Chemistry
Study Guide Ch 8

Yields = arrow facing right

reactants are on the left and products are on the right in a chemical equation
skeleton equation

catalyst

Table 8.1

p 206. 1 and 2

balancing chemical equations

a) you may not change the formula of a substance to balance an equation
b) you can only change coefficients to balance an equation
c) atoms must be conserved (same type and number of atoms on both sides of the equation)

atoms are conserved = mass and matter are conserved = law of conservation of mass

pp. 209-211 problems 3-12

types of chemical reactions

a) combination (synthesis)
b) decomposition
c) single-replacement (single displacement)
d) double-replacement (double displacement)
e) combustion

Single replacement reaction, activity series, Table 8.2

double replacement reactions are driven by

1) formation of a solid called a precipitate
2) production of a gas that leaves the reaction|
3) formation of water

complete combustion of a **hydrocarbon** produces only $\mathbf{CO_2}$ and $\mathbf{H_2O}$

pp. 214-224 problems 13-22, 24

molecular equation ionic reactants and products are written as if they are molecular
ionic equation soluble ionic substances are written in ion form
net ionic equation spectator ions are removed

molecular equation: $AgNO_3\ (aq) + NaCl\ (aq) \dashrightarrow AgCl(s) + NaNO_3\ (aq)$

ionic equation:

$Ag^+(aq) + No_3^-(aq) + Na^+(aq) + Cl^-(aq) \dashrightarrow AgCl(s) +\_ Na^+(aq) + NO_3^-(aq)$

net ionic equation: $Ag^+(aq) + Cl^-(aq) \dashrightarrow AgCl(s)$

soluble, insoluble (low solubility), precipitate (ppt)

pp. 226-228 problems 25-31

pp. 232-234 problems 36, 38, 42, 46, 47b-e, 49, 54, 59, 63a,c 64
(cum rev 66 and 67)