CHM 333
Review Sheet – Exam 1

Readings: Chapters 1: Sections 1-1 through 1-3
Chapter 2 – All Sections
Chapter 4 – Section 4-1

Introduction to biochemistry

4 major classes of biomolecules

Eukaryotic cells / organelles

Amino acids
- know all 20 (structure, full name, three letter name, one letter name, classification, special characteristics)
- general structure
- stereochemistry (D vs. L, enantiomers, chirality)
- general rules for placement in protein synthesis
- essential vs. non-essential

L-tryptophan

Monosodium glutamate (MSG)

Scurvy

Kwashiorkor

Phenylketonuria (PKU)

Round-Up (mechanism of action)

Buffers
- K_a, pK_a, pH, pOH
- strong vs. weak acids
- Henderson-Hasselbalch equation and its use
- maximum buffer capacity
- polyprotic acids
- ionization of amino acids (net charge, pI)
- physiological buffers
- alkalosis/acidosis

Peptide bond – properties and drawing

Drawing peptides at various pHs

Calculating pI

Peptides in biological systems