

Halogen Containing compounds

Self Evaluation Test -25

- Preparation of alkyl halides in laboratory is least preferred by
 - Halide exchange
 - Direct halogenation of alkanes
 - Treatment of alcohols
 - Addition of hydrogen halides to alkenes
- An alkyl halide may be converted into an alcohol by
[EAMCET 1980; CBSE PMT 1997; BHU 1999; AIIMS 2001]
 - Addition
 - Substitution
 - Dehydrohalogenation
 - Elimination
- The C–Cl bond in chlorobenzene as compared with C–Cl bond in methyl chloride is [MP PMT 1995]
 - Longer and weaker
 - Shorter and weaker
 - Shorter and stronger
 - Longer and stronger
- A salt solution is treated with chloroform drops. Then it is shaken with chlorine water. Chloroform layer becomes violet. Solution contains [CPMT 1982]
 - NO_2^- ion
 - NO_3^- ion
 - Br^- ion
 - I^- ion
- The following reaction belongs to
 $(\text{CH}_3)_3\text{C}-\text{Br} \xrightarrow{\text{H}_2\text{O}} (\text{CH}_3)_3\text{C}-\text{OH}$ [AIEEE 2002]
 - Elimination reaction
 - Substitution reaction
 - Free radical reaction
 - Displacement reaction
- The order of reactivities of methyl halides in the formation of Grignard reagent is [KCET 2003]
 - $\text{CH}_3\text{I} > \text{CH}_3\text{Br} > \text{CH}_3\text{Cl}$
 - $\text{CH}_3\text{Cl} > \text{CH}_3\text{Br} > \text{CH}_3\text{I}$
 - $\text{CH}_3\text{Br} > \text{CH}_3\text{Cl} > \text{CH}_3\text{I}$
 - $\text{CH}_3\text{Br} > \text{CH}_3\text{I} > \text{CH}_3\text{Cl}$
- Identify Z in the following series
 $\text{C}_2\text{H}_5\text{I} \xrightarrow{\text{Alco. KOH}} \text{X} \xrightarrow{\text{Br}_2} \text{Y} \xrightarrow{\text{KCN}} \text{Z}$
 [AIIMS 1983; AFMC 1998; MP PET 1997]
 - $\text{CH}_3\text{CH}_2\text{CN}$
 - $$\begin{array}{c} \text{CH}_2\text{CN} \\ | \\ \text{CH}_2\text{CN} \end{array}$$
- $\text{BrCH}_2-\text{CH}_2\text{CN}$ (d) $\text{BrCH}=\text{CHCN}$
- The total number of stereoisomeric forms of $\text{C}_6\text{H}_6\text{Cl}_6$ known is
 - 6
 - 7
 - 8
 - None of these
- The correct order of C–X bond polarity is [RPMT 2000]
 - $\text{CH}_3\text{Br} > \text{CH}_3\text{Cl} > \text{CH}_3\text{I}$
 - $\text{CH}_3\text{I} > \text{CH}_3\text{Br} > \text{CH}_3\text{Cl}$
 - $\text{CH}_3\text{Cl} > \text{CH}_3\text{Br} > \text{CH}_3\text{I}$
 - $\text{CH}_3\text{Cl} > \text{CH}_3\text{I} > \text{CH}_3\text{Br}$
- The order of reactivities of the following alkyl halides for a SN^2 reaction is [IIT-JEE (Screening) 2000]
 - $\text{RF} > \text{RCl} > \text{RBr} > \text{RI}$
 - $\text{RF} > \text{RBr} > \text{RCl} > \text{RI}$
 - $\text{RCl} > \text{RBr} > \text{RF} > \text{RI}$
 - $\text{RI} > \text{RBr} > \text{RCl} > \text{RF}$
- Which of the following reactions doesn't give benzene
[RPMT 2003]
 - $\text{C}_6\text{H}_5\text{N}_2\text{Cl} \xrightarrow[\text{H}_2\text{O}]{\text{boiling}}$
 - $\text{C}_6\text{H}_5\text{N}_2\text{Cl} \xrightarrow[\Delta]{\text{C}_2\text{H}_5\text{OH}}$
 - $\text{C}_6\text{H}_5\text{N}_2\text{Cl} + \text{H}_3\text{PO}_2 + \text{H}_2\text{O} \longrightarrow$
 - All of these
- Benzene hexachloride is prepared from benzene and chlorine in sunlight by
 - Substitution reaction
 - Elimination reaction
 - Addition reaction
 - Rearrangement
- Carbon-halogen bond is strongest among the following
[MP PMT 1995]
 - CH_3Cl
 - CH_3Br
 - CH_3F
 - CH_3I
- Which of these do not undergo Wurtz reaction
 - $\text{C}_2\text{H}_5\text{F}$
 - $\text{C}_2\text{H}_5\text{Br}$
 - $\text{C}_2\text{H}_5\text{Cl}$
 - $\text{C}_2\text{H}_5\text{I}$
- When ethyl bromide reacts with sodium acetylide the main product is [Pb. CET 2002]
 - 1-butane
 - 1-butene
 - 1-butyne
 - 2-butene

