Name:_____

Chemistry Test Section 4 Chapter 3, Chapter 4, Chapter 5

1. Place the correct letter in the blank of the corresponding answer

____The mass in grams of one mole of substance
____A vertical column on the periodic table
____A horizontal row on the periodic table
____the most reactive group of elements
____the most stable group of elements
____inner electrons shield the outermost electrons from the full attractive force of the nucleus
____the length that is half the distance between the nuclei of two bonded atoms
____the elements that are the s and p blocks of the periodic table.
____the elements known as the d block elements.
____The chemical bonding theory that is based on the assumption that an atom will tend to want 8 electrons in its outermost S and P orbitals
____an atom or molecule that has gained or lost one or more electron and has a negative or positive charge
____an ion that has a positive charge
____an ion that has a negative charge
____electrons in the outermost level of an atom
____states that when the elements are arranged according to their atomic numbers elements with similar properties appear at regular intervals.

A. Anion
B. Bond Radius
C. Cation
D. Electron Shielding
E. Group
F. Halogens
G. Ion
H. Main Group Elements
I. Molar Mass
J. Noble Gases
K. Octet Rule
L. Period
M. Periodic Law
N. Transition Metals
O. Valence Electrons

Name:_____

2. The Mole is an SI unit used in chemistry to for the exclusive purpose of measuring atoms or molecules in large numbers.
    a. True
    b. False

3. What is Avagadro's number?

4. _____was credited for creating the Periodic Table.

5. The trend on the periodic table where the physical and chemical properties repeat every eight elements is called
    a. The law of Octets
    b. The Law of Octaves
    c. The Law of Periods
    d. The Law of Properties

6. The Alkali and Alkaline Earth metals are not considered to be very reactive groups of elements.
    a. True
    b. False

7. Ionization energy decreases as is goes down the periods and across the groups.
    a. True
    b. False

2. Complete the following problems show all your work
    a. How many moles are present in 620 grams of Lithium? How many atoms?

Name:_____

b. How many moles are present in 11 grams of silicon? How many atoms?

3. Complete the Following problems show all your work
    a. How many moles are represented by each of the following
        i. 11.5 g Na

        ii. 5.87 g of Ni

Name:_____

b. What is the mass in grams of each of the following?
    i. 0.50 mol of C

    ii. 1.80 mol of Ca

4. For the Following compounds give the Ionic Formula

    a. Aluminum Sulfide

    b. Beryllium Chloride

    c. Magnesium Nitrate

    d. Lead(II) Sulfite

Name:_____

5. Give the name for the following ionic compounds

    a. KCl

    b. Mg_3P_2

    c. PbO

    d. $Be(CH_3COO)_2$

Name:_____

Stable Ions Formed by the Transition Elements and Some Other Metals

Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11	Group 12	Group 13	Group 14
Ti^{2+} Ti^{3+}	V^{2+} V^{3+}	Cr^{2+} Cr^{3+}	Mn^{2+} Mn^{3+}	Fe^{2+} Fe^{3+}	Co^{2+} Co^{3+}	Ni^{2+}	Cu^{+} Cu^{2+}	Zn^{2+}	Ga^{2+} Ga^{3+}	Ge^{2+}
		Mo^{3+}	Tc^{2+}			Pd^{2+}	Ag^{+} Ag^{2+}	Cd^{2+}	In^{+} In^{2+} In^{3+}	Sn^{2+}
Hf^{4+}			Re^{4+} Re^{5+}			Pt^{2+} Pt^{4+}	Au^{+} Au^{3+}	Hg_2^{2+} Hg^{2+}	Tl^{+} Tl^{3+}	Pb^{2+}

The small table at left shows the periodic table positions of the ions listed above.

Table 2
Some Polyatomic Ions

Ion name	Formula
Acetate	CH_3COO^-
Ammonium	NH_4^+
Carbonate	CO_3^{2-}
Chromate	CrO_4^{2-}
Cyanide	CN^-
Dichromate	$Cr_2O_7^{2-}$
Hydroxide	OH^-
Nitrate	NO_3^-
Nitrite	NO_2^-
Permanganate	MnO_4^-
Peroxide	O_2^{2-}
Phosphate	PO_4^{3-}
Sulfate	SO_4^{2-}
Sulfite	SO_3^{2-}
Thiosulfate	$S_2O_3^{2-}$