# CHEMISTRY

## BOOKS - NCERT CHEMISTRY (ENGLISH)

## HALOALKANES AND HALOARENES

Mcqs

**1.** The order of reactivity of following alcohols with halogen acids is.....

(A) $CH_3CH_2 - CH_2 - OH$ (B) $CH_{3CH_2} - \underset{CH_3}{\overset{|}{\text{CH}}} - OH$

$(C) CH_3CH_2 - \underset{CH_3}{\overset{CH_3}{\overset{|}{\underset{|}{C}}}} - OH$

A. $(A) > (B) > (C)$

B. $(C) > (B) > (A)$

C. $(B) > (A) > (C)$

D. $(A) > (C) > (B)$

**Answer: B**

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**2.** Which of the following alcohols will yield the corresponding alkyl chloride on reaction with concentrated HCl at room temperature ?

Thinking process

To solve this problem, students keep in mind that tertiary alcohol being most reactive react at room temperature.

A. $CH_3CH_2 - CH_2 - OH$

B. $CH_3CH_2 - \underset{\underset{CH_3}{|}}{CH} - OH$

C. $CH_3CH_2 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{CH}} - OH$

D. $CH_3CH_2 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - OH$

**Answer: D**

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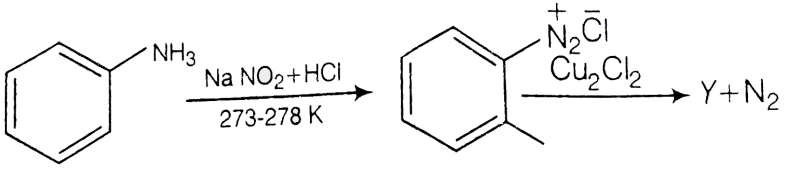
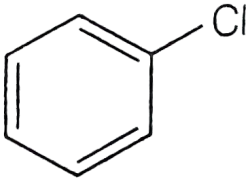
**3.** Identify the compound Y in the following reaction.




A.



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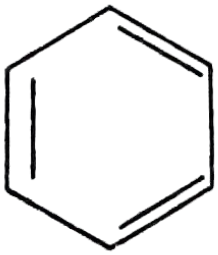
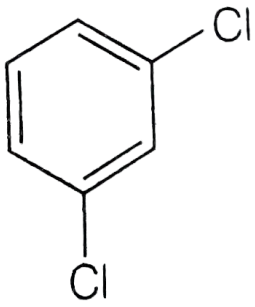
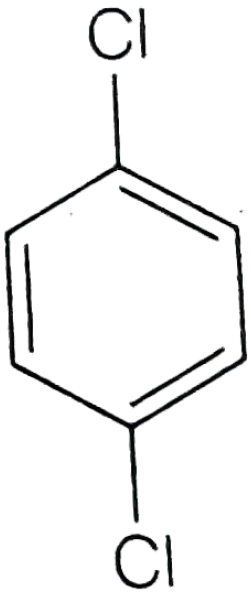


C.




D.




**Answer: A**

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**4.** Toluene react with a halogen in the presence of iron (III) chloride giving ortho and para halo compounds. The reactions is

A. electrophilic elimination reaction

B. electrophilic substitution reaction

C. free radical addition reaction

D. nucleophilic substitution reaction

**Answer: B**

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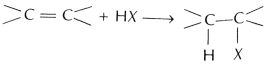
**5.** Which of the following is halogen exchange reaction ?

A. $RX + NaI \rightarrow RI + NaX$

B. 

C. $R - OH + HX \xrightarrow{ZnCl_2} R - X + H_2O$

D. None

**Answer: A**

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**6.** Which reagent will you use for the following reaction ?

