

GRADE 12 UNIVERSITY CHEMISTRY [SCH4U] EXAM REVIEW

The following sections of your Nelson Chemistry 12 (2003) textbook will be evaluated on the exam, in some degree.

STRUCTURE & PROPERTIES

Atomic Theories

- 3.1 Early History of Atomic Theories
- 3.3 Origins of Quantum Theory
- 3.4 The Bohr Atomic Theory
- 3.5 Quantum Numbers
- 3.6 Atomic Structure and the Periodic Table
- 3.7 Wave Mechanics and Orbitals

Chemical Bonding

- 4.1 Lewis Theory of Bonding
- 4.2 The Nature of the Chemical Bond
- 4.3 VSEPR Theory
- 4.4 Polar Molecules
- 4.5 Intermolecular Forces
- 4.6 The Structure and Properties of Solids

Questions to Try:

p.286#1-9,11,12,15-30,32-36,38-40; p.288#1-29

ORGANIC CHEMISTRY

Organic Compounds

- 1.1 Functional Groups
- 1.2 Hydrocarbons
- 1.3 Reactions of Hydrocarbons
- 1.4 Organic Halides
- 1.5 Alcohols and Ethers
- 1.6 Aldehydes and Ketones
- 1.7 Carboxylic Acids and Esters
- 1.8 Amines and Amides
- 1.9 Synthesizing Organic Compounds

Questions to Try:

p.152#1a-d,f,g,l,j;2a-d,f,g;3a-g,l,i;4b-f;5ab;6,7,9ab,10a,c,g

ENERGY CHANGES AND RATES OF REACTION

Thermochemistry

- 5.1 Changes in Matter and Energy
- 5.2 Molar Enthalpies
- 5.3 Representing Enthalpy Changes
- 5.4 Hess's Law of Additivity of Reaction Enthalpies
- 5.5 Standard Enthalpies of Formation

Chemical Kinetics

- 6.1 Rate of Reaction
- 6.2 Factors Affecting Reaction Rate
- 6.3 Rate Laws and Order of Reaction
- 6.4 Collision Theory and Rate of Reaction
- 6.5 Explaining and Applying Chemical Kinetics

Questions to Try:

p.412#1-30; p.414#1-23 (#23 D is B)

CHEMICAL SYSTEMS AND EQUILIBRIUM

Chemical Systems in Equilibrium

- 7.1 Dynamic Equilibrium in Chemical Systems
 - 7.2 Equilibrium Law in Chemical Reactions
 - 7.3 Qualitative Changes in Equilibrium Systems
 - 7.5 Quantitative Changes in Equilibrium Systems
 - 7.6 The Solubility Product Constant
- ### *Acid-Base Equilibrium*
- 8.1 The Nature of Acid-Base Equilibria
 - 8.2 Weak Acids and Bases

Questions to Try:

p.636#1-13,15,23-27,32-33; p.639#1-6,8-23,27-34

ELECTROCHEMISTRY

Electric Cells

- 9.1 Oxidation and Reduction
- 9.2 Balancing Redox Equations
- 9.3 Predicting Redox Reactions
- 9.5 Galvanic Cells

Questions to Try:

p.726#1-4,6-8,10-18

On the exam, you will be provided with:

- A periodic table
- Data sheets (no equations provided)

You will need to bring, in a clear Ziploc bag:

- Pencils
 - Pens
 - Eraser
 - Calculator (no lid, non-programmable)
- * cell phones are not allowed in the exam room

Date: _____

Time: _____

Room: _____