type of bonding these two atoms will undergo. _____

c) Name the compound that will be formed as a result of these two atoms bonding.

_____

d) What type of ion is sodium referred to in biology? _____

e) Where is sodium used in the body? _____

_____

III. How does the formation of ionic bonds between atoms differ from the formation of covalent bonds?

_____

_____

IV. Give an example of where each of the following types of bonding is seen

a) Hydrogen bonding _____

b) Covalent bonding _____

c) Ionic bonding _____

V. Give one difference between covalent bonds and hydrogen bonds

_____

_____