16. C_2H_5I and Ag_2O reacts to produce [Pb. PMT 2004]

 (a) C_2H_6

 (b) $C_2H_5 - C_2H_5$

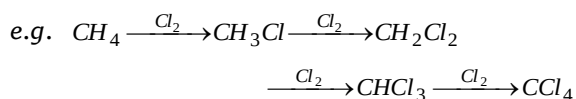
 (c) $C_2H_5 - O - C_2H_5$

 (d) $C_2H_5 - CH_3$

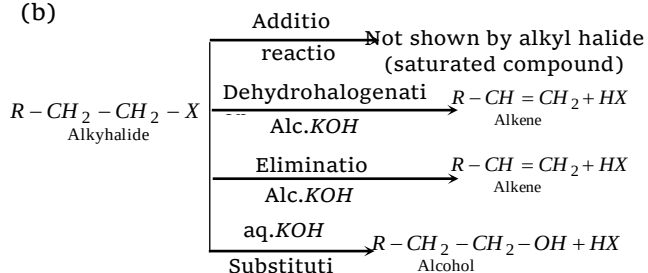
AS Answers and Solutions

(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.

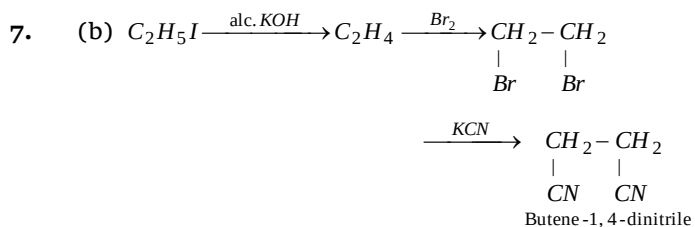
4. (d) $2NaI + Cl_2 \rightarrow 2NaCl + I_2$ (Dissolves in $CHCl_3$ to give violet colour)

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.

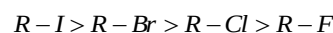
6. (a) Reactivity towards grignard reagent are as under $CH_3I > CH_3Br > CH_3Cl$



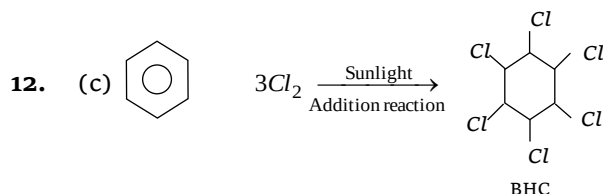
8. (c) $C_6H_6Cl_6$ has 8 stereoisomer.

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) $C_6H_5N_2Cl \xrightarrow[H_2O]{Boiling} C_6H_5OH + N_2 + HCl$



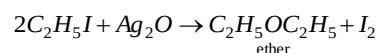
13. (c) $CH_3F > CH_3Cl > CH_3Br > CH_3I$

14. (a) $C_2H_5F + 2Na + FC_2H_5 \xrightarrow[\text{ether}]{\text{Dry}}$ 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.
