

Index

A

A values

2.S: Unsaturated Hydrocarbons (Summary)

abo blood marker

6.7: Oligosaccharides

active site

8.8: Proteins (Summary)

8.9: E- Proteins (Exercises)

activity

8.6: Enzyme Activity

8.8: Proteins (Summary)

8.9: E- Proteins (Exercises)

addition reaction

5: Organic Chemical Reactions

5.2: Alkene Reactions

5.E: Organic Chemical Reactions (Exercises)

5.S: Organic Chemical Reactions (Summary)

alcohol

3: Organic Nomenclature - Functional Groups

3.2: Alcohols

3.3: Phenols

3.E: Functional Groups (Exercises)

3.S: Functional Groups (Summary)

aldehyde

4: Organic Nomenclature - Carbonyl-Containing Compounds

4.1: Aldehydes and Ketones

4.2: Properties of Aldehydes and Ketones

4.E: Carbonyl-Containing Compounds (Exercises)

4.S: Carbonyl-Containing Compounds (Summary)

aldose

6.1: Overview of Carbohydrates

6.3: Classifying Monosaccharides

alkanes

1: CHEM 1151 Organic Review

1.3: Branched Alkanes

1.4: Alkane IUPAC Nomenclature

1.E: CHEM 1151 Organic Review (Exercises)

1.S: CHEM 1151 Organic Review (Summary)

alkene reaction

5.2: Alkene Reactions

alkenes

2: Organic Nomenclature - Unsaturated Hydrocarbons

2.1: Alkenes - Structures and Names

2.E: Unsaturated Hydrocarbons (Exercises)

2.S: Unsaturated Hydrocarbons (Summary)

alkyl halide

1.5: Halogenated Alkanes

1.E: CHEM 1151 Organic Review (Exercises)

1.S: CHEM 1151 Organic Review (Summary)

alkynes

2: Organic Nomenclature - Unsaturated Hydrocarbons

2.3: Alkynes - Structures and Names

2.E: Unsaturated Hydrocarbons (Exercises)

2.S: Unsaturated Hydrocarbons (Summary)

allosteric site

8.5: Enzymes - Biological Catalysts

8.7: Enzyme Inhibition

amidation

5.3: Condensation Reactions

5.E: Organic Chemical Reactions (Exercises)

5.S: Organic Chemical Reactions (Summary)

amide

4: Organic Nomenclature - Carbonyl-Containing Compounds

4.7: Amides

4.8: Physical Properties of Amides

4.E: Carbonyl-Containing Compounds (Exercises)

4.S: Carbonyl-Containing Compounds (Summary)

5.4: Hydrolysis Reactions

8.3: Peptides

amine

3: Organic Nomenclature - Functional Groups

3.6: Amines - Structures and Names

3.E: Functional Groups (Exercises)

3.S: Functional Groups (Summary)

amino acids

8: Proteins

8.1: Amino Acids

8.2: Reactions of Amino Acids

8.3: Peptides

8.4: Proteins

8.8: Proteins (Summary)

8.9: E- Proteins (Exercises)

10.8: Stage II of Protein Catabolism

amylopectin

6.8: Polysaccharides

amylose

6.8: Polysaccharides

Anabolism

10.1: Prelude to Metabolism

anomer

6.5: Reactions of Monosaccharides

aromatic

2: Organic Nomenclature - Unsaturated Hydrocarbons

2.4: Aromatic Compounds

2.5: Aromatics - Structure and Names

2.E: Unsaturated Hydrocarbons (Exercises)

2.S: Unsaturated Hydrocarbons (Summary)

3.3: Phenols

aromatics

2.S: Unsaturated Hydrocarbons (Summary)

ATP

10: Metabolism

10.1: Prelude to Metabolism

10.2: ATP- the Universal Energy Currency

10.5: Stage III of Catabolism

10.6: Stage II of Carbohydrate Catabolism

10.7: Stage II of Lipid Catabolism

10.9: Metabolism (Exercises)

10.10: Metabolism (Summary)

B

Benedict's Test

6.5: Reactions of Monosaccharides

benzene

2.4: Aromatic Compounds

2.5: Aromatics - Structure and Names

2.E: Unsaturated Hydrocarbons (Exercises)

