

Preparing for the Third Exam

What is Covered

Methods for Obtaining Calibration Curves and Linear Regression. You should be familiar with the three common approaches to preparing calibration curves and know when each is appropriate. You also should know how to use Excel to generate a linear regression equation for a calibration curve. However, if you need help doing this on the final exam, I will gladly lend a hand.

General Theory of Chromatographic Separations and Their Optimization. You should be familiar with the various ways in which separations are characterized based on things that can be measured from a chromatogram. You should also be familiar with the general approaches to optimizing separations, as well as the method known as “window-diagramming.”

Gas Chromatography, HPLC, and Other Separation Methods. For each you should know the basic experimental design and how a chromatographer approaches the optimization of a separation for each (what is called method development). You also should be prepared to solve quantitative problems involving the use of calibration curves.

Format of the Exam

The exam is a mixture of short-answer questions, short problems, and longer problems. Short-answer questions generally ask you to explain an observation, figure, or set of data, or to make a prediction about the behavior of an equilibrium system. Such questions are designed to test your conceptual understanding of the material beyond the simple (!?) plugging of numbers into equations. Short problems are relatively simple calculations that test only one or two closely related topics, such as converting between concentration units or writing charge balance equations. Longer problems are more comprehensive and, well, longer (you certainly can expect at least one fairly complex equilibrium problem). Although the “correct” answer is important for these problems, your approach carries greater weight.

Tables of equilibrium constants and a periodic table, and will be provided. You do not need to memorize equations as they will be provided to you. The final exam is scheduled for Friday, December 14th at 1:00 PM; however, you may arrange to take the exam during any mutually acceptable time during final exam week.