

## Class - XII

### Halo alkanes and Halo arenes

1. Explain why alkyl halides are generally not prepared in the laboratory by free radical halogenation of alkanes.
2. Explain why chlorination of n-butane in presence of light at 298K gives a mixture of 72% of 2-chlorobutane and 28% of 1-chlorobutane.
3. Wurtz reaction fails in case of tert-alkyl halides. Explain.
4. How will you convert propene to 1-iodopropane?
5.  $\text{CHF}_3$  is less acidic than  $\text{CHCl}_3$ , Explain.
6. Differentiate between chiral and achiral molecules.
7. What are enantiomers? Draw the structures of the possible enantiomers of 3-methylpent-1-ene.
8. Distinguish between enantiomers and diastereomers.
9. Distinguish between racemic mixture and meso compounds.
10. Differentiate between retention and inversion.
11. Optically active 2-iodobutane on treatment with NaI in acetone gives a product which does not show optical activity. Explain.
12. p-chloronitrobenzene undergoes nucleophilic substitution faster than chlorobenzene. Explain giving the resonating structures as well.
13. Allyl chloride can be distinguished from vinyl chloride by NaOH followed by silver nitrate test. comment.
14. Although chlorine is an electron withdrawing group, yet it is ortho, para directing in electrophilic aromatic substitution reactions. Why?
15. Explain why the dipole moment of chlorobenzene is lower than that of cyclohexyl chloride.
16. Alkyl halides though polar are immiscible with water, why?
17. Grignards reagent should be prepared under anhydrous condition, why?
18. p-dichlorobenzene has higher melting point and lower solubility than those of o- and m-isomers. discuss.
19. convert the following molecules
  - a. propene to propan-1-ol
  - b. Ethanol to but-2-yne
  - c. Benzene to 4-bromonitrobenzene
  - d. But-1-ene to n-Butyl iodide
  - e. 2-Chloropropane to 1-Bromopropane
  - f. Chlorobenzene to p-nitrophenol