Name _____ Date _____ Period _____

CHEMISTARY OF LIFE – ASSIGNMENT 1

1. Define the following terms:
   a. Atom
   b. Covalent bond
   c. Electron
   d. Element
   e. Ion
   f. Ionic bond
   g. Isotope
   h. Matter
   i. Molecule
   j. Neutron
   k. Proton

2. The smallest functional unit of an element is a(n) _____.

3. List three examples of elements:
   a. b. c.

4. Diagram their (elements from #) atomic structure. Labe the number of protons(P) and neutron(N) in the nucleus and electron (E) in the shell(s). Indicate their electrical charge:

a.	b.	c.

5. Refer to the Periodic Table of the Elements in Appendix C (back of book) and diagram the boxes of your three elements. Label the atomic number, atomic weight and chemical symbol:

a.	b.	c.

6. When is an atom electrically neutral? _____

7. Stable, unreactive atoms usually have _____ electrons in their outermost shell.

8. Explain the difference between the atomic number and the atomic weight of an atom:
   _____
   _____

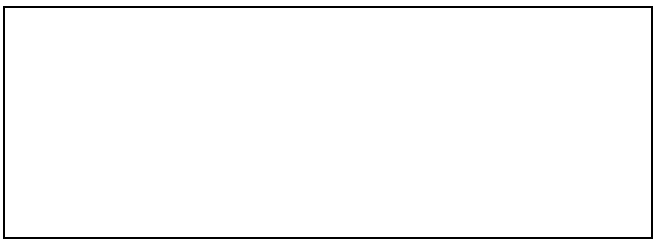
9. List the three isotopes of carbon:
   a. b. c.

10. Why is carbon 14 so useful to scientists? _____
    _____

11. Regular table salt is sodium chloride, NaCl. Sodium has 11 neutrons. How many electrons will it have when it is electorally neutral? _____

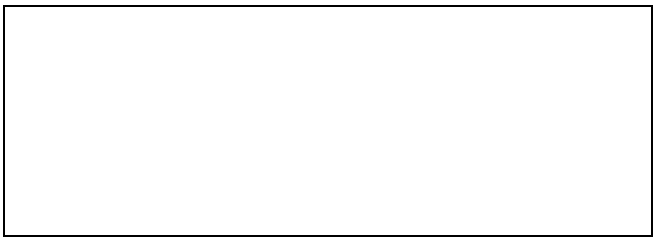
12. How many electrons will it have in its outermost shell? _____

13. Diagram a sodium atom below:



14. Chlorine has 17 protons.
How many electrons will chlorine have when it is electrically neutral? _____ How many electrons will it have in its outermost shell? _____

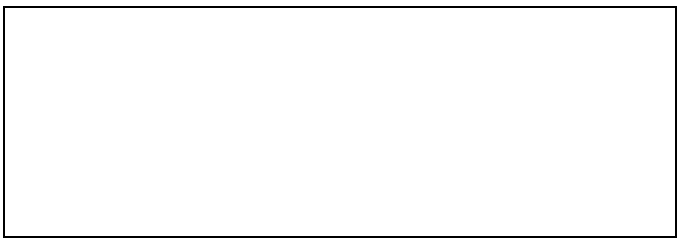
15. Diagram a chlorine atom below:



16. What kind of bond would you expect to form between sodium and chlorine? _____ Why?
_____

17. What two atoms make up a water molecule? _____ and _____ What kind of bond do they have? _____

18. Diagram a water molecule below. Label that number of protons, neutrons and shared electrons:



19. Write the structural (a) and molecular (b) formula for water:
a. _____ b. _____

20. In a triple bond, _____ pairs of electrons are shared.

21. There are only _____ naturally occurring elements. Amazingly _____% of the human body is made up of just three elements: _____,
_____ and _____.