Format of Final examination May 2002.

1. Biochem.

Identification of aromatic, polar, basic or acidic amino acids. See slide 7.

Identification of a nucleotide, simple sugar, complex sugar.

Dehydration synthesis.

(about 6 points out of 60 )

2. Naming and identification of of carboxylic acid, ketones, aldehydes.

Oxidation of primary and secondary alcohols.

Addition reactions of unsaturated hydrocarbons.

Amines and amides.

Hybridization of specific carbon atoms in organic compounds.

Isomerism.

(about 16 points out of 60.)

3. Thermo - Predicting signs of DH and D S for a given reaction…

Heats of formation using calculations.

Calculating DS from DG , DH and T.

Relationship between DGo and K.

(about 5 points)

4. Nuclear chem

Nuclear equations - predicting products, representing nuclides

Half life calculations

Mass defect ( about 8 points)

5. Kinetics

Initial Rate problems.

Catalysts.

First order kinetics. ( 5 points)

6. Equilibrium.

Finding K from equilibrium pressures.

Converting between Kp and Kc ( equation given)

Le Chatelier’s Principle. (predicting “shifts.:

Finding Kp from initial values, and one equilibrium value.

pH of strong and weak acids and/or bases

pH of a buffer

Identifying acids and bases in BL theory.

Solubility from Ksp

Ka and Kb of conjugate acid base pairs. (given one, find the other)

( about 11 points)

Reduction, oxidation, and voltaic cells.

Analysis of a given cell. ( 4 points)

Balancing a half reaction in acidic media. (1)

Complex ions.

Naming complex ions. ( 2 points)

Diagram of a complex containing a ligand. (2)

Optical isomerism. ( 1 pt)

Total points - about 63, will me multiplied by 1.66