

## 2<sup>nd</sup> Quarter Chem Exam – Extra Credit Study Guide

### **Periodic Table:**

- 1) On the periodic table, what do the columns have in common?
- 2) Draw a periodic table labeling: alkaline earth metals, noble gases, alkali metals, halogens, transition metals, inner transition metals.
- 3) Draw a periodic table labeling metals, nonmetals and metalloids and labeling dots and charges for the groups.
- 4) On the periodic table, which element has the highest atomic radius?
- 5) Based off your answer to #4, between Barium and Chlorine, which has a larger atomic radius?
- 6) On the table, which element has the highest ionization energy?
- 7) Based off your answer to #6, between Radium and Oxygen, which has a smaller ionization energy?
- 8) On the table, which element has the highest electronegativity?
- 9) Based off your answer to #8, between Strontium and Aluminum, which has a larger electronegativity?
- 10) What element is in the third period and part of the alkaline earth metals?
- 11) What is the ending electron configurations of:
  - a) Copper
  - b) Barium
  - c) Selenium
  - d) Tungsten
- 12) What element is in group 4A period 3?
- 13) Elements with a large electronegativity produce what type of ions? Justify your answer.

### **Metallic & Ionic Bonding:**

- 14) Why do elements want to bond?
- 15) What type of elements bond in metallic bonding?
- 16) What type of elements bond in ionic bonding?
- 17) How are positive ions created? What's the name of positive ions?
- 18) How are negative ions created? What's the name of negative ions?
- 19) What is a polyatomic ion? List 7 polyatomic ions and their formulas.
- 20) Why do ionic compounds have high melting points?
- 21) Why do metallic substances conduct electricity in solid form but ionic compounds do not?
- 22) Why are ionic compounds considered brittle?
- 23) Why do some metals require roman numerals when naming compounds?
- 24) Name the following:
  - a)  $\text{PbO}_2$
  - b)  $\text{SnF}_4$
  - c)  $\text{MgCO}_3$
  - d)  $\text{Al}_2\text{O}_3$
  - e)  $\text{CaSO}_4$
  - f)  $\text{Cr}_2\text{S}_3$
- 25) Determine the charges of the cation and anion, then drop and swap to determine the formula for the following:
  - a) aluminum sulfide
  - b) ammonium nitrate
  - c) potassium acetate
  - d) Iron (II) phosphide
  - e) copper (I) oxide
  - f) chromium (II) hydroxide