

## CH 223 Chapter Twenty-four Study Guide

- Identify the transition elements, the d-block elements, the lanthanide elements, the actinide elements, and the f-block elements. Be able to predict properties for each of these classifications.
- Know how to determine if an element is paramagnetic or diamagnetic.
- Be able to describe and identify coordination compounds. Know how to determine the oxidation number for a coordination compound.
- Know what a ligand is and whether it is monodentate, bidentate or polydentate.
- Understand why there are no cationic coordination compounds.
- Know what EDTA is.
- Know how to systematically name coordination complexes using the rules outlined in the handout.
- Be able to determine the coordination number for a coordination compound. Know the differences between octahedral, square planar and tetrahedral complexes.
- Understand the definition of an isomer. Realize that there are two types of isomers, both geometrical and optical.
- Know the terms cis, trans, mer, and fac. Know how they apply to isomerism in coordination compounds.
- Be able to explain briefly the differences between molecular orbital theory and crystal field theory.
- Know what differentiates between high spin and low spin complexes.
- Understand why coordination compounds are colored and how the complex can be explained using the crystal field model of bonding.
- Be able to solve and understand the assigned problems in problem set #6.
- Realize that this is the last chapter study guide that you will ever see in a Chem 22x class! On to the final exam and vacation!!!