

Your Final Exam for Chemistry will include **ONE** question from each Section covered throughout the year (approximately 95 questions). The question may be multiple choice, true/false, fill in, short answer or a calculation (math) problem that you have to solve. Below is a list of all sections that were covered:

Chapter 1:

Section 2- What is chemistry- Define chemistry

Section 3 - Scientific Method- Steps/Application

Section 4- Qualitative and Quantitative data

Chapter 2:

Section 1- Scientific Notation

Section 2- Units and Unit Systems (English, Metric)

Section 3- Standard Metric Units for length, mass and volume

Section 5- Significant Figures

Section 6- Metric Unit Conversion (T-Charts)

Section 7- Temperature Scales and Temperature Conversions

Section 8- Density

Chapter 3:

Section 1- Matter and 3 states of Matter

Section 2- Physical and Chemical Properties

Section 3- Elements and Compounds

Section 4- Mixtures and Pure Substances

Section 5- Separating Mixtures

Section 6- Energy and Heat- definitions

Section 7- Energy and Heat – calculation

Chapter 4:

Section 1- Elements

Section 2- Element Symbols

Section 3- Dalton's Atomic Theory

Section 4- Chemical Formulas

Section 5- Atomic Structure- Scientists and sub atomic particles

Section 6- Relative mass and charge of sub atomic particles

Section 7- Isotopes

Section 8- Periodic Table- Groups, Metals/Non-metals

Section 9- Natural states of elements, diatomic molecules

Section 10- Ions

Section 11- Ionic Compound Properties

Chapter 5:

Section 1- Naming Compounds- why is a system necessary

Section 2- Naming Compounds that contain a metal and a nonmetal (Ionic compounds)

Section 3- Naming Compounds that contain only nonmetals (covalent compounds)

Section 4- Same as two above (be sure you know there are two types of ionic compounds)

Section 5- Polyatomic Ions in compounds

Section 6- Naming Acids

Section 7- Formula Writing from Names (for any of the above types)

Chapter 6:

Section 1- Signs that a reaction has occurred

Section 2- Parts of a chemical equation

\*\* Know Law of Conservation of Matter also

Section 3- Balancing Chemical Equations

Chapter 7-

Section 1- Driving Forces of Reactions

Section 2- Precipitation Reactions

Section 3- Different Types of Equations- Molecular, Complete Ionic, Net Ionic

Section 4- Acid/Base Reactions

Section 5- Oxidation/Reduction Reaction

Section 6- Other ways to Classify Reactions- double displacement, acid base, oxidation reduction

Section 7- More ways to classify- Combustion, synthesis, single replacement, decomposition

Chapter 8-

Section 1- Counting by Weighing

Section 2- Counting Atoms by Weighing

Section 3- The Mole and Avogadro's Number

Section 4- Molar Mass

Section 5- Percent Composition

Section 6- Two types of Formulas- Molecular and Empirical

Section 7- Calculating Empirical Formulas

Section 8- Calculating Molecular Formulas

## Chapter 9

Section 1- Information given by a Balanced Equation

Section 2- Mole to Mole Ratios

Section 3- Mass to Mass (Stoichiometry- 3 step problems)

Section 4- Limiting Reactant

Section 5- Percent Yield

## Chapter 10

Section 2- Electromagnetic Radiation – Terminology

Section 3- Atoms Emit light – concept

Section 4- Energy Levels of Hydrogen- Quantized

Section 5- Bohr Model

Section 6- Wave Mechanical Model

Section 7- Orbitals- s,p,d,f

Section 8- More on the Wave Mechanical Model- Pauli Exclusion Principle

Section 9- Electron Configurations- 3 types , regular, abbreviated, box diagram

Section 10- More on Configurations- See above

Section 11- Atomic Trends- Ionization Energy and Atomic Size

## Chapter 11

Section 1- Bonding

Section 2- Atomic Trends- Electronegativity

Section 3- Bond Polarity- Dipole

Section 4- Stable Electron Configuration

Section 6- Lewis Structures

Section 7- Multiple Bonds (double, triple)

Chapter 12-

Section 1- Pressure and units of pressure

Section 2- Boyles Law

Section 3- Charles Law

Section 4- Avogadro's Law

Section 5- Ideal Gas Law

Section 6- Dalton's Law of Partial Pressure

Section 8 and 9- Kinetic Molecular Theory

Section 10- Gas Stoichiometry (\*\* Note this was done with Chapter 9)

Chapter 13 (done with Chapter 3)

Section 1- Water and its Phases

Section 2- Energy For State of Matter Changes

Chapter 14

Section 1- Solubility- Like dissolves Like

Section 2- Quantitative Descriptions of Solutions

Section 3- Mass Percent

Section 4- Molarity

Section 5- Dilution

Chapter 15-

Section 1- Definitions of Acids and Bases

Section 3- Amphoteric Nature of Water

Section 4- The pH Scale

Section 5- Calculating pH of Strong Acids/Bases