WLHS / Biology / Monson

Name_____ Date_____ Per_____

WEBQUEST: Chemistry of Life

Go to the following web address http://www.chem4kids.com/ .

Click on the *Atoms link*. Read the information and answer the following questions.

1) What are considered the alphabet in the "language of molecules"?_____

2) What are the 3 parts that make up all atoms?

_____ _____ _____

3) What are two ways that atoms of different elements are different?

4) Fill in the blanks below.

Particles of matter ➔ _____ ➔ Molecules ➔ _____ ➔

Cell organelles ➔ _____ ➔ Tissues ➔ _____

Click on the *Structure link* on the upper right hand side of the page. Read the information and answer the following questions:

5) Draw the structure of the atom below, labeling the charges on each particle.

6) Where are the electrons found?_____

7) a. Where is the nucleus of an atom? _____

b. What's found inside of it? _____

8) What is an **ION**?_____

9) Compare **CATIONS** and **ANIONS**.

Click on the *Ions link* on the upper right hand side of the page. Read the information and answer the following questions.

10) a. What is the charge of an atom if it is missing an electron?_____

b. What is the charge of an atom if it has an additional electron?_____

11) What are the two kinds of bonds?

_____ _____

12) Draw a diagram of an electrovalent (ionic) bond and **EXPLAIN** what is happening.

13) Draw a diagram of a covalent bond and explain what is happening.

Click on *"NEXT STOP ON SITE TOUR."* Read the information there on neutrons on isotopes. Answer the following questions.

14) a.What is an isotope? _____

b. **TRUE** or **FALSE** (circle one). An atom is the same element if it has an extra neutron.

15) Draw a picture of the two types of carbon isotopes.

Click on the *Compounds link* on the upper right hand side of the page. Read the information and answer the following questions.

16) An element is a substance made of only one kind of atom. What is a **COMPOUND**?_____

_____

Scroll ALL THE WAY DOWN to the bottom of the page, click on *Elements & the Periodic Table*. Complete the following chart.

17) The major elements in all cells are carbon, hydrogen, nitrogen, oxygen, phosphorous, and sulfur. Click on the link for each of these elements and complete the chart below with an interesting fact about each.

Element	Interesting Fact
carbon	
hydrogen	
nitrogen	
oxygen	
phosphorus	
sulfur	

Scroll ALL THE WAY DOWN to the bottom of the page, click on *Reactions*.

18) What are the three key points made regarding reactions?

i. _____

ii. _____

iii. _____

Click on *Next Page on Reactions*.

19) What is meant by rate of a reaction?

20) What are 3 factors that affect the rate of a reaction? **Explain HOW** each factor affects reaction rate.

- _____ **:** _____
- _____ **:** _____
- _____ **:** _____

Click on *Catalysts and Inhibitors*. (In the upper right hand margin.)

21) What is a **CATALYST**? _____

22) What is meant by **ACTIVATION ENERGY**? _____

_____

23) **TRUE** or **FALSE**. (circle) When the activation energy is lowered in a chemical reaction, the products can combine more easily.

Click on *Acids and Bases I*. (In the upper right hand margin.) Read the information on this page and answer the following questions.

24) a. What does the pH scale show?_____

b. The **2 ions** that pH focuses concentration on are:_____and_____.

25) a. What pH does distilled water have?_____

b. Where are acids found on the pH scale?_____

c. Where are bases found on the pH scale?_____

At the VERY bottom of the page, click on *Biochemistry*. Then click on *Enzymes*. (In the right margin.)

26) What is an **ENZYME**?_____

27) What is a **SUBSTRATE**?_____

28) Draw and label a picture showing how an enzyme works.

29) What are the **4 steps for enzyme action**?

i. _____

ii. _____

iii. _____

iv. _____

Click on *Enzyme Regulators*. (upper right hand margin)

30. What are **4 factors** that can control or regulate enzyme activity?

- _____
- _____
- _____
- _____