

Chem2_Organic.pdf

Page 1 – Organic Chemistry Basics

1. What is an alkane?
2. Draw the structure of methane (CH_4).
3. What is an alkene?
4. Name the functional group in ethanol.
5. Define aromatic compound.
6. What is isomerism?
7. Give an example of an alkyne.
8. Name the parent chain in 2-methylpropane.
9. What is a hydrocarbon?
10. Define homologous series.

Page 2 – Functional Groups

1. Identify the carboxyl group.
2. What is an ether?
3. Structure of a ketone.
4. What is an ester?
5. Name a compound with an amine group.
6. Define aldehyde.
7. What is a nitrile?

8. Structure of phenol.
9. Identify the functional group in acetone.
10. What is a thiol?

Page 3 – Nomenclature

1. Name $\text{CH}_3\text{CH}_2\text{OH}$.
2. Name CH_3COOH .
3. What is the IUPAC name for isopropanol?
4. Name C_6H_6 .
5. What is the prefix for a 3-carbon chain?
6. Give the IUPAC name for acetylene.
7. Name the functional group in butanone.
8. Name the following: $\text{CH}_3\text{CH}_2\text{CHO}$.
9. What is the common name for ethene?
10. Name a primary alcohol.

Page 4 – Organic Reactions I

1. What is a substitution reaction?
2. What is an addition reaction?
3. What is elimination reaction?
4. What is hydrolysis?
5. Example of esterification.
6. What is oxidation of alcohols?

7. Write the hydration of ethene.
8. What is polymerization?
9. Define cracking.
10. What is saponification?

Page 5 – Organic Reactions II

1. What is the product of hydrogenation of alkenes?
2. What happens in halogenation?
3. What is dehydrohalogenation?
4. Example of nitration of benzene.
5. What is Friedel–Crafts alkylation?
6. Define alkylation.
7. What is acylation?
8. Name a condensation reaction.
9. What is Markovnikov's rule?
10. What is anti-Markovnikov addition?

Page 6 – Stereochemistry & Mechanisms

1. Define chirality.
2. What is an enantiomer?
3. What is optical activity?
4. What is a racemic mixture?
5. What is SN1 reaction?

6. Describe SN2 mechanism.
7. What is a leaving group?
8. What is E1 elimination?
9. What is E2 elimination?
10. Give an example of a stereoisomer.

Page 7 – Biochemistry

1. What are amino acids?
2. Define peptide bond.
3. What is a protein?
4. Structure of glucose.
5. What is a polysaccharide?
6. What is the function of enzymes?
7. Name a lipid.
8. What is ATP?
9. What is a nucleic acid?
10. What is denaturation?

Page 8 – Acid-Base Chemistry

1. What is a buffer solution?
2. What is the pH of a 0.001 M HCl solution?
3. Write the dissociation of acetic acid in water.
4. What is a weak acid?

5. What is a conjugate base?
6. What is the Henderson–Hasselbalch equation?
7. What is titration curve?
8. What is a zwitterion?
9. What is the isoelectric point?
10. Define amphiprotic.

Page 9 – Analytical Techniques

1. What is chromatography?
2. What is NMR spectroscopy?
3. What is mass spectrometry?
4. What is IR spectroscopy?
5. What is TLC?
6. What is electrophoresis?
7. What is UV-Vis spectroscopy?
8. Define retention factor.
9. What is a mobile phase?
10. What is a stationary phase?

Page 10 – Review & Lab

1. State a safety rule for organic solvents.
2. What is distillation?
3. How is a melting point determined?

4. Define recrystallization.
5. What is the purpose of extraction?
6. What is green chemistry?
7. Name a renewable resource for organic synthesis.
8. What is an organic reagent?
9. Name an example of organic pollutant.
10. What is TLC used for in lab?