3.3: Phenols

beta oxidation

10.7: Stage II of Lipid Catabolism

10.9: Metabolism (Exercises)

10.10: Metabolism (Summary)

boiling point

4.2: Properties of Aldehydes and Ketones

4.4: Physical Properties of Carboxylic Acids

4.6: Physical Properties of Esters

4.8: Physical Properties of Amides

branched chain

1.3: Branched Alkanes

C

carbohydrates

6: Carbohydrates

6.1: Overview of Carbohydrates

6.E: Carbohydrates (Exercises)

6.S: Carbohydrates (Summary)

10: Metabolism

10.3: Stage I of Catabolism

10.6: Stage II of Carbohydrate Catabolism

carbon designation

7.1: Fatty Acids

carbonyl

4: Organic Nomenclature - Carbonyl-Containing Compounds

4.1: Aldehydes and Ketones

4.2: Properties of Aldehydes and Ketones

4.3: Carboxylic Acids

4.7: Amides

4.8: Physical Properties of Amides

4.E: Carbonyl-Containing Compounds (Exercises)

4.S: Carbonyl-Containing Compounds (Summary)

carboxyl

4.3: Carboxylic Acids

4.4: Physical Properties of Carboxylic Acids

4.E: Carbonyl-Containing Compounds (Exercises)

4.S: Carbonyl-Containing Compounds (Summary)

carboxylic acid

4: Organic Nomenclature - Carbonyl-Containing Compounds

4.3: Carboxylic Acids

4.4: Physical Properties of Carboxylic Acids

4.E: Carbonyl-Containing Compounds (Exercises)

4.S: Carbonyl-Containing Compounds (Summary)

carboxylic acid derivatives

4: Organic Nomenclature - Carbonyl-Containing Compounds

4.5: Esters

4.6: Physical Properties of Esters

4.7: Amides

4.8: Physical Properties of Amides

catabolism

10: Metabolism

10.1: Prelude to Metabolism

10.3: Stage I of Catabolism

10.5: Stage III of Catabolism

10.6: Stage II of Carbohydrate Catabolism

10.7: Stage II of Lipid Catabolism

10.8: Stage II of Protein Catabolism

10.9: Metabolism (Exercises)

10.10: Metabolism (Summary)

catalyst

8.5: Enzymes - Biological Catalysts

8.6: Enzyme Activity

8.7: Enzyme Inhibition

8.8: Proteins (Summary)

8.9: E- Proteins (Exercises)

cellulose

6.8: Polysaccharides

chemical reactions

5: Organic Chemical Reactions

chiral

6.2: Stereoisomers

cholesterol

7.5: Steroids

citric acid cycle

- 10: Metabolism
- 10.5: Stage III of Catabolism
- 10.10: Metabolism (Summary)

codon

- 9.4: RNA Translation and Protein Synthesis
- 9.E: Nucleic Acids (Exercises)
- 9.S: Nucleic Acids (Summary)

coenzyme

- 8.5: Enzymes - Biological Catalysts

cofactor

- 8.5: Enzymes - Biological Catalysts
- 8.9: E- Proteins (Exercises)

common name

- 1.5: Halogenated Alkanes
- 2.4: Aromatic Compounds
- 2.5: Aromatics - Structure and Names
- 3.2: Alcohols
- 3.4: Ethers
- 3.6: Amines - Structures and Names
- 3.E: Functional Groups (Exercises)
- 3.S: Functional Groups (Summary)
- 4.5: Esters
- 4.7: Amides
- 4.E: Carbonyl-Containing Compounds (Exercises)
- 4.S: Carbonyl-Containing Compounds (Summary)

competitive inhibitor

- 8.7: Enzyme Inhibition

condensation

- 5: Organic Chemical Reactions
- 5.3: Condensation Reactions
- 5.E: Organic Chemical Reactions (Exercises)
- 5.S: Organic Chemical Reactions (Summary)
- 8.2: Reactions of Amino Acids
- 8.3: Peptides
- 8.8: Proteins (Summary)

