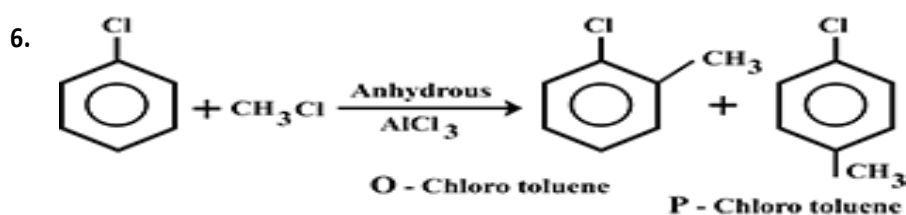


CHAPTER HALOALKANE AND HALOARENES

(ONE MARK MCQ TYPE QUESTIONS)

- Name the reaction : - $\text{R-OH} + \text{HCl} \rightarrow \text{R-Cl} + \text{H}_2\text{O}$
(a) Swartz Reaction (b) Darzen's Method
(c) Groove's Process (d) Peroxide effect
- Find the correct order of melting/boiling point of these arylhalides:-
(a) aryl iodide > aryl bromide > aryl chloride
(b) aryl bromide > aryl iodide > aryl chloride
(c) aryl chloride > aryl bromide > aryl iodide
(d) aryl iodide > aryl chloride > aryl bromide
- Haloarenes are insoluble in water but are soluble in benzene because:
(a) they cannot form hydrogen bond with water
(b) they can form hydrogen bond with water
(c) intermolecular forces of haloarenes and benzene are of different nature
(d) all options are incorrect
- Hybridization of carbon atom carrying halogen atom in haloarenes is
(a) sp (b) sp^3 (c) sp^2 (d) dsp^2
- Haloarenes are less reactive than haloalkanes due to
(a) Resonance Effect
(b) Difference in hybridisation state of carbon atoms
(c) both a and b
(d) None of these

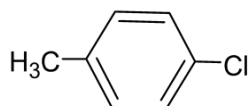


The above reaction is

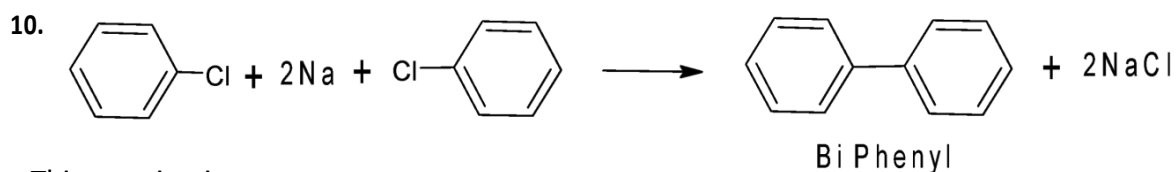
- (a) Friedel Craft's Alkylation (c) Fries Rearrangement
(b) Friedel Craft's Acylation (d) Gattermann Reaction
- Chlorobenzene can be prepared from Benzene diazoniumchloride by
(a) Kolbe's Schmitt Reaction (c) Hell -Vohlard Reaction
(b) Hunsdiecker Reaction (d) Gattermann Reaction

8. The reaction of iodobenzene with copper powder in a sealed tube to give diphenyl is called:
 (a) Ullmann reaction (c) Gattermann reaction
 (b) Hunsdiecker reaction (d) Fittig reaction

9. The IUPAC name of the following is



- (a) 1-Chloro-4-methylbenzene (c) 1-Methyl-4-chlorobenzene
 (b) 1-Chlorotoluene (d) 4-Methylchlorobenzene



This reaction is

- (a) Wurtz Reaction (c) Wurtz Fittig Reaction
 (b) Fittig Reaction (d) Ullmann Reaction
11. The isomers which can be interconverted through rotation around a single bond are:
 (a) Diastereomers (c) Enantiomers
 (b) Conformers (d) Position isomers
12. The carbon which is bonded to four different atoms or group of atoms is:
 (a) Chiral (c) Both a and b
 (b) benzene (d) None of the above
13. The process of separation of a racemic mixture into d- or l- forms is called:
 (a) Evaporation (c) Resolution
 (b) Chromatography (d) Distillation
14. Wurtz reaction involves
 (a) Two molecules of arylhalide
 (b) Two molecules of alkylhalide
 (c) One molecule each of alkyl and arylhalides
 (d) One molecule each of alkyl halide and aromatic hydrocarbon
15. The C-X bond is strongest in
 (a) CH₃Cl (c) CH₃F
 (b) CH₃Br (d) CH₃I
16. Alkyl halides react with KCN to give _____ as the major product
 (a) isocyanide (c) Amines
 (b) cyanides (d) Nitro compounds

Answers

- | | | | | |
|---------|---------|---------|---------|---------|
| 1. (c) | 2. (a) | 3. (a) | 4. (c) | 5. (c) |
| 6. (a) | 7. (d) | 8. (a) | 9. (a) | 10. (b) |
| 11. (b) | 12. (a) | 13. (c) | 14. (b) | 15. (c) |
| 16. (b) | | | | |

(FIVE MARK QUESTIONS)

- Define the following terms : (i) Enantiomers (ii) Racemic mixture (b) Why is chlorobenzene resistant to nucleophilic substitution reaction?
- Give reasons: (i) **C – Cl** bond length in chlorobenzene is shorter than **C – Cl** bond length in **CH₃ – Cl** (ii) The dipole moment of chlorobenzene is lower than that of cyclohexyl chloride. (iii) **SN¹** reactions are accompanied by racemization in optically active alkyl halides.
- How would you bring about the following conversions : (i) Propene to 2-bromopropane (ii) Bromoethane to propanoic acid (iii) 1-chloropropane to 1-propanol (iv) Ethanol to chloroethane (v) 1-iodopropane to propene
- What happens when : (Give chemical reactions) (i) Cyclohexanol is treated with thionyl chloride (ii) p-hydroxybenzyl alcohol is heated with HCl. (iii) Ethyl bromide is refluxed with NaI in acetone. (iv) Ethyl bromide is treated with mercurous fluoride.
- Explain
 - Swarts reaction
 - Hunsdicker reaction
 - Wurtz Fittig reaction.
 - Friedel Craft Acylation
 - Friedel Craft Alkylation
- Difference between Haloalkane and Haloarenes.
 - What is Iodoform Test ?
- (a) Define
 - Specific rotation
 - Racemic Mixture
 - Optical Activity:
 (b) Give two uses of chloroform.
- Why treatment of alkyl halide with **AgNO₂** form Nitro alkane and with **KNO₂** alkyl Nitrate
 - Reaction of an alkyl halide with KCN and AgCN in different ways giving different products ? Explain.
- The treatment of alkyl chlorides with aqueous KOH leads to the formation of alcohols but in presence of alcoholic KOH, alkenes are major products. Explain.
- Difference between **SN¹** and **SN²** reaction ?
 - Difference between Haloalkane and Haloarenes ?
 - Give the use of Iodoform.

- 11.** (i) Explain SN^2 mechanism ?
(ii) Explain SN_1 mechanism ? (iii) Write the use of Freons.
- 12.** Explain the following reaction : (i) Fittig reaction (ii) Sulphonation of haloarene
(iii) Hunsdicker reaction (iv) Nitration of haloarene (v) Wurtz reaction
- 13.** Explain the following reaction :
(i) Balz Schiemann reaction (ii) Sulphonation of Haloarenes
(iii) Sandmeyer's reaction (iv) Finckelstein reaction. (v) Ullman reaction
- 14.** Why aryl halide(haloarenes) are less reactive than alkyl halide(haloalkanes).