



INDIAN SCHOOL MUSCAT
SENIOR SECTION
DEPARTMENT OF CHEMISTRY
CLASS XII
CHAPTER- HALOALKANES AND HALOARENES
WORKSHEET- 2

1. A solution of KOH hydrolyses $\text{CH}_3\text{CHClCH}_2\text{CH}_3$ and $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{Cl}$. Which one of these is more easily hydrolyzed? (2010)
2. Draw the structure of the following compound:
4- Bromo-3-methylpent-2-ene (2010)
3. Write a chemical test to distinguish between:
 - a) Chlorobenzene and Benzyl chloride
 - b) Chloroform and carbon tetrachloride (2011)
4. An optically active compound having molecular formula $\text{C}_7\text{H}_{15}\text{Br}$ reacts with aq. KOH to give a racemic mixture of products. Write the mechanism involved for the reaction.
5. Arrange in increasing order of property mentioned giving reasons:
 - a) Ethanol and ethyl chloride (solubility in water)
 - b) 2-Bromo-2-methylbutane, 1-bromopentane, 2-bromopentane (reactivity towards $\text{S}_{\text{N}}2$)
6. Explain why?
 - a) Dipole moment of Chlorobenzene is lower than that of Cyclohexylchloride.
 - b) Alkyl halides, though polar are immiscible with water.
 - c) p-Dichlorobenzene has higher melting point and lower solubility than those of o and m-isomers.
7. How would you differentiate between $\text{S}_{\text{N}}1$ and $\text{S}_{\text{N}}2$ mechanisms of substitution reactions? Give one example of each. (2010)
8. Write short note on the following:
 - a) Sandmeyer reaction
 - b) Finkelstein reaction
 - c) Wurtz reaction.
9. What happens when
 - a) Ethyl chloride is treated with NaI in the presence of acetone
 - b) Chlorobenzene is treated with Na metal in the presence of dry ether
 - c) Methyl chloride is treated with KNO_2 ?Write chemical equations in support of your answer. (2015)

10. Give the IUPAC name of the following:

- a) a) $(\text{CH}_3)_3\text{CCH}_2\text{CH}(\text{Br})\text{C}_6\text{H}_5$ d) $\text{CHF}_2\text{CBrClF}$
b) b) $\text{CH}_3\text{C}(\text{C}_2\text{H}_5)_2\text{CH}_2\text{Br}$ e) $(\text{CH}_3)_3\text{CCH}=\text{CClC}_6\text{H}_5$
c) c) $\text{CH}_3\text{CH}=\text{C}(\text{Cl})\text{CH}_2\text{CH}(\text{CH}_3)_2$

11. Give reasons:

- a) Alkyl halides have higher boiling points than corresponding hydrocarbons.
b) Benzylic and allylic halides follow $\text{S}_{\text{N}}1$ mechanism.
c) Halogens are deactivating but 'o, p' directive.
d) Presence of electron withdrawing groups on benzene ring increases tendency of $\text{S}_{\text{N}}1$ reaction.
e) Haloalkanes are more reactive than haloarenes towards nucleophilic substitution reactions.

12. Bring about the following conversions:

- a) Benzene to 4-bromonitrobenzene
b) Benzyl alcohol to 2-phenylethanoic acid
c) Toluene to benzylalcohol
d) Propene to 1-propanol
e) Chlorobenzene to toluene
