

CHEM 51A GCHEM REVIEW

CONCEPTS

GENERAL PERIODIC TABLE TRENDS

General layout of periodic table

Size

Electronegativity

Polarizability

ATOMIC STRUCTURE

Subatomic particles, nucleus

Electronic structure, orbitals, including hybrids*

BONDING

Ionic, covalent, polar covalent

Orbitals used in bonding*

LEWIS STRUCTURES

Drawing appropriate structures

Formal charge

Resonance structures*

MOLECULAR SHAPE AND POLARITY

VSEPR

Shapes

Angles

Polar vs nonpolar molecules

ACIDS/BASES

Definitions

Identify acid/base/conjugate acid/conjugate base

INTERMOLECULAR FORCES

Types of forces

Effects on physical properties

REACTION COORDINATE DIAGRAMS

ΔG

Activation energy

SIMPLE KINETICS

Rate laws (in general)

Rate-determining step

Catalysts