$CH_3CH_2CH_2CH_3 \rightarrow CH_3CH_2CH_2CH_2Cl + CH_3CH_2CHClCH_3$

A. $Cl_2 / UV$ light

B. $NaCl + H_2SO_4$

C. $Cl_2$ gas in dark

D. $Cl_2$ gas in the presence of iron in dark

**Answer: A**

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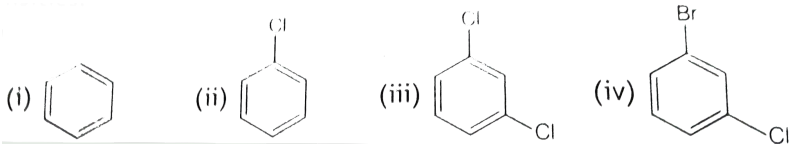
**7.** Arrange the following comounds in the increasing order densities.




A. $(i) < (ii) < (iii) < (iv)$

B. $(i) < (iii) < (iv) < (ii)$

C. $(iv) < (iii) < (ii) < (i)$

D. $(ii) < (iv) < (iii) < (i)$

**Answer: A**

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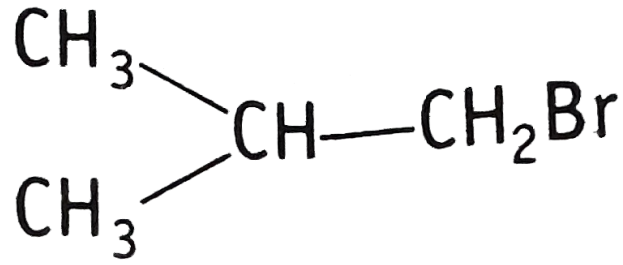
**8.** Arrange the following compounds in increasing order of their boiling points.

(i) 

, (ii)

$CH_3CH_2CH_2CH_2Br$

(iii) $H_3C - \underset{\underset{Br}{|}}{\overset{CH_3}{\overset{|}{C}}} - CH_3$

A. $(ii) < (i) < (iii)$

B. $(iii) < (ii) < (i)$

C. $(iii) < (i) < (ii)$

D. $(iii) < (ii) < (i)$

**Answer: C**

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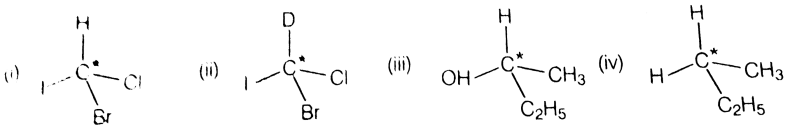
**9.** In which of the following molecules carbon atom marked with asterik (*) is asymmetric ?




A. (i),(ii),(iii) and (iv)

B. (i), (ii) and (iii)

C. (ii), (iii) and (iv)

D. (i), (iii) and (iv)

**Answer: B**

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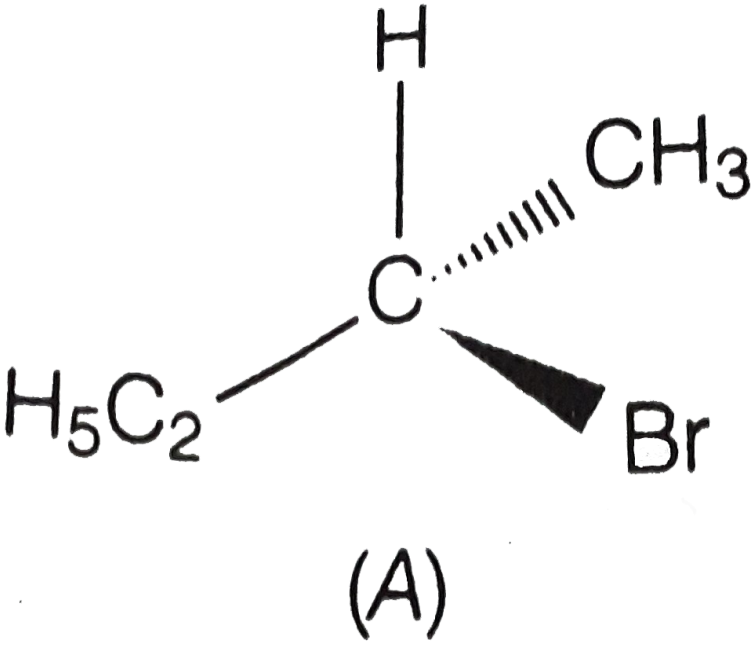
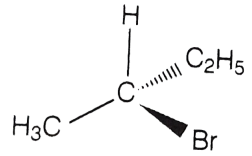
**10.** Which of the following structures is enantiomeric with the molecule (A) given below ?

