Chapter 1 Assignments

The following problems will be collected at the first exam.

Problems:13,17,20,24,30,37,47,51,55,57,63,65,67,69,77,83,87,89,93,97,101,116,118,128

Exam Review Topics

terms	**skills/operations**
SI Units	metric/metric conversions
Significant figures	U.S./metric conversions
Accuracy/precision	Density problems
Physical/chemical changes	Temperature conversions

Chapter 2 Assignments

The following problems will be collected at the first exam.

Problems: 13,17,19,27,31,37,45,49,53,59,61,67,69,75,77,85,89,108,112,116

Exam Review Topics

terms	**skills/operations**
Electron/proton/neutron	Determine total number of:
Ionic/covalent	protons
Atom/molecule	neutrons
Isotopes	electrons
Atomic number	Predicting charge of an ion
Mass number	Mole problems
"Pet names" for selected groups	
Group/period	
Metal/nonmetal/metalloid	
Anion/cation	

Chapter 3 Assignments

The following problems will be collected at the first exam.

Problems: 4,17,23,29,33,37,41,43,51,59,63,69,75,85,89,91,95,99,103,110,114,124

Exam Review Topics

terms	**skills/operations**
Ionic/covalent bond	Mole concept (using N_a)
Polyatomic ion	Calculating formula mass
Avogadro's number	Percent composition problems
Empirical formula	Deriving empirical formulas
Percent composition	Naming ionic compounds
	Naming covalent compounds

Chapter 4 Assignments

The following problems will be collected at the second exam.

Problems: 5,8,10,17,19,23,25,29,33,35,39,41,43,47,53,60,62,66,

Exam Review Topics

terms	**skills/operations**
Mole concept	Balancing equations
Chemical Equation	Stoichiometric Calculations (incl. limiting reagent, %yield)
Reactant/product	Combustion, Alkali Metals, and Halogen reactions

Chapter 5 Assignments

The following problems will be collected at the second exam.

Problems: 1,3,11,16,21,25,29,33,37,41,43,45,47,55,63,69,76,80,84

Exam Review Topics

terms	**skills/operations**
Solvent/solute	
Solution concentration	Molarity/dilution problems
Electrolyte..strong/weak	Writing Net Ionic equations
Ionic Equation	Precipitation reactions
Net ionic equation	Acid/base Neutralization reactions
Salt	Oxidation Reduction reactions
Oxidation number	Solubility rules

Chapter 6 Assignments

The following problems will be collected at the second exam.

Problems: 6,13,17,25,29,31,35,39,45,51,55,59,63,67,73,79,87,91,100,106,118

Exam Review Topics

terms	**skills/operations**
Boyles Law	Dynamic/static gas law problems
Charles Law	Molecular mass of a gas
Gay-Lussac's Law	Densities of gases
Avogadro's Law	Mixtures of gases (Dalton's Law)
STP	"Real" vs "Ideal" gases
Dalton's Law of Part. Pressure	Stoichiometry with gases
Mole fraction	Diffusion/effusion of gases

Chapter 7 Assignments

The following problems will be collected at the second exam.

Problems: 13,18,26,35,41,47,51,57,61,65,67,73,75,79,81,85,89,100,106,112

Exam Review Topics

terms	skills/operations
Endo/exothermic	Calorimetry problems
Enthalpy of reaction	Hess' Law problems
Calorimetry	Heats of Formation problems
Heat capacity	
Specific heat	

Chapter 8 Assignments

The following problems will be collected at the third exam.

Problems: 4,11,14,16,37,39,43,51,59,61,69,71,80,83,100,104

Exam Review Topics

terms	skills/operations
Electron/proton/neutron	Calculate frequency/wavelength
Uncertainty Principle	Calculate energy of a photon
Wavelength/frequency	Rydberg Equation
Quantum numbers	Shapes of orbitals
Line spectrum	
de Broglie Relationship	
Bohr Theory	

Chapter 9 Assignments

The following problems will be collected at the third exam.

Problems: 16,33,35,39,47,49,61,65,69,71,75,81,85,89,93,99,105

Exam Review Topics

terms	skills/operations
Hund's Rule	Electron configurations
Pauli Exclusion Principle	Box diagrams
Para/diamagnetic	Quantum numbers
Atomic radius	Trends in the Periodic Table
Ionization Energy	
Electron Affinity	
Electronegativity	
Periodic Law	

Chapter 10 Assignments

The following problems will be collected at the third exam.

Problems: 4,15,19,28,37,41,43,49,53,55,57,61,63,65,71,75,77,86,96,102

Exam Review Topics

terms	**skills/operations**
Ionic radius	Lewis Dot Symbols
Ionic Bond/Covalent Bond	Lewis Dot Formulas (ionic)
Octet Rule	Lewis Structures (covalent)
Isoelectronic	Incomplete Octets
Bonding pair/lone pair	Expanded Octets
Polar Bonds	Bond Energy problems
Resonance	

Chapter 11 Assignments

The following problems will be collected at the fourth exam.

Problems: 4,7,16,33,35,39,47,51,59,61,67,84

Exam Review Topics

terms	**skills/operations**
VSEPR Theory	Electron pair geometry
Polar/nonpolar	Molecular shape
Hybridization	Polarity
Sigma/Pi Bonds	Box diagrams (hybrid orbitals)

Chapter 12 Assignments

The following problems will be collected at the fourth exam.

Problems: 13,35,39,41,43,57,67,71,

Exam Review Topics

terms	**skills/operations**
Phase transitions	Relate I.M.Forces to:
Heat of Fusion	boiling point heat of fus.
Heat of Vaporization	melting point heat of vap.
I.M.Forces	viscosity surface tension
Phase diagrams	vapor pressure
	Calculation of "q" (phase change and spec. heat)

Chapter 14 Assignments

The following problems will be collected at the fourth exam.

Problems:8,13,23,32,41,45,51,57,63,67,73,77,81,85,89,91,97

Exam Review Topics

terms	**skills/operations**
Solute/solvent	Expressions of Concentration: percent molality
Henry's Law/Raoult's Law	Molarity mole fraction
Colloids/Tyndall Effect/Brownian motion	Calculation of: FP depression/BP elevation
Colligative properties/Van't Hoff Factor	Vapor pressure and osmotic pressure