

Chemistry 20 final review
Tro 6th 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, 49, 57, 59, 61, 71, 73, 91, 101

Chapter 3 Sections 4, 5, 6

- a. classifying matter
- b. elements, compounds, homogeneous and heterogeneous mixtures
- c. physical and chemical changes

Suggested problems 35, 41

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 33, 35, 43, 51, 59, 61, 75, 77

Chapter 5 Sections 3–10

- a. Naming compounds
- b. Naming ionic compounds
- c. Naming acids
- d. Naming molecular (covalent) compounds

Suggested problems 45, 55, 59, 61, 63, 65, 69, 71, 77, 79

Chapter 6 Sections 3, 4

The mole

P.T. Avogadro's #

Grams -----→ moles -----→ molecules/atoms/formula units

Suggested problems # 19, 25 51, 53

Chapter 7 Sections 3-7

- a. Chemical reactions
- b. Balancing reactions
- c. Double displacement reactions
- d. Soluble compounds

Suggested problems 37, 49, 63, 65, 71

Chapter 8 Stoichiometry

PT coeff of rx PT
Grams_A ----→ moles_A --→ moles_B --→ grams_B

Suggested problems 21, 29, 33, 39

Chapter 9 Sections 4, 6, 7

- a. Bohr model of the atom
- b. Electron configurations
- c. Valence electrons

Suggested problems 53, 55, 61

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

- a. Chemical bonding
- b. Ionic versus covalent bonding
- c. Lewis structures of covalent compounds
- d. Shapes of molecules
- e. Polarity
- f. Electronegativity

Suggested problems 47, 53, 65 a-c, 85, 89

Chapter 11 Gases- not on final

Chapter 12 Liquids and Solids- not on final

Chapter 13 Sections 2, 3, 6, 7

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

Suggested problems 63, 71, 73, 83, 87

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

- a. Acid base properties
- b. The pH scale
- c. Neutralization reactions
- d. Calculating pH, $[H_3O^+]$, and $[OH^{1-}]$

$$pH = -\log [H_3O^+]$$

$$[H_3O^+][OH^{1-}] = 1 \times 10^{-14}$$

- e. Titration calculations

Suggested problems 43, 65, 67, 69, 71, 73, 75, 79