Condensed Structural Formula

- 1.2: Structures of Organic Compounds

cycloalkanes

- 1: CHEM 1151 Organic Review
- 1.E: CHEM 1151 Organic Review (Exercises)
- 1.S: CHEM 1151 Organic Review (Summary)

cycloalkanes

- 1.6: Cycloalkanes

D

D sugar

- 6.3: Classifying Monosaccharides

deletion

- 9.5: Mutations and Genetic Diseases

delta

- 7.1: Fatty Acids

Denaturation

- 8.4: Proteins

diastereomers

- 6.2: Stereoisomers

diffusion

- 7: Lipids
- 7.4: Osmosis and Diffusion

digestion

- 10: Metabolism
- 10.3: Stage I of Catabolism
- 10.10: Metabolism (Summary)

dipeptide

- 8.2: Reactions of Amino Acids
- 8.3: Peptides

Disaccharide

- 6: Carbohydrates
- 6.1: Overview of Carbohydrates
- 6.6: Disaccharides
- 6.E: Carbohydrates (Exercises)
- 6.S: Carbohydrates (Summary)

DNA

- 9: Nucleic Acids
- 9.2: Nucleic Acid Structure
- 9.3: DNA Replication and Transcription
- 9.4: RNA Translation and Protein Synthesis
- 9.E: Nucleic Acids (Exercises)
- 9.S: Nucleic Acids (Summary)

E

Electron transport chain

- 10: Metabolism
- 10.5: Stage III of Catabolism

elimination

- 5.S: Organic Chemical Reactions (Summary)

elimination reaction

- 5: Organic Chemical Reactions
- 5.2: Alkene Reactions
- 5.E: Organic Chemical Reactions (Exercises)
- 6.E: Carbohydrates (Exercises)

enantiomer

- 6.2: Stereoisomers

energy

- 10.2: ATP- the Universal Energy Currency

Energy Metabolism

- 10: Metabolism

enzymes

- 8: Proteins
- 8.8: Proteins (Summary)

epimer

- 6.2: Stereoisomers

ester

- 4: Organic Nomenclature - Carbonyl-Containing Compounds

- 4.5: Esters
- 4.6: Physical Properties of Esters
- 4.E: Carbonyl-Containing Compounds (Exercises)
- 4.S: Carbonyl-Containing Compounds (Summary)
- 5.4: Hydrolysis Reactions

esterification

- 5.3: Condensation Reactions
- 5.E: Organic Chemical Reactions (Exercises)
- 5.S: Organic Chemical Reactions (Summary)

ether

- 3: Organic Nomenclature - Functional Groups
- 3.4: Ethers
- 3.E: Functional Groups (Exercises)
- 3.S: Functional Groups (Summary)

F

fats

- 7: Lipids
- 7.2: Triglycerides
- 10: Metabolism
- 10.3: Stage I of Catabolism
- 10.7: Stage II of Lipid Catabolism

fatty acids

- 7: Lipids
- 7.1: Fatty Acids
- 7.S: Lipids (Summary)

fermentation

- 10.4: Overview of Stage II of Catabolism

frame shift

- 9.5: Mutations and Genetic Diseases

fructose

- 6: Carbohydrates
- 6.4: Important Monosaccharides
- 6.E: Carbohydrates (Exercises)
- 6.S: Carbohydrates (Summary)

functional group

- 3: Organic Nomenclature - Functional Groups
- 3.1: Functional Groups
- 3.2: Alcohols
- 3.E: Functional Groups (Exercises)
- 3.S: Functional Groups (Summary)
- 4: Organic Nomenclature - Carbonyl-Containing Compounds

G

galactose

- 6: Carbohydrates
- 6.4: Important Monosaccharides
- 6.E: Carbohydrates (Exercises)
- 6.S: Carbohydrates (Summary)

genetic code

- 9.4: RNA Translation and Protein Synthesis
- 9.E: Nucleic Acids (Exercises)
- 9.S: Nucleic Acids (Summary)

