**Oxford High School**

**Chemistry**

**Chapter 1-9 Cumulative Review**

1. Write balanced equations for the following reactions.
2. Lead (II) nitrate when heated, forms lead (II) oxide, nitrogen dioxide, and oxygen gas.
3. The combustion of isopropyl alcohol (C3H7OH) produces carbon dioxide and water vapor.
4. When a mixture of aluminum and iron (II) oxide is heated, metallic iron and aluminum oxide are produced.
5. Identify the type of equation for each example in #1.

A.

B.

C.

1. Write the balanced, total ionic, and net ionic equation for the following reaction

AlCl3(aq) + AgNO3(aq) → AgCl(s) + Al(NO3)3(aq)

1. Write the formulas for the following compounds
2. Aluminum carbonate
3. Potassium sulfide
4. Phosphorous trioxide
5. Nitric acid
6. Manganese (II) sulfate
7. Sodium bromide
8. Explain the two concepts that are the basis for the arrangement of the elements on the period table.
9. Complete the following table, indicating which element has a *larger value* for the given property

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Element | Electron Affinity | Ionization Energy | Chemical Reactivity | Electronegativity | Atomic Radius |
| Na and Rb |  |  |  |  |  |
| Ca and Ba |  |  |  |  |  |
| Mg and Cl |  |  | skip |  |  |
| Al and Se |  |  | skip |  |  |

1. Place the correct letter next to the statement that best describes an ionic (I) or covalent (C) or both (B)

\_\_\_\_\_ involves only nonmetals

\_\_\_\_\_ involves metals and nonmetals

\_\_\_\_\_ results in the formation of a complete octet

\_\_\_\_\_ forms molecules

\_\_\_\_\_ can either be solid, liquid, or gas

\_\_\_\_\_ forms crystals

\_\_\_\_\_ can have equal or unequal sharing of the electron

\_\_\_\_\_ involve the transfer or sharing of electrons

\_\_\_\_\_ held together by electrostatic forces

\_\_\_\_\_ forms anions and cations

\_\_\_\_\_ the resulting compounds are names by using prefixes to indicate the number of atoms in the compound

\_\_\_\_\_ held together by a sharing an electron

\_\_\_\_\_ AlBr3

\_\_\_\_\_ N2O4

1. Using page 240 in the book, identify the following bonds as nonpolar, polar, or ionic bonds
2. The H-O bond in water
3. The Cl-Cl bond in Cl2
4. The Na-F bond in NaF
5. A. Draw the molecular shape and bond angle for CO2 and H2S.

B. Determine the polarity of each molecule and explain your answer.