**CHAPTER 6: CHEMISTRY IN BIOLOGY RFC #1**

\* Read the following questions, **THEN** read from Chapter 6 p. 147 to chemical bonds p. 152, **THEN** answer the following questions on your own paper in complete sentences.

1. What is the BIG IDEA for Chapter 6?
2. What is the THEME FOCUS?
3. What does chemistry study? Why do we discuss chemistry in biology?
4. How are atoms and elements related?
5. **Type II:** Describe the structure of an atom using the following words: proton, electron, neutron, nucleus, energy levels, neutral, positive charge, negative charge, overall charge.
6. Construct/Draw a sodium atom and label the particles. Sodium has 11 protons and 11 neutrons in its nucleus.
7. Looking at figure 1 on p. 148, how does the location of the electrons in an atom allow them to be involved in bonding?
8. What is an element? How many are there? How are they organized?
9. Why is the table for elements referred to as periodic?
10. Contrast periods and groups when referring to the periodic table?
11. How is an isotope different than atoms of the same element? Give an example.
12. What are isotopes that give off radiation?
13. Use figure 3 on p. 149 to answer the following questions.
    1. What is the most abundant element that exists in the Earth’s Crust?
    2. What is the most abundant element that exists in living things?
    3. Which element is found in organisms but absent in the Earth’s Crust according to the graph?
    4. What is the difference in the amount of oxygen in organisms compared to that found in the Earth’s Crust?
14. How does a radioisotope differ from an isotope?
15. Construct a graph that illustrates the radioactive decay of phosphorus-32 over a 12 week period. The half-life of P-32 is approximately 2 weeks.
16. What does each compound have?
17. **Type II:** Explain three unique properties that all compounds possess in a minimum of 7 lines. Underline each property.
18. Are all compounds molecules? Why or why not?
19. COMPLETE THE CHART BELOW TO THE BEST OF YOUR ABILITY.

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| ELEMENT | ATOMIC  SYMBOL | ATOMIC NUMBER | MASS NUMBER (ATOMIC MASS) | # OF PROTONS | # OF NEUTRONS | # OF ELECTRONS | # OF VALENCE ELECTRONS |
| HYDROGEN |  |  |  |  |  |  |  |
|  | C |  |  |  |  |  |  |
|  |  | 7 |  |  |  |  |  |
|  |  |  | 16 |  |  |  |  |
|  |  |  |  | 15 |  |  |  |
|  |  |  |  |  |  | 16 |  |