



INDIAN SCHOOL NIZWA - WORKSHEET

CHEMISTRY

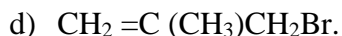
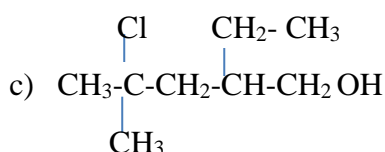
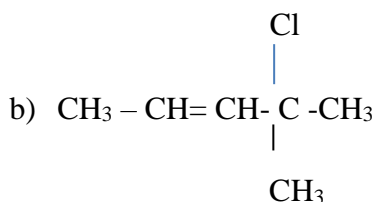
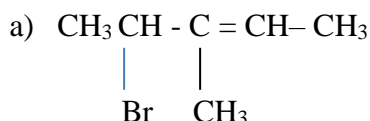
CH: 10 HALOALKANES AND HALOARENES

Name: _____ Date: _____ Class: XII Sec: _____

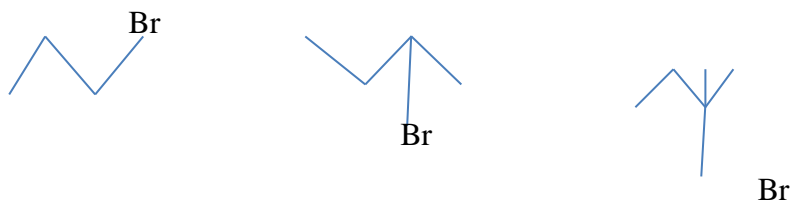
I

Answer the following

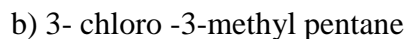
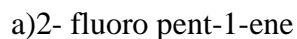
1. Write the IUPAC names of the following.



II Which of the following compound react faster by $\text{S}_{\text{N}}2$ mechanism? Why? a)



III Identify and indicate the presence of chirality if any in the molecule.



IV Give reasons for the following.

i. Racemisation occurs in $\text{S}_{\text{N}}1$ reactions.

- ii Haloarenes cannot be prepared from alcohols.
- iii. Con HNO_3 or HIO_4 is used for the preparation of iodobenzene.
- iv Branched chain molecules have the lowest boiling point among isomeric haloalkanes
- v. Aryl halides are extremely less reactive towards nucleophilic substitution reactions.
- vi Benzylic and allylic halides prefer $\text{S}_{\text{N}}1$ mechanism.
- vii Neopentyl bromide undergo nucleophilic substitution reactions very slowly.
- viii The presence of $-\text{NO}_2$ group at ortho and para position increases the reactivity of haloarenes towards nucleophilic substitution reactions.
- ix p- dichlorobenzene has higher melting point than that of ortho or meta isomer.
- x Thionyl chloride is preferred for preparing alkyl chloride from alcohols.
- xi Out of 2- bromo pentane, 2 bromo 2-methyl butane and 1- bromo pentane which compound is most reactive to elimination reaction and why?
- xii) Chlorine is ortho/para directing in electrophilic aromatic substitution reactions, though chlorine is an electron withdrawing group.
- xiii) Racemic mixture is optically inactive
- xiv) Allyl chloride is hydrolysed more readily than n-propyl chloride.

OR

Allyl chlorides are more reactive towards nucleophilic substitution.

V

Assertion – Reason Questions

1. Assertion: Boiling points of alkyl halides decrease in the order
 $\text{R-I} > \text{R-Br} > \text{R-Cl} > \text{R-F}$
 Reason: Van der Waals forces decrease with increase in the size of halogen atom.
2. Assertion: Presence of nitro group at ortho or para position makes nucleophilic substitution in chlorobenzene easier.
 Reason: Nitro group donates electrons to stabilize the intermediate ion formed by the addition of the incoming nucleophile.
3. Assertion: Propene reacts with HBr to form 2-bromopropane.
 Reason: The intermediate carbocation formed will be secondary since it is more stable than primary.
4. Assertion: $\text{S}_{\text{N}}2$ mechanism leads to racemisation.
 Reason: The incoming nucleophile attacks the compounds from the side opposite to the outgoing nucleophile in $\text{S}_{\text{N}}2$ mechanism.