Geometric Isomerism

- 2: Organic Nomenclature - Unsaturated Hydrocarbons
- 2.2: Geometric Isomers
- 2.E: Unsaturated Hydrocarbons (Exercises)
- 2.S: Unsaturated Hydrocarbons (Summary)

glucose

- 6: Carbohydrates
- 6.4: Important Monosaccharides
- 6.E: Carbohydrates (Exercises)
- 6.S: Carbohydrates (Summary)

glycogen

- 6.8: Polysaccharides

glycolipid

- 7: Lipids
- 7.3: Phospholipids
- 7.E: Lipids (Exercises)
- 7.S: Lipids (Summary)

glycolysis

- 10: Metabolism
- 10.4: Overview of Stage II of Catabolism
- 10.6: Stage II of Carbohydrate Catabolism
- 10.9: Metabolism (Exercises)

glycosidic bond

- 6.6: Disaccharides

H

haloalkane

- 1.5: Halogenated Alkanes

halogen

- 1.5: Halogenated Alkanes

halogenation

- 5.2: Alkene Reactions
- 5.E: Organic Chemical Reactions (Exercises)
- 5.S: Organic Chemical Reactions (Summary)

heteroatom

- 3: Organic Nomenclature - Functional Groups
- 3.E: Functional Groups (Exercises)
- 3.S: Functional Groups (Summary)

hexose

- 6.3: Classifying Monosaccharides
- 6.4: Important Monosaccharides

hydration

- 5.2: Alkene Reactions
- 5.E: Organic Chemical Reactions (Exercises)
- 5.S: Organic Chemical Reactions (Summary)

hydrocarbons

2.S: Unsaturated Hydrocarbons (Summary)

hydrogenation

5.2: Alkene Reactions

5.E: Organic Chemical Reactions (Exercises)

5.S: Organic Chemical Reactions (Summary)

hydrohalogenation

5.2: Alkene Reactions

5.E: Organic Chemical Reactions (Exercises)

5.S: Organic Chemical Reactions (Summary)

hydrolysis

5: Organic Chemical Reactions

5.4: Hydrolysis Reactions

5.E: Organic Chemical Reactions (Exercises)

5.S: Organic Chemical Reactions (Summary)

10.3: Stage I of Catabolism

hydroxyl

3.2: Alcohols

I

induced fit

8.5: Enzymes - Biological Catalysts

inhibitor

8.7: Enzyme Inhibition

8.8: Proteins (Summary)

8.9: E- Proteins (Exercises)

insertion

9.5: Mutations and Genetic Diseases

irreversible inhibitor

8.7: Enzyme Inhibition

isoelectric point

8.2: Reactions of Amino Acids

isomers

6.2: Stereoisomers

isotonic

7.4: Osmosis and Diffusion

IUPAC

1.4: Alkane IUPAC Nomenclature

1.5: Halogenated Alkanes

1.6: Cycloalkanes

2.1: Alkenes - Structures and Names

2.3: Alkynes - Structures and Names

2.4: Aromatic Compounds

2.5: Aromatics - Structure and Names

3.2: Alcohols

3.E: Functional Groups (Exercises)

3.S: Functional Groups (Summary)

4.1: Aldehydes and Ketones

4.3: Carboxylic Acids

4.5: Esters

4.7: Amides

4.E: Carbonyl-Containing Compounds (Exercises)

4.S: Carbonyl-Containing Compounds (Summary)

K

ketone

4: Organic Nomenclature - Carbonyl-Containing Compounds

4.1: Aldehydes and Ketones

4.2: Properties of Aldehydes and Ketones

4.E: Carbonyl-Containing Compounds (Exercises)

4.S: Carbonyl-Containing Compounds (Summary)

ketose

6.1: Overview of Carbohydrates

6.3: Classifying Monosaccharides

L

L sugar

6.3: Classifying Monosaccharides

lactose

6.6: Disaccharides

lipids

7: Lipids

7.E: Lipids (Exercises)

7.S: Lipids (Summary)

10.7: Stage II of Lipid Catabolism

lock and key

8.5: Enzymes - Biological Catalysts

M

maltose

6.6: Disaccharides

membrane lipids

7.3: Phospholipids

metabolic pathways

10.4: Overview of Stage II of Catabolism

metabolism

10: Metabolism

10.1: Prelude to Metabolism

10.9: Metabolism (Exercises)

10.10: Metabolism (Summary)

molecular formula

1.2: Structures of Organic Compounds

Monosaccharide

6: Carbohydrates

6.1: Overview of Carbohydrates

6.3: Classifying Monosaccharides

6.4: Important Monosaccharides

6.5: Reactions of Monosaccharides

6.E: Carbohydrates (Exercises)

