

Name \_\_\_\_\_

Date \_\_\_\_\_

### Matter, Elements, and Compounds

Materials: Periodic chart of elements, class notes, and textbook.

Answer the following questions completely:

1. Name the elements that make up 96% of living matter.

\_\_\_\_\_.

2. Examine the atoms mentioned in the above answer. List several reasons why these atoms are so popular with living things.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Differentiate among the following atoms: Ion, Isotope, and a neutral atom.

\_\_\_\_\_  
\_\_\_\_\_

4. If the half-life of  $C^{14}$  is 5,600 years, how much  $C^{14}$  will remain of a 12g. sample after 28,000 years? \_\_\_\_\_.

5. What properties of isotopes make them valuable in biological research and medicine?

\_\_\_\_\_  
\_\_\_\_\_

6. What must happen to an electron residing in the 1s orbit in order to reach the 3s orbit?

\_\_\_\_\_.

7. What must happen to the electron in the 3s orbit in order for it to enter the 1s orbit?

\_\_\_\_\_.

8. Examine the elements Hydrogen, Carbon, Nitrogen, and Oxygen. Diagram them in the space below, using the electron dot diagram.

9. Define electronegativity.

\_\_\_\_\_  
\_\_\_\_\_

10. How can one determine the electronegativity of an element by using the periodic Table of elements?

\_\_\_\_\_  
\_\_\_\_\_

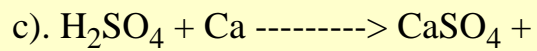
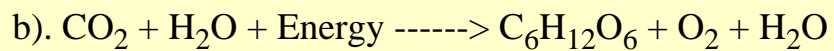
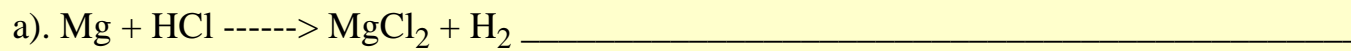
11. Differentiate among the three major types of chemical bonds.

\_\_\_\_\_  
\_\_\_\_\_

12. What criteria are necessary for a hydrogen bond to form?

\_\_\_\_\_

13. Define the reactants and the products of the following equations:  
Then balance them if needed.



H \_\_\_\_\_