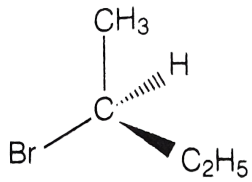



(A)

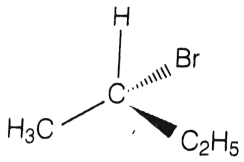
A.



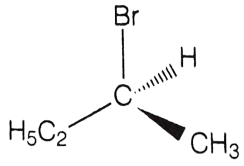

B.



C.




D.




**Answer: A**

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**11.** Which of the following is an example of vic-dihalide?

A. Dichloromethane

B. 1, 2-dichloromethane

C. Ethylidene chloride

D. Allyl chloride

**Answer: B**

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**12.** The position of Br in the compound in $CH_2 = CHC(Br)(CH_3)_2$ can be classified as.....

A. allyl

B. aryl

C. vinyl

D. secondary

**Answer: A**

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**13.** Cholorobenzene is formed by reaction of chlorine with benzene in the presence of $AlCl_3$. Which of the following species attacks the benzene ring in this reaction?

A. $Cl^-$

B. $Cl^+$

C. $AlCl_3$

D. $[AlCl_4]^-$

**Answer: B**

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**14.** Ethylidene chloride is a/an.....

A. vic-dihalide

B. gem-dihalide

C. allylic halide

D. vinylic halide

**Answer: B**

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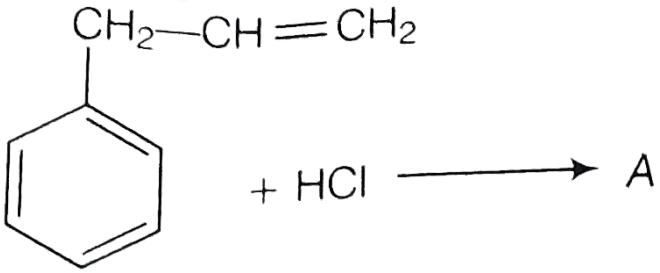
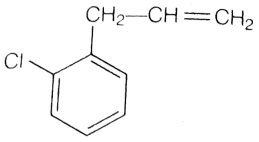
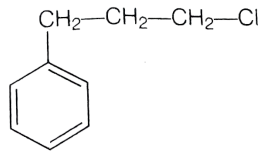
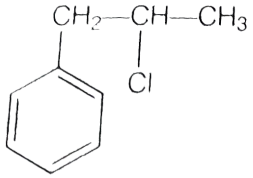
**15.** What is 'A' in the following reaction ?

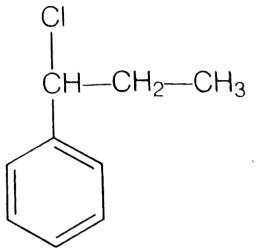



A.



B. 


C. 


D. 


**Answer: C**

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**16.** A primary alkyl halide would prefer to undergo :-

A. $S_N1$ reaction

B. $S_N2$ reaction

C. $\alpha$-elimination

D. racemisation

**Answer: B**

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**17.** Which of the following alkyl halides will undergo $S_N1$ reaction most redily ?

A. $(CH_3)_3C - F$

B. $(CH_3)_3$C-Cl

C. $(CH_3)_3C - Br$

D. $(CH_3)_3C - I$

**Answer: D**

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**18.** Which is the correct IUPAC name for $CH_3 - \underset{\underset{C_2H_5}{|}}{CH} - CH_2 - Br$ ?

A. 1-bromo-2-ethylpropane

B. 1-bromo-2-ethyl-2-methylethane

C. 1-bromo-2-methylbutane

D. 2-methyl-1-bromobutane

**Answer: C**

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**19.** What should be the correct IUPAC name for diethylbromomethane?