6.S: Carbohydrates (Summary)

10.6: Stage II of Carbohydrate Catabolism

mRNA

9.3: DNA Replication and Transcription

9.4: RNA Translation and Protein Synthesis

9.E: Nucleic Acids (Exercises)

9.S: Nucleic Acids (Summary)

mutagen

9.5: Mutations and Genetic Diseases

mutation

9.5: Mutations and Genetic Diseases

N

Nucleic acid

9: Nucleic Acids

9.2: Nucleic Acid Structure

9.E: Nucleic Acids (Exercises)

9.S: Nucleic Acids (Summary)

nucleoside

9.1: Nucleotides

9.E: Nucleic Acids (Exercises)

9.S: Nucleic Acids (Summary)

nucleotide

9: Nucleic Acids

9.1: Nucleotides

9.2: Nucleic Acid Structure

9.E: Nucleic Acids (Exercises)

9.S: Nucleic Acids (Summary)

10.2: ATP- the Universal Energy Currency

O

oils

7: Lipids

7.2: Triglycerides

oligosaccharide

6: Carbohydrates

6.1: Overview of Carbohydrates

6.7: Oligosaccharides

6.E: Carbohydrates (Exercises)

6.S: Carbohydrates (Summary)

omega

7.1: Fatty Acids

optimum pH

8.6: Enzyme Activity

optimum temperature

8.6: Enzyme Activity

organic

1: CHEM 1151 Organic Review

1.1: Organic Chemistry

2: Organic Nomenclature - Unsaturated

Hydrocarbons

3: Organic Nomenclature - Functional Groups

3.1: Functional Groups

3.2: Alcohols

4: Organic Nomenclature - Carbonyl-Containing

Compounds

organic reactions

5: Organic Chemical Reactions

osmosis

7: Lipids

7.4: Osmosis and Diffusion

oxidation

5: Organic Chemical Reactions

5.1: Organic Redox Reactions

5.E: Organic Chemical Reactions (Exercises)

5.S: Organic Chemical Reactions (Summary)

6.5: Reactions of Monosaccharides

oxidative phosphorylation

10.5: Stage III of Catabolism

P

pentose

9.1: Nucleotides

peptide

8: Proteins

8.2: Reactions of Amino Acids

8.3: Peptides

8.4: Proteins

8.8: Proteins (Summary)

8.9: E- Proteins (Exercises)

peptide bond

8.3: Peptides

phenol

3.3: Phenols

3.E: Functional Groups (Exercises)

3.S: Functional Groups (Summary)

phenyl

2.4: Aromatic Compounds

2.5: Aromatics - Structure and Names

2.E: Unsaturated Hydrocarbons (Exercises)

phospholipid

7: Lipids

7.3: Phospholipids

7.E: Lipids (Exercises)

7.S: Lipids (Summary)

photosynthesis

10.1: Prelude to Metabolism

polymerization

5.2: Alkene Reactions

polysaccharide

6: Carbohydrates

6.1: Overview of Carbohydrates

6.8: Polysaccharides

6.E: Carbohydrates (Exercises)

6.S: Carbohydrates (Summary)

protein

- 8: Proteins
- 8.2: Reactions of Amino Acids
- 8.3: Peptides
- 8.4: Proteins
- 8.8: Proteins (Summary)
- 8.9: E- Proteins (Exercises)
- 10: Metabolism
- 10.3: Stage I of Catabolism
- 10.8: Stage II of Protein Catabolism

protein synthesis

- 9: Nucleic Acids
- 9.3: DNA Replication and Transcription
- 9.4: RNA Translation and Protein Synthesis
- 9.E: Nucleic Acids (Exercises)
- 9.S: Nucleic Acids (Summary)

purine

- 9.1: Nucleotides

pyrimidine

- 9.1: Nucleotides

Pyruvate

- 10.6: Stage II of Carbohydrate Catabolism

R

recombinant DNA

- 9.6: Viruses

redox

- 5: Organic Chemical Reactions
- 5.1: Organic Redox Reactions
- 5.E: Organic Chemical Reactions (Exercises)
- 5.S: Organic Chemical Reactions (Summary)
- 6.5: Reactions of Monosaccharides

