

Halogen Containing compounds



1. Preparation of alkyl halides in laboratory is least preferred by
 (a) Halide exchange
 (b) Direct halogenation of alkanes
 (c) Treatment of alcohols
 (d) Addition of hydrogen halides to alkenes
2. An alkyl halide may be converted into an alcohol by
 [EAMCET 1980; CBSE PMT 1997; BHU 1999; AIIMS 2001]
 (a) Addition (b) Substitution
 (c) Dehydrohalogenation (d) Elimination
3. The C-Cl bond in chlorobenzene as compared with C-Cl bond in methyl chloride is [MP PMT 1995]
 (a) Longer and weaker
 (b) Shorter and weaker
 (c) Shorter and stronger
 (d) Longer and stronger
4. A salt solution is treated with chloroform drops. Then it is shaken with chlorine water. Chloroform layer becomes violet. Solution contains [CPMT 1982]
 (a) NO_2^- ion (b) NO_3^- ion
 (c) Br^- ion (d) I^- ion
5. The following reaction belongs to
 $(CH_3)_3C-Br \xrightarrow{H_2O} (CH_3)_3C-OH$ [AIEEE 2002]
 (a) Elimination reaction (b) Substitution reaction
 (c) Free radical reaction (d) Displacement reaction
6. The order of reactivities of methyl halides in the formation of Grignard reagent is [KCET 2003]
 (a) $CH_3I > CH_3Br > CH_3Cl$
 (b) $CH_3Cl > CH_3Br > CH_3I$
 (c) $CH_3Br > CH_3Cl > CH_3I$
 (d) $CH_3Br > CH_3I > CH_3Cl$
7. Identify Z in the following series
 $C_2H_5I \xrightarrow{Alco. KOH} X \xrightarrow{Br_2} Y \xrightarrow{KCN} Z$
 [AIIMS 1983; AFMC 1998; MP PET 1997]
 (a) CH_3CH_2CN (b) $\begin{array}{c} CH_2CN \\ | \\ CH_2CN \end{array}$
- (c) $BrCH_2-CH_2CN$ (d) $BrCH=CHCN$
8. The total number of stereoisomeric forms of $C_6H_6Cl_6$ known is
 (a) 6 (b) 7
 (c) 8 (d) None of these
9. The correct order of C-X bond polarity is [RPMT 2000]
 (a) $CH_3Br > CH_3Cl > CH_3I$
 (b) $CH_3I > CH_3Br > CH_3Cl$
 (c) $CH_3Cl > CH_3Br > CH_3I$
 (d) $CH_3Cl > CH_3I > CH_3Br$
10. The order of reactivities of the following alkyl halides for a SN^2 reaction is [IIT-JEE (Screening) 2000]
 (a) $RF > RCl > RBr > RI$
 (b) $RF > RBr > RCl > RI$
 (c) $RCl > RBr > RF > RI$
 (d) $RI > RBr > RCl > RF$
11. Which of the following reactions doesn't give benzene [RPMT 2003]
 (a) $C_6H_5N_2Cl \xrightarrow[H_2O]{boiling}$
 (b) $C_6H_5N_2Cl \xrightarrow[\Delta]{C_2H_5OH}$
 (c) $C_6H_5N_2Cl + H_3PO_2 + H_2O \longrightarrow$
 (d) All of these
12. Benzene hexachloride is prepared from benzene and chlorine in sunlight by
 (a) Substitution reaction (b) Elimination reaction
 (c) Addition reaction (d) Rearrangement
13. Carbon-halogen bond is strongest among the following [MP PMT 1995]
 (a) CH_3Cl (b) CH_3Br
 (c) CH_3F (d) CH_3I
14. Which of these do not undergo Wurtz reaction
 (a) C_2H_5F (b) C_2H_5Br
 (c) C_2H_5Cl (d) C_2H_5I
15. When ethyl bromide reacts with sodium acetylide the main product is [Pb. CET 2002]
 (a) 1-butane (b) 1-butene
 (c) 1-butyne (d) 2-butene

