

Review sheet for Exam 1 Chemistry 101 Fall 2010

Introduced in Chapter 1 and continued in later chapters

1. Kinetic molecular theory and atomic theory.
2. Nanoscale, macroscale, and symbolic representations.
3. Features of atoms, elements, molecules, and compounds.
4. Phases of matter.
5. Physical and chemical transformations.
6. Measurements.

Introduced in Chapter 2 and continued in later chapters

1. Atomic structure and isotopes.
2. Significant figures and scientific notation.
3. Mole and molar mass. Avogadro's number (N_A) for # items-mole conversions. Molar mass (MM) for mass-mole-atom or molecule conversions (using N_A and MM).
4. General aspects of the periodic table.

Introduced in Chapter 3 and continued in later chapters

1. Ions, ionic compounds, and solutions of ionic compounds.
2. Percent composition (mass %).
3. Molecular compounds.
4. Chemical formulas and naming of ions, molecules, and compounds.
5. Empirical formula and molecular formula. Applying N_A , MM, and mass %, which are all ratios (#items/mole, #g/mole, #g/#g).

Introduced in Chapter 4 and continued in later chapters

1. Basic understanding of a chemical equation.
2. Balancing chemical equations.

Exam questions can be

1. Quantitative problems (e.g., finding a numerical result, using significant figures, etc.)
2. Qualitative problems (e.g., drawing pictures, estimating an answer, etc.)
3. Open-ended response (e.g., naming a compound, explaining a concept, explaining how to solve a problem, etc.)

Exam questions based on

1. Lecture material, examples and practice problems,
2. Homework (OWL, textbook, group), and
3. Recitation quizzes.