

CHEM 243 STUDY GUIDE for EXAM #3

Exam: Monday, June 15.

Extra Office hours: On Monday June 15 I will have office hours from 8:30-10 am and from 11-1 pm.

The best items to review are in-class #3 and the problem sets posted for chap 20/21/22/26 and 27.

The exam will cover:

Chapter 20 Cover sections 20.2 and 20.3. No problems to work

Chapter 21 Cover sections 22.1-21.3, 21.11-21.13, 21.16-21.17. Also do problems 2-5, 7, 21, 23,24, 26, from the text

Chapter 22 Cover sections: 22.1- 22.3, 22.8 and 22.12. Do problems 1, 3, 4, 6, 7 and 24-27.

Chapter 26 cover sections 26.1-26.3. Do problems 1, 3 and 4

Chapter 27 sections 27.1, and 27.3 Do problems 1, 7

Specifics to Know:

- Recognized which nitrogen in an amine will be the most nucleophilic/basic
- The structure of Glucose in the straight chain and cyclic form (both alpha and beta).
- Be able to draw the cyclic structures (pyranose form) of all the other aldohexoses. You will be given the straight chain structure of these as on page 982 of your text.
- Glycosidic linkage of polysaccharides (both alpha and beta)—which can humans digest?
- Anomeric carbons in saccharides,
- Recognize the structures of starch, cellulose, sucrose and fructose
- Basic structure of an amino acid (Zwitterion and at high and low pH)
- Structure of polypeptides and proteins—
- Peptide bond
- Draw the structure of a peptide from the abbreviated name (example: ala-gly) and visa versa.
- Structure and function of Nucleic acids (DNA and RNA)
- Recognize the 4 bases used in DNA (recognize from a list of compounds)
- How hydrogen bonding occurs between adenine, guanine cytosine and thymine—how this leads to the double Helix
- Know the basic structure of a fat and oil-what determines the melting point