

STUDY GUIDE - EXAM 1

BRING TO CLASS ON EXAM DAY: Scan-Tron Form 883, #2 pencil and good eraser.

Material Covered on Exam:

Chemistry: assigned reading for Unit 1

Lab Manual: Experiments A, 1, 2

Exercises 1, 2, 3

1. Metric System:
 - a. Know the basic units of mass, length and volume and their abbreviations.
 - b. Know the metric prefixes and their abbreviations.
 - c. Be able to draw a Metric-Metric conversion table and use it to make conversions from one Metric unit to another.
 - d. Given the conversion factors, be able to make Metric-English conversions.
 - e. Know the relative sizes (which is larger) of selected English and Metric units.
2. Density
 - a. Given the mass and volume of a substance, calculate its density.
 - b. Given the mass and density of a substance, calculate its volume.
 - c. Given the volume and density of a substance, calculate its mass.
3. Temperature Conversions: convert temperature from °C to K and vice versa.
4. Periodic Table:
 - a. Locate a period on the periodic table.
 - b. Locate a family (group) of elements on the table. Know the common names for groups IA, IIA, VIIA, VIII, and the B groups.
 - c. Given the name of an element, be able to tell whether it is a metal or a nonmetal.
 - d. Be able to read the atomic number and atomic mass (weight) from the table.
 - e. Know which elements are diatomic.
5. Given a list of symbols, be able to give the corresponding name of the element and vice versa.
6. Given the formula of a compound, be able to:
 - a. Tell which elements and how many of each are present.
 - b. Determine the total number of atoms present.
 - c. Calculate the molecular mass (weight).
7. Given a symbol, formula, or name, be able to identify whether the substance is an element, compound, heterogeneous mixture, or homogeneous mixture.
8. Be able to distinguish between a physical property and a chemical property; a physical change and a chemical change. What might you observe in the lab that would be evidence of a chemical change?
9. Recognize statements of Laws of: Conservation of Mass, Definite Composition, and Conservation of Energy.

10. States of Matter:
- Know the basic characteristics and physical properties of solids, liquids and gases.
 - Know the major points of the kinetic-molecular theory of gases.
 - Be able to express the relationships of Boyle's Law, Charles' Law, Gay-Lussac's Law, and Avogadro's Law.
 - Be able to label the parts of a change of state diagram.

11. Vocabulary - Know the meanings of the following:

boiling
boiling point
calorie
chemical change
chemical property
compound
condensation
crystallization
density
element
evaporation
filtrate
formula
freezing
freezing point
heat
heat of fusion
heat of vaporization
heterogeneous
homogeneous
kinetic energy
matter
melting
melting point
meniscus
mixture
molecule
physical change
physical property
potential energy
precipitate
reagent
specific gravity
specific heat
sublimation
surface tension
symbol
temperature
vapor pressure
viscosity