reducing sugar

- 6.E: Carbohydrates (Exercises)

reduction

- 5: Organic Chemical Reactions
- 5.1: Organic Redox Reactions
- 5.E: Organic Chemical Reactions (Exercises)
- 5.S: Organic Chemical Reactions (Summary)
- 6.5: Reactions of Monosaccharides

replication

- 9.3: DNA Replication and Transcription

respiration

- 10.1: Prelude to Metabolism

restricted rotation

- 2.2: Geometric Isomers

reverse transcriptase

- 9.6: Viruses

reversible inhibitor

- 8.7: Enzyme Inhibition

RNA

- 9: Nucleic Acids
- 9.2: Nucleic Acid Structure
- 9.3: DNA Replication and Transcription
- 9.4: RNA Translation and Protein Synthesis
- 9.E: Nucleic Acids (Exercises)
- 9.S: Nucleic Acids (Summary)

rRNA

- 9.4: RNA Translation and Protein Synthesis
- 9.E: Nucleic Acids (Exercises)
- 9.S: Nucleic Acids (Summary)

S

saponification

- 5.4: Hydrolysis Reactions
- 5.E: Organic Chemical Reactions (Exercises)
- 5.S: Organic Chemical Reactions (Summary)

Sex Hormones

- 7.5: Steroids

skeletal structure

- 1.2: Structures of Organic Compounds

solubility

- 4.2: Properties of Aldehydes and Ketones
- 4.4: Physical Properties of Carboxylic Acids
- 4.6: Physical Properties of Esters
- 4.8: Physical Properties of Amides

sphingolipid

- 7.3: Phospholipids
- 7.S: Lipids (Summary)

starch

- 6.8: Polysaccharides

steady state

- 8.6: Enzyme Activity
- 8.9: E- Proteins (Exercises)

stereoisomer

- 6.2: Stereoisomers

steroid

- 7: Lipids
- 7.5: Steroids
- 7.E: Lipids (Exercises)
- 7.S: Lipids (Summary)

structural formula

- 1.2: Structures of Organic Compounds

substituent

- 1.4: Alkane IUPAC Nomenclature

substitution

- 9.5: Mutations and Genetic Diseases

sucrose

- 6.6: Disaccharides

sugar acid

- 6.5: Reactions of Monosaccharides

sugar alcohol

- 6.5: Reactions of Monosaccharides

sulfhydryl

- 3.5: Thiols

T

thiol

- 3: Organic Nomenclature - Functional Groups
- 3.5: Thiols
- 3.E: Functional Groups (Exercises)
- 3.S: Functional Groups (Summary)

trace (matrix)

- 7.2: Triglycerides

Transamination

- 10.8: Stage II of Protein Catabolism

transcription

- 9.3: DNA Replication and Transcription
- 9.E: Nucleic Acids (Exercises)
- 9.S: Nucleic Acids (Summary)

translation

- 9.4: RNA Translation and Protein Synthesis
- 9.E: Nucleic Acids (Exercises)
- 9.S: Nucleic Acids (Summary)

triglyceride

- 7: Lipids
- 7.2: Triglycerides
- 7.E: Lipids (Exercises)

tRNA

- 9.4: RNA Translation and Protein Synthesis
- 9.E: Nucleic Acids (Exercises)
- 9.S: Nucleic Acids (Summary)

U

unsaturated

- 2: Organic Nomenclature - Unsaturated Hydrocarbons
- 2.1: Alkenes - Structures and Names
- 2.3: Alkynes - Structures and Names
- 2.E: Unsaturated Hydrocarbons (Exercises)
- 2.S: Unsaturated Hydrocarbons (Summary)

V

virus

- 9.6: Viruses

W

Waxes

- 7.1: Fatty Acids
- 7.E: Lipids (Exercises)
- 7.S: Lipids (Summary)

weak acid

- 4.3: Carboxylic Acids
- 4.4: Physical Properties of Carboxylic Acids

weak base

- 3.6: Amines - Structures and Names

Z

zwitterion

- 8: Proteins
- 8.1: Amino Acids
- 8.8: Proteins (Summary)
- 8.9: E- Proteins (Exercises)