

Chapter 18 Nuclear Chemistry

- Uses of the different decay particles
 - Beta particle
 - Positron
 - Electron capture
 - Alpha particle
 - Gamma ray
- 1st order rates of decay
 - understanding what happens in a decay
 - For example: p.908 problem 29
 - $T_{1/2} = 0.693 / k$
 - $\ln [A] = -kt + \ln [A_0]$
- Use of decay rates to determine lifetimes, etc.
- Zone of stability (p.878-879)
- Atomic mass, atomic number, symbol notation
- $E=mc^2$
- Binding energy
 - Use of $E=mc^2$ with the change in mass
- I am probably forgetting something...
- Problems: 9-38 & the harder problems
- Don't worry about the end part of the chapter about the health effects, etc.

Chapter 21 Transition Metal and Coordination Chemistry

- Understanding the general properties of the 1st row transition metals
 - The periodic trends
 - Table 21.2
- Nomenclature!
- From the structure determine the number of coordination sites on a ligand.
- Isomers
 - Figure 21.8
 - cis, trans, mer, fac
 - Chiral
- Basic shapes of the complex.
- Crystal Field theory
 - What is the idea?
 - The orbital splitting?
 - How we get the color of different complexes?
 - $10Dq$ or Δ
 - What changes Δ ?
 - High spin and low spin
 - Spectrochemical series
- I am probably forgetting something...
- Problems: 19-54 & some of the harder ones
- Don't worry about the metallurgy