A. 1-bromo-1, 1-dimethylethane

B. 3-bromopentane

C. 1-bromo-1-ethylpropane

D. 1-bromopentane

**Answer: B**

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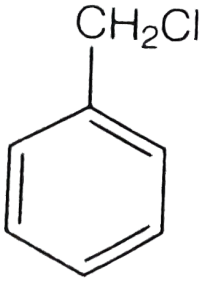
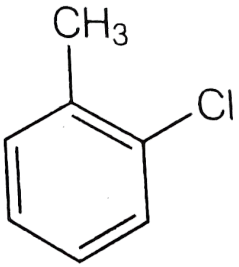
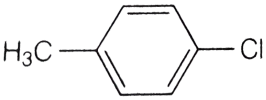
**20.** The reaction of toluene with chlorine in the presence of iron and in the absence of light yields .....

A. 

B. 


C. 


D. Mixture of (b) and (c)

**Answer: D**

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**21.** Chloromethane on treatment with excess of ammonia yields mainly

A. N, N-dimethylmethanamine $\left(CH_3-N<^{CH_3}_{CH_3}\right)$

B. N-Methylmethaneamine($CH_3 - NH - CH_3$)

C. methanamine$(CH_3NH_2)$

D. mixture containing all these in equal proportion

**Answer: C**

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**22.** Molecules whose mirror image is non-superimposable over them are known as chiral. Which of the following molecules is chiral in nature?

A. 2-bromobutane

B. 1-bromobutane

C. 2-bromopropane

D. 2-bromopropan-2-ol

**Answer: A**

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**23.** Reactions of $C_6H_5CH_2Br$ with aqueous sodium hydroxide follows.....

A. $S_N1$ mechanism

B. $S_N2$ mechanism

C. Any of the above two depending upon the temperature of reaction

D. saytzeff rule

**Answer: A**

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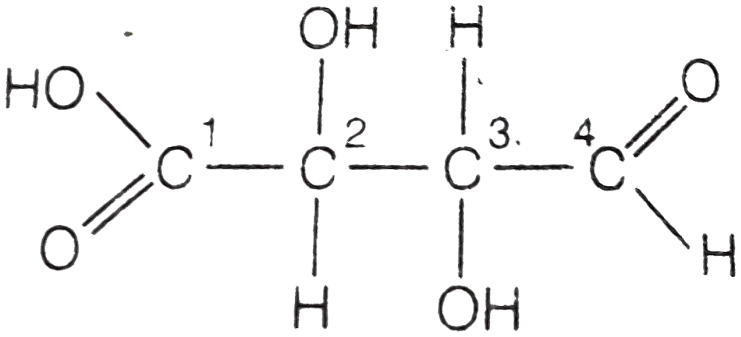
**24.** Which of the carbon atoms present in the molecule given below are asymmetric ?




A. 1,2,3,4

B. 2,3

C. 1,4

D. 1,2,3

**Answer: B**

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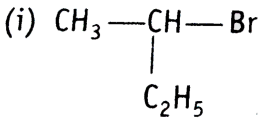
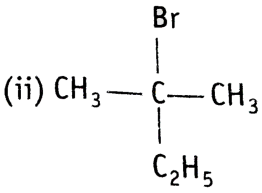
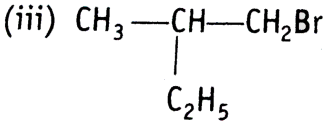
**25.** Which of the following compounds will give racemic mixture on nucleophillic substitution by $OH^-$ ion?

(i) 

(ii) 

(iii) 

A. (i)

B. (i), (ii) and (iii)

C. (ii) and (iii)

D. (i) and (iii)

**Answer: A**

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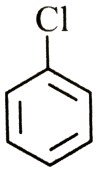
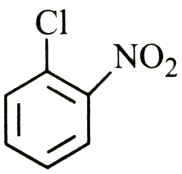
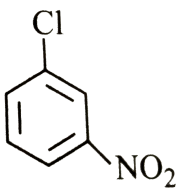
26.

