

Exam Reading list for Chem 312 REVISED FOR 2006!!

You will notice that some of the text material was not covered explicitly in class, it is still fair game so you should know it.

Data Analysis and Stats

Evaluation of Analytical Data (Appendix 1, pg. A-1...)

a1A precision, accuracy (pgs. A-1 to A-5)

a1B Statistical Treatment of Errors (pgs. A-5 to A-8 1st column)

a1B ditto (pgs. A-9 from std. error of mean up to A-16 part a1B-5)

a1C least squares (pgs. A-18 to end of chapter)

KNOW HOW TO CALCULATE THE SLOPE AND INTERCEPT USING YOUR CALCULATOR! I won't expect you to do the method of least squares or the full error calculation on the exam. Always look for outliers and curvature in the calibration data!! Where necessary I will provide you with σ_m , σ_b and σ_r (most often you will only need σ_r or S_r). You must be able to calculate the concentration and propagate the error into the final result and calculate the confidence interval!

Selecting an Analytical Method (Chapter 1, pg. 11 to pg. 19)

1D selecting an analytical method (pgs 11-15)

1E Calibration methods (pgs 15 to end of chapter)

Chromatography

You should read all of Chapter 26, parts of 27 and 28. I will focus my questions on the material that we have covered in class but, you may need some of the other chapter material to fully understand and answer the question.

Introduction to chromatography (Chapter 26, know it, live it, breath it)

Gas Chromatography (Chapter 27, up to 27D-3. Don't include 27A-1 and 27A-2)

High Performance Liquid Chromatography (Chapter 28, up to 28F-3)

Atomic Spectroscopy

Intro to Optical Atomic Spectrometry (Chapter 8, pg. 192 to 205)

whole chapter

Atomic Absorption (Chapter 9, pg. 206 to 225)

THIS INCLUDES Zeeman, and other background correction methods

No atomic fluorescence (beginning on 225)

Atomic Emission (Chapter 10, pg. 230 to 252)

Exclude 10A-2 (direct current plasma),

Exclude pg. 238 to end of pg. 241.

Exclude from 10B (pg. 244) to end of chapter.

Atomic Mass Spectrometry (Chapter 11, pg. 253 to 271)

Exclude 11B-3 (pg 260) Time of Flight and Double Focusing to 11C (pg 262)

Exclude 11D Spark Sources (pg 269)