Name: Key

Periodic Table/Chemical Bonding Review

1. How many Protons?

Lead 82

Iodine 53

Uranium 92

2. How many Neutrons?

Mercury 121

Magnesium 12

Bromine 45

3. How many Electrons?

Gold 79

Zinc 30

Xenon 54

4. How many Shells?

Radon 6

Chromium 4

Silver 5

5. How many Valence Electons?

Barium 2

Tin 4

Bromine 7

6. Vertical Columns are called Families or groups.

Elements in the same vertical column have the same number of

Valence electrons.

7. Horizontal rows are called periods. Elements in the same horizontal row have the same number of energy levels / shells / orbitals.

8. What are the elements to the right of the zigzag line called?

nonmetals

9. What are the elements to the left of the zigzag line called?

metals

10. There are more metals than nonmetals on the periodic table.

11. The name of Family 1 is alkali metals

12. The name of Family 2 is alkaline earth metals

13. The name of Family 17 is Halogens

14. The name of Family 18 is Noble gases

~~15.~~ What 'memory device' can you use to remember the metalloids?

16. List the metalloids:

Boron, Silicon, Germanium, Arsenic, Antimony, Tellurium

Counting Atoms – List the number of atoms of each element on the blank.

17. $AlBr_3$ Al = 1 Br = 3 4 Total

18. 3 $CaCl_2$ Ca = 3 Cl = 6 9 Total

~~19~~ 4 $Be(OH)_2$

Balanced or Unbalanced?

20. $Na + O_2 \rightarrow Na_2O$ Unbalanced

Na=1 O=2 Na=2 O=1

21. $Br_2 + Ca \rightarrow CaBr_2$ balanced

Br=2 Ca=1 Ca=1 Br=2

22. $C_6H_{12}O_6 + O_2 \rightarrow CO_2 + H_2O$ Unbalanced

C=6 H=12 O=8 C=1 O=3 H=2

Chemical Equations:

C=6 O=12 H=12 O=6 C=6 H=12 O=6 O=12

$$6\ CO_2 + 6\ H_2O \rightarrow C_6H_{12}O_6 + 6\ O_2$$

23. What are the reactants in this chemical reaction?

$6CO_2 + 6H_2O$

24. What are the products in this chemical reaction?

$C_6H_{12}O_6 + 6O_2$

25. What do you call the small numbers written behind the symbols? Subscripts

26. What do the small numbers tell you? The number of atoms of an element

27. What do you call the large numbers in front of the formulas? Coefficient

28. What do these large numbers tell you? The number of molecules

29. Is this chemical equation balanced or not? Yes

30. What does the arrow mean? Creates, yields, chemical reaction

Electron Configuration - Write the electron configuration for the following elements:

31. Phosphorus 2-8-5
32. Calcium 2-8-8-2
33. Chlorine 2-8-7
34. Carbon 2-4
35. Sodium 2-8-1
36. Sulfur 2-8-6

Metals vs. Non-metals

37. Elements that LOSE electrons forming positive ions are : metals
38. Elements that GAIN electrons forming negative ions are: non metals
39. Elements that are different colors, dull, brittle and good insulators are: nonmetals
40. Elements that are usually solid, silver, shiny and good conductors are: Metals
41. Elements that are malleable and ductile are: metals

Chemical Bonding: Choose the correct name for the description of the bonds below

Ionic Bond Covalent Bond Metallic Bond

42. 2 atoms SHARE 2 electrons: Covalent Bond
43. Many metal atoms share many electrons: Metallic Bond
44. A metal gives electrons to a non-metal: Ionic Bond

45. Mendeleev's original periodic table was arranged by: atomic mass

46. The modern periodic table is arranged by: atomic number