

## Chemistry 20 final review Tro 3rd edition

### General information:

- Final is all multiple-choice

- Bring:

calculator

pencil

3 x 5 card of notes (2 sides)

-Given:

A periodic table

Conversion factors

Any tables you might need (density, electronegativities, etc.)

The diagonal rule (used for electron configuration)

Polyatomic ion formulas

### Chapter 1 - no material on final

#### Chapter 2 Sections 2-10

a. scientific notation

b. significant figures

c. converting between units

d. Density

*Suggested problems # 31, 47, 55, 57, 59, 69, 71, 89, 99*

#### Chapter 3 Sections 4, 5, 6

a. classifying matter

b. elements, compounds, homogeneous and heterogeneous mixtures

c. physical and chemical changes

*Suggested problems 33, 39*

#### Chapter 4 Sections 4-8

a. Parts of the atom- protons, neutrons, electrons

b. Determining protons, neutrons and electrons from the periodic table or from atomic notation ( $^{25}_{12}\text{Mg}$  etc)

c. Isotopes

d. The parts of the periodic table - metals, halogens, noble gases etc.

e. Ions

*Suggested problems 35, 37, 45, 53, 61, 63, 75, 77*

#### Chapter 5 Sections 3-10

a. Naming compounds

b. Naming ionic compounds

c. Naming acids

d. Naming molecular (covalent) compounds

*Suggested problems 41, 51, 55, 57, 59, 61, 65, 67, 73, 75*

## Chapter 6 Sections 3, 4

The mole

P.T.                      Avogadro's #  
Grams -----→ moles -----→ molecules/atoms/formula units

*Suggested problems # 19, 25, 49, 51*

## Chapter 7 Sections 3-7

- Chemical reactions
- Balancing reactions
- Double displacement reactions
- Soluble compounds

*Suggested problems 39, 53, 67, 69, 75*

## Chapter 8 Stoichiometry

PT                      coeff of rx                      PT  
Grams<sub>A</sub> ----→ moles<sub>A</sub> --→ moles<sub>B</sub> --→ grams<sub>B</sub>

*Suggested problems 23, 31, 35, 41*

## Chapter 9 Sections 4, 6, 7

- Bohr model of the atom
- Electron configurations
- Valence electrons

*Suggested problems 55, 57, 63*

## Chapter 10 Sections 2, 4, 5, 7, 8

- Chemical bonding
- Ionic versus covalent bonding
- Lewis structures of covalent compounds
- Shapes of molecules
- Polarity
- Electronegativity

*Suggested problems 49, 55, 67 a-c, 87, 91*

## Chapter 11 Gases- not on final

## Chapter 12 Liquids and Solids- not on final

## Chapter 13 Sections 2, 3, 6, 7

- Solutions
- Molarity = moles/liters *or*  $M \times L = \text{moles}$
- Mass percent
- Saturated, unsaturated supersaturated
- Solution dilution  $C_1 \times V_1 = C_2 \times V_2$

*Suggested problems 65, 73, 75, 85, 89*

**Chapter 14 Sections 2, 3, 5, 6, 8,9**

a. Acid base properties

b. The pH scale

c. Neutralization reactions

d. Calculating pH,  $[\text{H}_3\text{O}^+]$ , and  $[\text{OH}^{1-}]$

$$\text{pH} = -\log [\text{H}_3\text{O}^+]$$

$$[\text{H}_3\text{O}^+][\text{OH}^{1-}] = 1 \times 10^{-14}$$

e. Titration calculations

*Suggested problems 45, 67, 69, 71, 73, 75, 77, 81*