(I) 


(II) 


(III) 


A. $(i) < (ii) < (iii)$

B. $(iii) < (ii) < (i)$

C. $(i) < (iii) < (ii)$

D. $(iii) < (ii) < (i)$

**Answer: C**

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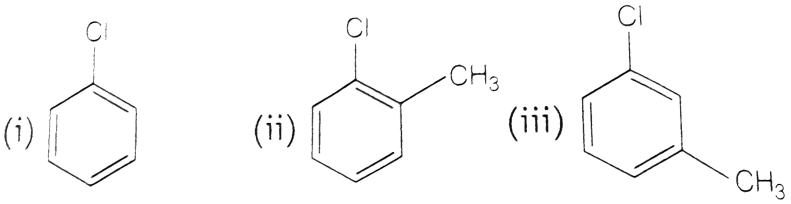
**27.** Which order is correct




A. $(i) < (ii) < (iii)$

B. $(i) < (iii) < (ii)$

C. $(iii) < (ii) < (i)$

D. $(ii) < (iii) < (i)$

**Answer: D**

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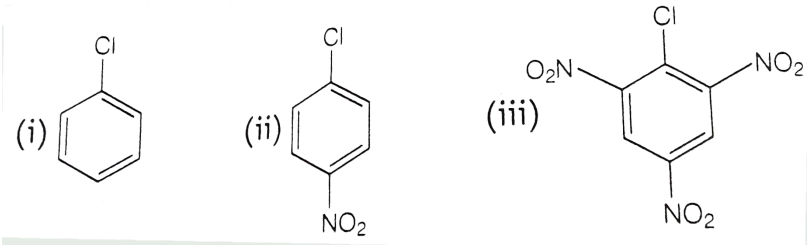
28. 


A. $(iii) < (ii) < (i)$

B. $(ii) < (iii) < (i)$

C. $(i) < (iii) < (ii)$

D. $(i) < (ii) < (iii)$

**Answer: D**

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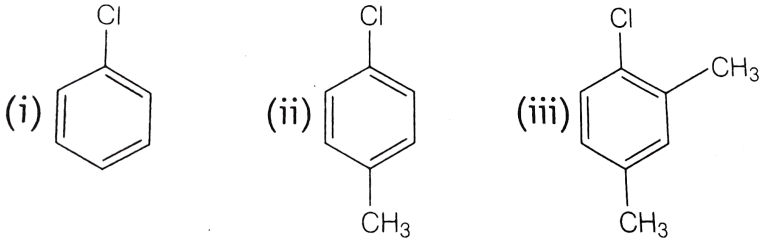
**29.** Which order is correct




A. $(i) < (ii) < (iii)$

B. $(ii) < (i) < (iii)$

C. $(iii) < (ii) < (i)$

D. $(i) < (iii) < (ii)$

**Answer: C**

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**30.** Which is the correct increasing order of boiling points

A. Butane $<$ 1-chlorobutane $<$ 1-bromobutane $<$ 1-iodobutane

B. 1-iodobutane $<$ 1-bromobutane $<$ 1-chlorobutane $<$ Butane

C. Butane $<$ 1-iodobutane $<$ 1-bromobutane $<$ 1-chlorobutane

D. Butane $<$ 1-chlorobutane $<$ 1-iodobutane $<$ 1-bromobutane

**Answer: A**

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**31.** Which is the correct increasing order of boiling points of the following compounds ?

1-bromomethane, 1-bromobutane, 1-chlorobutane, Bromobenzene

A. Bromobenzene $<$ 1-bromobutane $<$ 1-bromopropane $<$ 1-bromoethane

B. Bromobenzene $<$ 1-bromoethane $<$ 1-bromopropane $<$ 1-bromobutane

C. 1-bromopropane $<$ 1-bromobutane $<$ 1-bromoethane $<$ Bromobenzene

D. 1-bromoethane $<$ 1-bromopropane $<$ 1-bromobutane $<$ Bromobenzene

**Answer: D**

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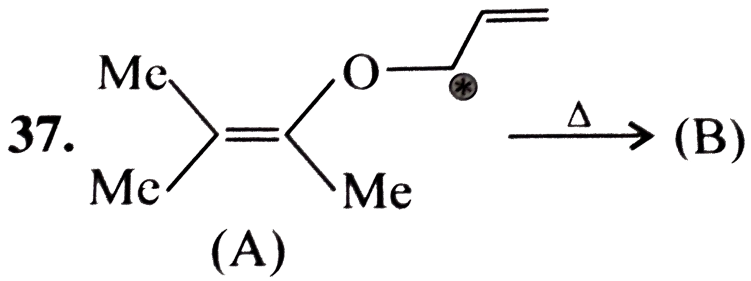
Mcqs More Than One Option

37. 


