CHEMISTRY PERIODIC TABLE WORKSHEET II

Periodic Table Questions ***[Place your answer in the blank to the left of the question number.]***

A. True or False [T or F](1-21)

a) True
b) False

___1. Properties of the elements are periodic functions of their atomic numbers.

___2. There are more nonmetallic elements than metallic elements.

___3. Metallic properties of the elements increase from left to right across a period.

___4. Metallic properties of the elements increase from top to bottom in a family of elements.

___5. Calcium is a member of the alkaline earth family.

___6. Iron belongs to the alkali metal family.

___7. Bromine belongs to the halogen family.

___8. Neon is a noble gas.

___9. Group A elements do not contain partially filled "d" or "f" orbitals.

___10. An atom of oxygen has a larger volume than an atom of lithium.

___11. An atom of sulfur is larger than an atom of oxygen.

___12. An atom of aluminum (Group 13) has five (5) electrons in its outer shell.

___13. Uranium is a transition element.

___14. The element with the ECN $1s^2 2s^2 2p^5$ belongs to Group 15.

___15. The element with the ECN $1s^2 2s^2 2p^6 3s^2 3p^1$ belongs to Group 13.

___16. A chemical family consists of one of the horizontal rows on the periodic table.

___17. Elements within a family will have similar electron structures and will show some similarities in their chemical properties.

___18. Group A elements are known as the representative elements.

___19. Going from left to right in any period, the representative elements show an increasing number of s and p electrons.

___20. The potassium ion is smaller than the potassium atom.

___21. The bromide ion is smaller than the bromine atom.

B. Classify each of the following elements as :

a) Metals
b) Nonmetals
c) Metalloids

___22. Potassium

___23. Plutonium

___24. Sulfur

___25. Antimony

___26. Iodine

___27. Tungsten

___28. Molybdenum

___29. Germanium

___30. Vanadium

___31. Cesium

___32. Krypton

C. Which one of the following pairs of elements is the most metallic?

___33. a) phosphorus b) arsenic

___34. a) cesium b) sodium

___35. a) silicon b) aluminum

___36. a) lead b) germanium

D. Which one of the following pairs of elements has the greatest atomic radius?

___37. a) fluorine b) chlorine

___38. a) sulfur b) oxygen

___39. a) barium b) magnesium

___40. a) copper c) silver

___41. Of the following, which is most similar to calcium?

a) K b) Sc c) Mg d) Na

___42. In period 3, as the atomic number increases from Group 1 to Group 17, the atomic radius

a) increases only b) decreases only
c) decreases then increases d) remains the same

___43. In the Actinide Series, successive electrons generally enter the orbitals of the sublevel

a) 7s b) 6p c) 5f d) 4p

___44. Generally, metallic ions are formed by the loss of electrons.

a) True b) False

___45. Generally , metallic ions are larger than the metallic atoms from which the come.

a) True b) False

___46. If three electrons were removed from a sodium atom (atomic number 11) the new particle could be represented as

a) Na^{+} b) Na^{++} c) Na^{+++} d) Na

___47. What would be the best prediction for the oxidation number of bromine?

a) +7 b) -2 c) +1 d) -1

___48. What metal is a liquid at room temperature?

a) Br b) Tc c) Hg d) W

___49. Although helium has only two electrons in its outer level, it is very stable and is included in the octet rul

a) True b) False

___50. An element whose discovery was probably not predicted by Mendeleev because of its inactivity is

a) Sc b) Ge c) Ga d) Ne

Matching & Multiple Choice: Use the following vocabulary to fill in the blanks for questions 51-64.

a) actinide series	**b) metal**	**c) period**
d) atomic radii	**e) metalloid**	**a) periodic law**
b) group	**c) nobel gas**	**d) periodic table**
e) lathanide series	**a) nonmetal**	**b) principal quantum no.**
c) law of octaves	**d) octet rule**	

___51. As one looks across the periodic table, the___?__decreases as you move from left to right in each perioc

___52. A(n)--?--has the most stable atoms.

___53. A(n)--?--usually has three or less electrons in its outer energy level.

___54. The element in a(n)--?--are all in the same vertical column.

___55. In the--?--electrons are being added to the 4f sublevel.

___56. A(n)--?--is an element with both metallic and nonmetallic properties.

___57. The elements in a(n)--?--are all in the same horizontal line.

___58. As one looks from top to bottom on the periodic table, each new period represents a new, higher--?-

___59. A(n)--?--usually has five or more electrons in its outer energy level.

___60. The--?--states that there is a repetition of similar properties every eight elements when they are arranged according to atomic mass.

___61. The--?--is formed when elements with similar electron configurations are placed in columns in order of their increasing principal quantum number.

___62. The--?--states that an atom with eight electrons in its outer level is particularly stable.

___63. The--?--is the fact that the properties of elements are a periodic function of their atomic numbers.

___64. In the--?--electrons are being added to the 5f sublevel.

___65. A vertical column of elements in the Periodic Table is known as a

a) octave b) period c) group d) triad

___66. The elements of the Noble Gas family, except helium, have an outer shell of

a) 1 electron b) 2 electrons c) 8 electrons d) 18 electrons

___67. Metallic ions are generally larger than the atoms from which they are formed.

a) True b) False

___68. Nonmetallic ions are generally larger than the atoms from which they are formed.

a) True b) False

___69. An element whose discovery was probably not predicted by Mendeleev because of its inactivity is

a) scandium b) germanium c) gallium d) helium

___70. The elements which border the zigzag line running diagonally down and to the right end of the table are

a) noble gases b) metals c) nonmetals d) metalloids

___71. Scientist that discovered groups of three related atoms that he called triads.

a) Mosely b) Dobrinick c) Dobereiner d) Mendeleev

___72. Scientist that stated the properties of the elements are periodic functions of their atomic numbers instead of their masses.

a) Mendeleev b) Usher c) Newlands d) Moseley

___73. This scientist first proposed the law of octaves.

a) Dobereiner b) Mendeleev c) Meyer d) Newlands

___74. An element with seven electrons in its outer shell would probably have an oxidation number of

a) +1 b) +7 c) -1 d) -7

___75. An atom having a(n)--?--filled sublevel is likely to be relatively stable

a) 1/4 b) 1/3 c) 1/2 d) 3/4

___76. Group--?--of the Periodic Table contains the most active metals.

a) 1 b) 3 c) 17 d) 16

___77. The chloride ion is--?--the chlorine atom.

a) smaller than b) the same size as c) larger than

___78. The most active metal on the Periodic Table is located in the

a) upper left b) upper right c) lower left d) lower right

___79. The most active nonmetal on the Periodic Table is located in the

a) upper left b) upper right c) lower left d) lower right

___80. The elements located between Group 2 and 13 are called

a) triads b) actinides c) lathanides d) transition