

# Chemistry Exam Review Part II

## Compounds and Formulas

5 Key

1. Think about this first when looking at a compound: *Is there a metal or a polyatomic ion?*

If YES = ionic

If NO = covalent

2. Write binary compounds of two nonmetals(COVALENT/MOLECULAR): use Greek prefixes (di-, tri-, tetra-, ...)

3. Write the prefixes for

1 mono

2 di

3 tri

4 tetra

5 penta

6 hexa

7 hepta

8 octa

9 nona

10 deca

4. Name the following covalent compounds:

\* use a prefix for the first element ONLY if there is more than one

\* always use a prefix for the second element

\* name ends in -ide

a)  $\text{SiF}_4$  silicon tetrafluoride (only one Si)

b)  $\text{P}_4\text{S}_5$  tetraphosphorus pentasulfide

c)  $\text{CO}$  carbon monoxide (only one C)

5. Write the formulas for the following covalent compounds:

a) diboron hexahydride  $\text{B}_2\text{H}_6$

b) nitrogen tribromide  $\text{NBr}_3$

c) diphosphorus pentoxide  $\text{P}_2\text{O}_5$

6. Write the formulas for the following ionic compounds without transition metals:

lithium sulfite

$\text{Li}_2\text{SO}_3$

beryllium chloride

$\text{BeCl}_2$

sodium phosphide

$\text{Na}_3\text{P}$

7. Name the following ionic compounds with transition metals:

$\text{Co}_3\text{N}_2$  cobalt (II) nitride

$\text{FeCl}_3$  iron (III) chloride

$\text{PbO}$  lead (II) oxide

8. Write the formulas for the following ionic compounds with transition metals:

vanadium (V) phosphate

$\text{V}_3(\text{PO}_4)_5$

lead (II) sulfite

$\text{PbSO}_3$

copper (I) carbonate

$\text{Cu}_2\text{CO}_3$

4. Write the symbol used in chemical equations to represent the following:

- a) aqueous solution (aq)
- b) heated  $\Delta$
- c) reversible reaction  $\rightleftharpoons$
- d) a solid s
- e) a gas g
- f) a liquid l

5. CaO is an ingredient of cement mixes. When water is added it heats up and calcium hydroxide forms.

- a) Is there any evidence a chemical reaction has taken place? heat (energy release)
- b) List 4 indicators of a chemical change.

- ① energy (heat or light)
- ② ~~light~~ precipitate
- ③ color
- ④ gas production

6. A student heats a substance in a test tube. A glowing splint is placed over the opening to the test tube and it reignites. What is one possible product created by the heating of this substance?



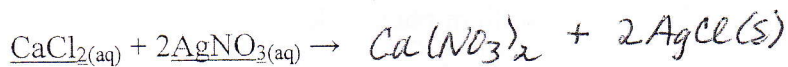
7. During a demonstration a teacher extinguishes a burning splint by placing it near a beaker containing baking soda and vinegar. What did this reaction produce that extinguished the flame?



8. When a glowing splint is placed near a beaker of HCl and Zn, an audible "pop" sound is heard. Which product caused this sound to be made?



9. Write and balance the net ionic equation



11. What is the net ionic equation for a neutralization reaction?

