Name _____ Date _____ Period _____

Introduction to Biochemistry – Notes Organizer

Watch lecture video found on blog by Monday, Aug. 15

1. What is **Chemistry**?

2. Define ***Biochemistry***:

3. _____ are the building blocks of matter.

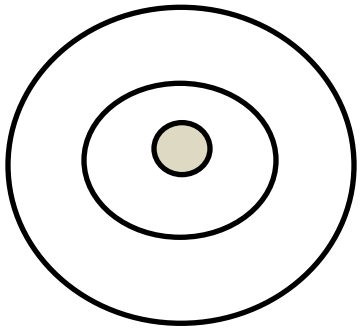
4. Describe the structure of an **atom**.

   a. ***Protons:***

   b. ***Neutrons:***

   c. ***Electrons:***

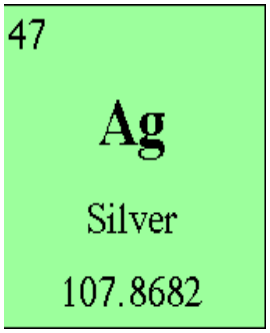
5. Illustrate the atomic structure by including a drawing that shows *protons, neutrons,* and *electrons*.



6. Describe *Elements*.

7. How is the periodic table organized?

8. Consider the image of the element silver below. Use the image to identify the following:
Atomic Number, Mass Number, Element Name, Number of Protons, Number of Neutrons



9. Define the following terms:

   a. Atomic Number

   b. Atomic Mass

10. How do you find the number of ***neutrons*** in an atom?

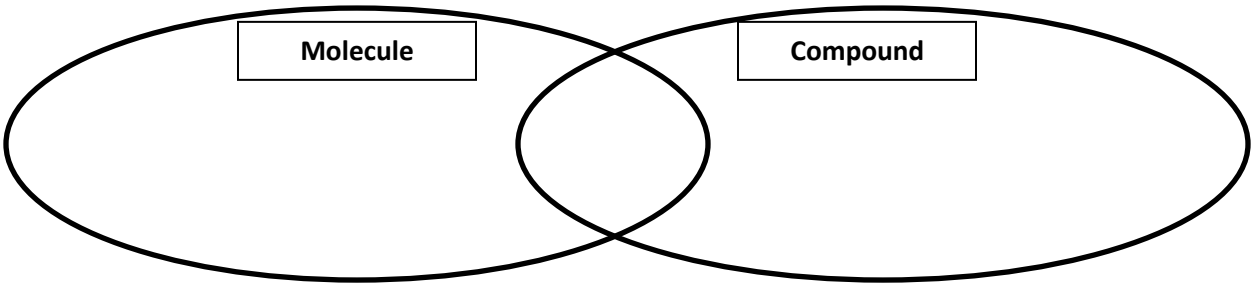
11. _____ hold atoms, compounds, and molecules together.

12. What are the two types of *chemical bonds* and what atoms do they bond together?

    a.

    b.

13. Compare and contrast ***Molecules*** and ***Compounds***.



14. ***All compounds are molecules, but not all molecules are compounds.*** Explain the truth of this statement by giving an example of a molecule that is NOT a compound.

15. Physical Reaction vs. Chemical Reaction

    a. **Physical Reaction**

        - Examples:

    b. **Chemical Reaction**

        - Examples:

16. The chemical equation below illustrates the biochemical process of _____. Using the equation, circle and label the ***reactants*** and ***products***.

$$6C0_2 + 6H_20 \rightarrow C_6H_{12}O_6 + 6O_2$$

17. What is **activation energy**?

18. What is the difference between *exothermic* and *endothermic* reactions?

19. Draw and explain the energy diagram for an **exothermic** reaction.

20. Draw and explain the energy diagram for an **endothermic** reaction.

21. What is an ***enzyme***?

22. Draw and explain the energy diagram for *reactions using enzymes vs. reactions not using enzymes*.

23. Define the following terms:

    a. **Substrate**:

    b. Active Site:

24. List biological processes which utilize enzymes

25. What does the "**lock and key**" model explain?

26. Click on the "Enzymes in Action" link found on the blog. Review the tutorial and then click on "Why Enzymes." ***What was the difference between the reaction taking place with and then without an enzyme?***