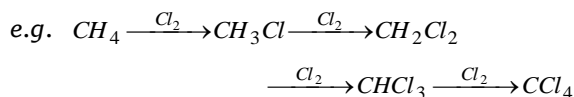


16. C_2H_5I and Ag_2O reacts to produce [Pb. PMT 2004]
 (a) C_2H_6 (b) $C_2H_5 - C_2H_5$ (c) $C_2H_5 - O - C_2H_5$ (d) $C_2H_5 - CH_3$

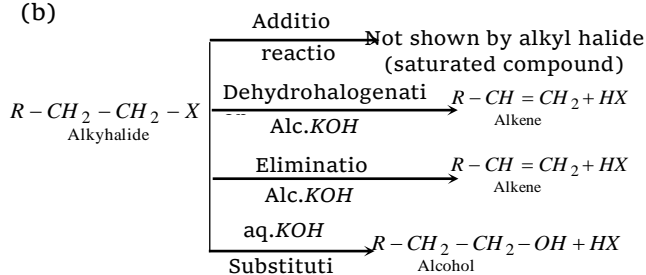
AS Answers and Solutions

(SET -25)

1. (b) Direct halogenation of alkenes is not preferred because in it a mixture of monohalogen, dihalogen, trihalogen and tetrahalogen substituted product is obtained which is difficult to separate.



2. (b)



3. (c) In chlorobenzene C - Cl bond acquires partial double bond character because of resonance.

4. (d) $2NaI + Cl_2 \rightarrow 2NaCl + I_2$ (Dissolves in $CHCl_3$ to give violet colour)

Chlorine displaces iodine from salt. The iodine get dissolve in $CHCl_3$ or CCl_4 to produce violet colour.

5. (b) $(CH_3)_3C-Br \xrightarrow{H_2O} (CH_3)_3C-OH$

Here Br substitute by -OH group.

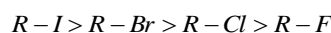
6. (a) Reactivity towards grignard reagent are as under $CH_3I > CH_3Br > CH_3Cl$

7. (b) $C_2H_5I \xrightarrow{alc.KOH} C_2H_4 \xrightarrow{Br_2} \begin{matrix} CH_2-CH_2 \\ | \quad | \\ Br \quad Br \end{matrix}$
- $$\xrightarrow{KCN} \begin{matrix} CH_2-CH_2 \\ | \quad | \\ CN \quad CN \end{matrix}$$
- Butene-1,4-dinitrile

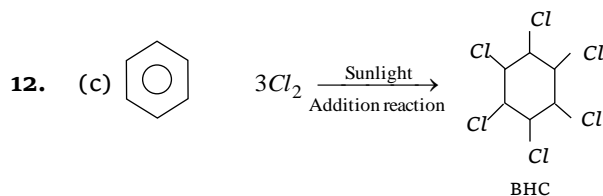
8. (c) $C_6H_6Cl_6$ has 8 stereoisomer.

9. (c) The C - X bond polarity order are as under $CH_3Cl > CH_3Br > CH_3I$

10. (d) The order of reactivity of alkyl halides for SN^2 reaction is



11. (a) $C_6H_5N_2Cl \xrightarrow[H_2O]{Boiling} C_6H_5OH + N_2 + HCl$



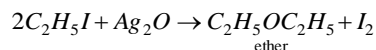
13. (c) $CH_3F > CH_3Cl > CH_3Br > CH_3I$

14. (a) $C_2H_5F + 2Na + FC_2H_5 \xrightarrow[ether]{Dry} \text{No reaction}$

15. (c) $C_2H_5Br + NaC \equiv CH \rightarrow C_2H_5C \equiv CH + NaBr$
 Ethyl bromide sodium acetylide 1-butyne sodium bromide

Thus in this reaction 1-butyne is main product.

16. (c) C_2H_5I and Ag_2O reacts as below



Thus, $C_2H_5 - O - C_2H_5$ is produced.

