Exam #6 Objectives

CHEM 1050 Chemistry and the Citizen

Text Reading

Chapter 11: sections 1-7
(skeletal formula and line-angle formula are the same)
Chapter 12: sections 1-3
(for naming only alcohols, aldehydes, and ketones)

Homework Assignment

Chapter 11: 1, 4, 10, 12, 13, 15, 18bcd, 20, 22, 24, 27, 29, 32, 34.
Chapter 12: 2bcd, 3b, 10abd, 12, 18ab, 21, 22.
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Concepts

1. Discuss the differences and similarities between the isolation in nature and the synthesis in the laboratory of organic compounds.
2. Demonstrate the ability to convert between molecular formulas, line-angle formulas, expanded structural formulas, and condensed structural formulas.
3. Name and identify eight basic functional groups- alcohols, aldehydes, alkanes, alkenes, alkynes, amines, ketones, and carboxylic acids.
4. Given a molecular or structural formula, identify and/or write other constitutional isomers.
5. Distinguish between the parent and substituent chains in an alkane.
6. Name alcohols, aldehydes, unbranched alkanes, branched-chain alkanes, cycloalkanes, cycloalkenes, alkenes, alkynes, and ketones.
7. Discuss basic properties of alkanes, alcohols, ethers, aldehydes, and ketones.
8. Write balanced chemical equations for combustion reactions.
9. Identify cis-trans isomerism in alkenes and name them.
10. Write the products for hydrogenation reactions for alkenes and alkynes.
11. Write the products for halogenation, hydrohalogenation, and hydration reactions with alkenes.
12. Demonstrate a working vocabulary of the following terms:

alcohol	conformation	ketone
aldehyde	constitutional isomer	line-angle formula
alkane	cycloalkane	Markovnikov's rule
alkyl group	double bond	octane rating
amine	functional group	parent chain
amino group	halogenation	R-
carboxylic acid	hydration	saturated
carbonyl group	hydrocarbon	single bond
carboxyl group	hydrogen bonding	structural formula
cis-trans isomerism	hydrogenation	substituent chain
combustion	hydrohalogenation	triple bond
condensed structural formula	hydroxyl group	unsaturated