1.

Which of the following statements are correct about the above reaction ?

A. (i) and (v) both are nucleophiles

B. In (iii) carbon atom is $sp^3$ hybridised

C. In (iii) carbon atom is $sp^2$ hybridised

D. (i) and (v) both are electrophiles

**Answer: C**

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**2.** Which of the following statements are correct about this reaction?

A. The given reaction follows $S_N2$ mechanism

B. (ii) and (iv) have opposite configuration

C. (ii) and (iv) have same configuration

D. The given reaction follows $S_N1$ mechanism

**Answer: A::B**

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**3.** Which of the following statements are correct about the reaction intermediate ?

A. intermediate (iii) is unstable because in this carbon is attached to 5 atoms

B. intermediate (iii) is unstable because carbon atom is $sp^2$ hybridised

C. intermediate (iii) is stable because carbon atom is $sp^2$ hybridised

D. intermediate (iii) is less stable than the reactant (ii)

**Answer: A::D**

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**4.** Which of the following statements are correct about the mechanism of this reaction ?

A. A carbocation will be formed as an intermediate in the reaction

B. $OH^-$ will attach the substrate (ii) from one side and $Cl^-$ will leave it simultaneously from other side

C. An unstable intermediate will be formed in which $OH^-$ and $Cl^-$ will be attached by weak bonds

D. Reactions proceeds through $S_N1$ mechanism

**Answer: A::D**

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**5.** Which of the following statements are correct about the kinetics of this reaction ?

A. The rate of reaction depends on the concentration of only (ii)

B. The rate of reaction depends on concentration of both (i) and (ii)

C. Moleculirity of reaction is one

D. Molecularity of reaction is two

**Answer: A::C**

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**6.** Haloalkanes contain halogen atom(s) attached to the $sp^3$ hybridised carbon atom of an alkyl group. Identify haloalkane from the following compounds.

A. 2-bromopentane

B. Vinyl chloride (chloroethane)

C. 2-chloroacetophenon

D. Trichloromethane

**Answer: A::D**

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**7.** Ethylene cghloride and ethylidene chloride are isomers. Identify the correct statements.

A. Both the compounds form same product on treatment wih alcoholic KOH

B. Both the compounds form same product on treatment with aq. NaOH

C. Both the compounds form same product on reduction

D. Both the compounds are optically active

**Answer: A::C**

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**8.** Which of the following compounds are gem-dihalides?

A. Ethylidene chloride

B. Ethylene dichloride

C. Methylene chloride

D. Benzyl chloride

**Answer: A::C**

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**9.** Which of the following are secondary bromides ?

A. $(CH_3)_2CHBr$

B. $(CH_3)_3\mathbb{C}H_2Br$

C. $CH_3CH(Br)CH_2CH_3$

D. $(CH_3)_2CBrCH_2CH_3$

**Answer: A::C**

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**10.** Which of the following compounds can be classified as aryl halides ?

A. $p-ClC_6H_4CH_2CH(CH_3)_2$

B. $p-CH_3CHCl(C_6H_4)CH_2CH_3$

C. $o - BrH_2C - C_6H_4CH(CH_3)CH_2CH_3$

D. $C_6H_5$-Cl

**Answer: A::D**

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**11.** Alkyl halides are prepared from alcohols by treating with

A. $HCl + ZnCl_2$

B. Red P+$Br_2$

C. $H_2SO_4$+Kl

D. All of these

**Answer: A::B**

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**12.** Alkyl fluorides are synthesised by alkyl chloride/bromide in presence of.....or..... .

