

TOPICS GUIDE 2015 HONORS MID-COURSE EXAM

Classification of Matter:

- The difference between pure substances and mixtures:
- homogeneous and heterogeneous mixtures:
- elements and compounds: solutions
- Chemical /Physical properties and change
- Observational signs of a Chemical Reactions
- Intensive vs extensive
- How to separate components of a mixture
- Difference exothermic/endothermic reaction
- Kinetic theory of Solids, Liquids, Gases

Atomic Theory:

- Parts of the atom: protons, neutrons, electrons -how to determine atomic number and mass number –creating shorthand notation
- Dalton's Atomic Theory vs Modern Atomic Theory
- Isotopes
- Alpha and Beta decay reactions
- Nuclear fusion and fission
- $\frac{1}{2}$ life
- Law of Conservation of Matter and Energy and Definite and Multiple Proportions
- Dalton, Rutherford, Thomson, contributions
- Valence electrons
- Lewis Dot Diagrams

Arrangement of Electrons in Atoms:

- Parts of Waves (Energy relation to wavelength and frequency)
- Photoelectric Effect
- Ground state vs. Excited State
- Emission Spectrums
- Electron Configurations: How to construct and interpret (Orbital notations, longhand, Noble gas Configurations)
- Quantum #s (Names, Symbols Definitions and Use)
- Three Rules for filling orbitals: Aufbau, Pauli, and Hund

Math

- Significant Figures
- Metric Units
- Density Calculations and interpretations:
Example: a cube has a side dimension of 2.0 cm and a mass of 10.00 grams, will it sink or float in water?
- English to Metric conversions
- Specific heat calculations
- MOLES MOLES MOLES Grams to Moles to Atoms/molecules
- % composition of compounds
- Hydrate Calculations

DON'T FORGET TO LOOK OVER THE LABS WE HAVE DONE TOO! (Separation, Density, Specific Heat, Hydrate, flame lab)
Anything that has been on a Quiz Test or Assignment is fair game.