Haloalkanes and Haloarenes

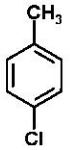
1.Which of the following is most reactive towards nucleophilic substitution reaction?
(a) C_6H_5Cl
(b) $CH_2=CHCl$
(c) $ClCH_2CH=CH_2$
(d) $CH_3CH=CHCl$
Answer: (c) $ClCH_2CH=CH_2$

2.The most reactive nucleophile among the following is
(a) CH_3O^-
(b) $C_6H_5O^-$
(c) $(CH_3)_2CHO^-$
(d) $(CH_3)_3CO^-$
Answer:(a) CH_3O^-

3.The main difference between C – X bond of a haloalkane and a haloarene is
(a) C – X bond in haloalkanes is shorter than haloarenes
(b) In haloalkanes the C attached to halogen in C – X bond is sp^3 hybridised while in haloarenes it is sp^2 hybridised.
(c) C – X bond in haloalkanes acquires a double bond character due to higher electronegativity of X than haloarenes.
(d) haloalkanes are less reactive than haloarenes due to difficulty in C – X cleavage in haloalkanes.
Answer: (b) In haloalkanes the C attached to halogen in C – X bond is sp^3 hybridised while in haloarenes it is sp^2 hybridised.

4.Which of the following is a primary halide?
(a) Isopropyl iodide
(b) Secondary butyl iodide
(c) Tertiary butyl iodide
(d) Neohexyl chloride
Answer: (d) Neohexyl chloride

5.Which is the correct IUPAC name for



(a) Methylchlorobenzene
(b) Toluene
(c) 1-Chloro-4-methylbenzene
(d) 1-Methyl-4-chlorobenzene
Answer: (c) 1-Chloro-4-methylbenzene

6.Aryl halides are less reactive towards nucleophilic substitution reactions as compared to alkyl halides due to
(a) formation of a less stable carbonium ion in aryl halides
(b) resonance stabilization in aryl halides
(c) presence of double bonds in alkyl halides
(d) inductive effect in aryl halides
Answer:(b) resonance stabilization in aryl halides

7.p-dichlorobenzene has higher melting point than its o- and m- isomers. Why?
(a) m- dichlorobenzene is more polar than o-isomer
(b) p-isomer has a symmetrical crystalline structure
(c) boiling point of o- isomer is more than p-isomers
(d) All of these are correct
Answer: (b) p-isomer has a symmetrical crystalline structure

8.Chlorobenzene on reaction with NaOH at 300K followed by acidic hydrolysis produces
(a) Phenol
(b) Sodium phenoxide
(c) Benzaldehyde
(d) Benzoic acid
Answer: (a) Phenol

9.Which of the following is most reactive towards aqueous NaOH?
(a) C_6H_5Cl
(b) $C_6H_5CH_2Cl$
(c) C_6H_5Br
(d) BrC_6H_4Br
Answer:(b) $C_6H_5CH_2Cl$

10. Which of the following haloalkanes is optically active?
(a) 1-Chloropropane
(b) 1-Bromopropane
(c) 1-Iodopropane
(d) 1-Fluoropropane
Answer: (b) 1-Bromopropane