Chemistry Review - Multiple Choice

1. Name the compound $CuCl_2$

2. In an experiment the color of a solution in a test tube became darker as the temperature was increased. What is the dependent variable?

3. What type of bond is present in $MgCl_2$?

4. What is the mass of 75 mL of gold? (Gold has a density of 19.2 g/mL)

5. In an electron dot formula, how many electron dots would carbon have around it?

6. Covalent Bonds are those that involve sharing of electrons. If the electrons are not shared equally, what type of covalent bond is it?

7. If an elemental symbol has 6 dots around it in its electron dot structure, what element could it be?

8. Brass is a homogeneous mixture of what two metallic elements?

9. Water molecules are polar molecules. What aspect of their structure makes them polar?

10. How many atoms in total are in the formula unit of ammonium carbonate, $(NH_4)_2CO_3$?

11. What is the formula for calcium hydroxide?

12. What is the oxidation number for the iodide ion?

13. If lithium and oxygen where to react, what is the most likely formula that would result? Why?

14. What electron dot structure of carbon shows 4 dots around the elemental symbol? What do the dots represent?

15. How many pairs of electrons participate in a single covalent bond?

16. How many hydrogen atoms are bonded to the carbon atoms of heptane?

17. Calculate the volume of a liquid that has a mass of 57 g and a density of 4.3 g/mL.

18. What are the names of a single, double, and triple bonded hydrocarbons?

19. What is the formula for determining the number of hydrogen atoms in an alkyne?

20. What are the charges and mass of the three subatomic particles?

21. Which subatomic particle identifies which element an atom is?

22. What are the characteristics of a metal?

23 What are the characteristics of a nonmetal?

24. What is the common names of family 1A, 2A, 7A, and 8A?

25. How many centimeters are in a meter?

26. What hydrocarbon has the formula $C_n H_{(2n+2)}$?

27. Which subatomic particle is responsible atomic bonding?

28. What type of substance (metal or nonmetal) is dull and brittle?

29. What type of element (metal or nonmetal) forms positive ions?

30. Convert: 45 mm to m
3700 g to kg
150 cm to mL

31. How many valence electrons are found in N, Pb, K, and B?

32. Give the formulas for octane, methane, and decane.

33. Does water dissolve polar or non-polar substances?

34. Determine the charge of the cation for: PbO, Fe_2O_3, NH_4Cl

35. Explain the octet rule and its relationship to stability.

36. Balance the following equation:

$H_2 + LiCl \rightarrow Li + HCl$

37. Balance the following equation:

$C_5H_8 + Al(OH)_3 \rightarrow KOH + Al_2O_3$

38. How can you determine if a single displacement reaction will occur?

39. Explain the difference between a synthesis and displacement reaction?

40. How can you determine if a change is chemical or physical?

41. How many oxygen atoms are present in 6 $Fe_2(SO_3)_3$

42. Where are the gases found on the periodic table?

43. Where are the chemically unreactive elements found on the periodic table?

44. Where are the metalloids on the periodic table?

45. Which element has the smallest atomic radius, Calcium or Barium?

46. Is Calcium – 42 an isotope?

47. How many half lives does it take for an isotope to lose $1/4^{th}$ of its radioactivity?

48. Which type of nuclear decay is the most dangerous, alpha, beta, or gamma?

49. How many neutrons are present in Sulfur – 36 ?

50. What is the difference between a cation and an anion?

51. How is atomic mass determined?

52. What is an isotope?

52. Determine the number of protons, neutrons, and electrons present in O-18.

53. What is the noble gas electron configuration for barium?

54. What did Rutherford determine from the Golf Foil Experiment?

55. How many valence electrons are in the 2^{nd} energy level?

56. How many total electrons are present in the 3^{rd} energy level?

57. What is the difference between a physical and chemical change?

58. What is the difference between a homogeneous and heterogeneous mixture?

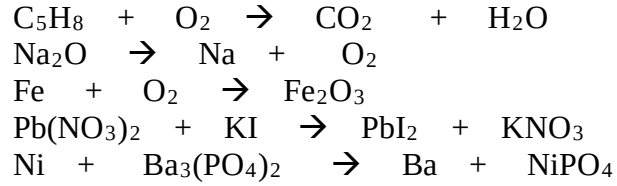
59. Which of the following is a homogeneous mixture, Kool-aid or muddy water?

60. Define: element, compound, mixture, pure substance, mass, volume, and solution.

61. Define the terms malleable, ductile, crystalline, brittle, alloy, and polymer.

62. What is the volume of a substance with a density of 7.51 g/mL and a mass of 5.1 g?

63. What types of reactions are these?



64. What is the formula for magnesium hydroxide?

65. What type of bond does sulfur dioxide form?

66. The starting substance(s) of a chemical reaction is(are) called _____.

67. Why must chemical equations be balanced?

68. How can you tell if a chemical reaction has taken place?

69. What type of bond is found in a diatomic molecule?

70. How are the elements arranged on the modern periodic table?

71. Which group of elements (metals, nonmetals, or metalloids) are normally solids?

72. What is the mass in amu's of one proton, one neutron and one electron.

73. What is the identity of an atom with 6 protons and 8 neutrons?

74. What is the average atomic mass of an element with two isotopes. One isotope has a mass of 39.78 and composes 37.5% of the sample, and the other isotope has a mass 41.34 and composes 62.5% of the sample.

75. What is the electron configuration of potassium?

76. How many electrons, protons, and neutrons are contained in Sulfur – 36?

Balance the following equations:

$Al + O_2 \rightarrow Al_2O_3$ $\quad 4\ 3 \rightarrow 2$

$C_3H_8 + O_2 \rightarrow CO_2 + H_2O$ $\quad 1\ 5 \rightarrow 3\ 4$

$KNO_3 \rightarrow KNO_2 + O_2$ $\quad 2 \rightarrow 2\ 1$

$O_2 + CS_2 \rightarrow CO_2 + SO_2$ $\quad 3\ 1 \rightarrow 1\ 2$

$Al + S_8 \rightarrow Al_2S_3$ $\quad 16\ 3 \rightarrow 8$

$Al(OH)_3 + H_2CO_3 \rightarrow Al_2(CO_3)_3 + H_2O$ $\quad 2\ 3 \rightarrow 1\ 6$

$Al(NO_3)_3 + NaOH \rightarrow Al(OH)_3 + NaNO_3$ $\quad 1\ 3 \rightarrow 1\ 3$