<u>**Study guide: Chemistry final**</u>

Stoichiometry

➢ Finding molar mass of a compound (periodic table)
   o Example: HNO_3 = 1.0 + 14.0 + 3(16.0)
   o H_2SO_4 =
   o $NaHCO_3$ =
➢ Converting from grams to moles with molar mass
   o Ex: 180 g H_2O x 1 mole/18.0 g = 10 moles
   o 200 g H_2SO_4 = _____ moles
   o 100 g $NaHCO_3$ = _____ moles
➢ Use balanced equation to compare the amount of one compound to the amount of another

States of Matter

➢ Know names and properties of three main states of matter
➢ Know the names for each transition between the states
   o Ex: solid → liquid is **melting**
   o Liquid → solid is _____
   o Liquid → gas is _____
   o Gas → liquid is _____
   o Solid → gas _____
   o Gas → solid _____

Gas laws

➢ You will be given the combined gas law, but only the letter and the relationship. It is up to you to remember and apply the variables correctly
   o P = _____ units = _____
   o V = _____ units = _____
   o T = _____ units = _____
➢ You will be given the ideal gas law, and the value for R but must know the situations when you use it
   o n = _____
   o R = _____

Thermochemistry

➢ Endothermic vs exothermic…how do you describe the difference?

➢ How is heat different from temperature? How does heat flow?

> You will be given the specific heat equation…you must know the variables

  - Q _____
  - C _____
  - m_____
  - ΔT _____

Acids and Bases

> Compare and contrast acids and bases

> What is the scale for pH…which values are basic and which are acidic

> Is water an acid or a base?

> For every acid there is a conjugate _____

> For every base there is a _____

> What are the products of a neutralization reaction

Oxidation reduction Ch 20

> Oxidation is _____ of electrons, reduction is _____
> Rules for oxidation numbers

Nuclear Chemistry Ch 25

> Parts of the atom and their charges:

> What makes a nuclear reaction different from a chemical one? (fission vs fusion)

> How do you calculate half-life problems

> Essay: List the pros and cons of nuclear power and nuclear energy. Would the world be better today if we had never split the atom? Defend your position.