

Nelson Chemistry 12- Study Guide for Chapters 1 and 2

1.1 Alkanes

Define

organic Compound (p. 8)

hydrocarbon (p. 8)

saturated hydrocarbon (p. 8)

alkane (p. 8)

cyclic alkane (p.9)

alkyl group (p. 10)

substituent group (p. 10)

1.1. Practice Questions, p. 14, #1 and 2.

1.1. Complete Combustion, p. 15

Define: Alkyl Halide (p. 16)

1.1 Review practice questions, p. 17, # 1-3

1.2 Alkenes and Alkynes

Define: unsaturated hydrocarbon (p. 18)

alkene (p. 18)

alkyne (p. 18)

aliphatic hydrocarbons (p. 18)

Practice questions, p. 21, #1 and 2.

Define: stereoisomers (p. 22)

cis isomer (p. 22)

trans isomer (p. 22)

Define functional group, p. 23

Define additional reaction, p. 23)

Finish naming the ethers and thiols.

Review in class for chemical reactions:

P. 23, Addition Reaction (define and show an example of this reaction)

P. 25, Markovnikov's rule (define and show an example of this rule)

Do the following: 1.2. Review of Reactions and Naming: p. 27, #2, 3, 4.

1.3 Aromatic Hydrocarbons (p. 28)

aromatic hydrocarbon p. 28

P. 30 What are the 6 "Reactions of Aromatic Compounds)?

Practice 1.3. p. 30, #1 and 2.

Review practice, p. 31, # 1.

1.4 Alcohols, Ethers, and Thiols
define, alcohol (p. 32)

primary alcohol (p. 32)

secondary alcohol (p. 32)

tertiary alcohol (p. 32)

Do practice, p.34, #1 and 2.

Define: hydrogen bonding (p. 35): More detailed explanation of bonding (p.240).

Show a dehydration involving an alcohol , p. 35,

P. 35, Show the steps for making the production of butan-2-ol.

Do, practice, p. 37, #1 and 2.

1.4 Ethers
define: ether (p. 37), an

Review Questions from Textbook:

Naming of Alcohols: p. 34, #1 &2.

Define: Condensation reaction, p. 37; show using a reaction between ethanol and methanol.

Do practice (p. 38), # 1 and 2.

Review Questions, p. 39, #1-6.

1.5 Aldehydes and Ketones

Define, (p. 40) Carbonyl group

Define aldehyde (p.40)

ketone (p. 40)

Name IUPAC (Remember International Union of Pure and Applied Chemistry)

Do, practice- naming aldehydes, p. 41, #1 and 2.

1.5 Ketone -naming-: p.42, # 1 and 2.

Properties of aldehydes on p. 43. Draw a diagram showing the properties of carbonyl group. You must include the following: carbonyl group, electronegativity, and solubility of ketones and aldehydes in water.

Reactions involving aldehydes and ketones (p. 43 and 44)
Show controlled oxidation of ethanol)

Show the hydrogenation of aldehydes and ketones (p. 44)

Do Practice, p. 45, #1-3.

Do Review p.46, #1. YOu can write in your book.

1.6 Carboxylic Acids, Esters and Fats

Carboxylic Acids

1. Define carboxyl group (p. 47)
2. Define carboxylic acid (p. 47)
3. Practice, p. 48, # 1 and 2

Esters

1. Define Esters, p. 49
2. Define hydrolysis , p. 51
3. Practice, p. 53# 1abcd.

Fats Lipids and oils: In a group, draw a full structure of vegetable oil, olive oil, lard. Compare (show similarities) contrast (show differences).