

# Writing and Balancing Chemical Equations

CHEMISTRY 110

Name \_\_\_\_\_  
last first

Write and balance the following chemical equations.....

A. using correct chemical formulas

and

B. correct physical states for reactants and products { (g),(l),(s), and (aq) }

- 1) Gaseous  $C_4H_8$  + oxygen gas  $\rightarrow$  carbon dioxide + water
- 2) Gaseous chlorine + solid cobalt (III) iodide  $\rightarrow$  iodine + cobalt (III) chloride
- 3) Solid diphosphorus pentoxide + water(l)  $\rightarrow$  phosphoric acid
- 4) Sulfurous acid + aqueous potassium hydroxide  $\rightarrow$  water + potassium sulfite
- 5) Aqueous potassium phosphate + aqueous ferrous chloride  $\rightarrow$  potassium chloride +  
ferrous phosphate
- 6) Liquid  $C_6H_6$  + oxygen  $\rightarrow$  carbon dioxide + water
- 7) Magnesium metal + nitrogen  $\rightarrow$  magnesium nitride
- 8) Aqueous sodium sulfate + aqueous lead (II) nitrate  $\rightarrow$  sodium nitrate +  
lead (II) sulfate
- 9) Solid potassium bromide + chlorine gas  $\rightarrow$  bromine + potassium chloride

- 10) Solid mercury (II) oxide  $\rightarrow$  mercury metal + oxygen
- 11) Phosphoric acid + aqueous barium hydroxide  $\rightarrow$  water + barium phosphate
- 12) Solid sodium oxide + water(l)  $\rightarrow$  sodium hydroxide
- 13) Solid aluminum chloride  $\rightarrow$  aluminum + chlorine
- 14) Zinc metal and aqueous cupric sulfate reacts to form copper plus zinc sulfate
- 15) Manganese metal reacts with oxygen gas to form manganese (II) oxide
- 16) Gaseous dihydrogen sulfide is bubbled through aqueous copper (II) nitrate to produce copper (II) sulfide and nitric acid
- 17) Solid Iron (III) hydroxide is heated to produce gaseous water and iron (III) oxide
- 18) Gaseous methane ,CH<sub>4</sub>, is ignited in oxygen to produce carbon dioxide and water
- 19) Sulfurous acid breaks down into water and sulfur dioxide gas
- 20) Calcium metal + water (l)  $\rightarrow$  calcium hydroxide + hydrogen