A. $CaF_2$

B. $CoF_2$

C. $Hg_2F_2$

D. NaF

**Answer: C::D**

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## Short Answer Type Questions

**1.** Aryl chlorides and bromides can be easily prepared by electrophilic substitution of arenas with chlorine and bromine

respectively in the presence of Lewis acid catalyst. But why does preparation of aryl iodides requires presence of an oxidising agent?

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**2.** Out of o- and p-dibromobenzene which one has higher melting point and why?

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**3.** Which of the compounds will react faster in $S_N1$ reaction with $^-OH$ ion?

$CH_3 - CH_2 - Cl$ or $C_6H_5 - CH_2 - Cl$

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**4.** Why iodoform has appreciable antiseptic property?

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**5.** Haloarenes are less reactive than haloalkanes and haloalkenes. Explain.

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**6.** Discuss the role of Lewis acids in the preparation of aryl bromides and chlorides in the dark.

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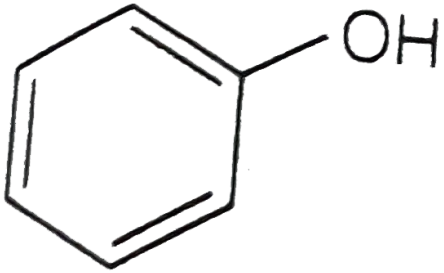
**7.** Which of the following compounds (i) and (ii) will not react with a mixture of NaBr and $H_2SO_4$. Explain why ?

(i) $CH_3CH_2CH_2OH$ (ii)

(ii)

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**8.** Which of the products will be major product in the reaction given below? Explain

$$CH_3CH=CH_2+Hi\rightarrow \underset{(A)}{CH_3CH_2I}+\underset{(B)}{CH_3CHICH_3}$$

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**9.** Why is the solubility of haloalkanes in water very low ?

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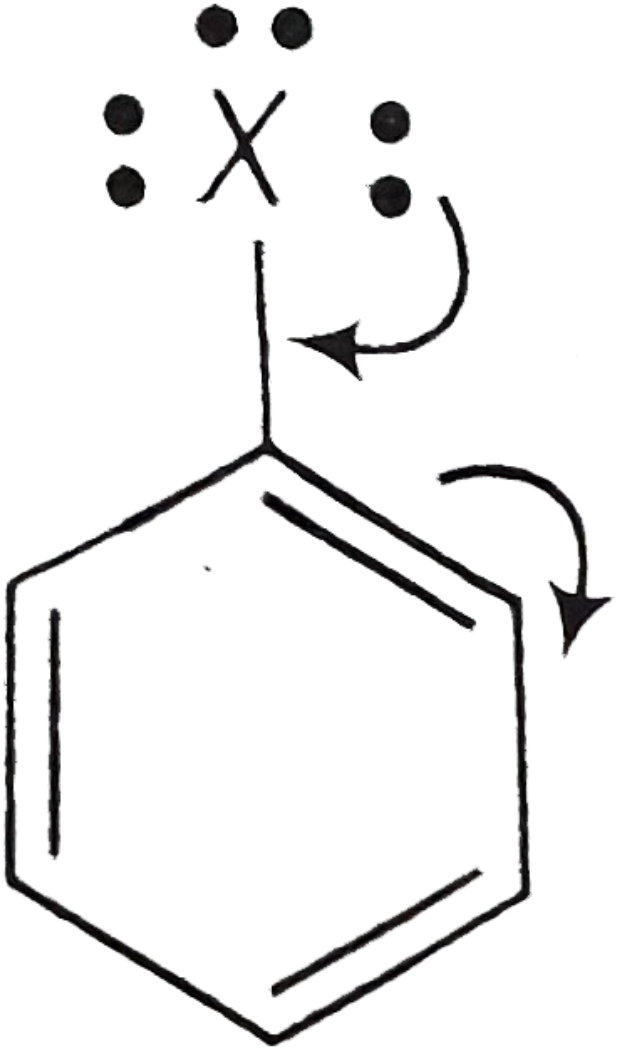
**10.** Draw other resonance structures related to the following structure and find out whether the functional fgroup present in the molecule is ortho, para directing or meta directing.



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**11.** Classify the following compounds as primary, secondary and tertiary halides.

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**12.** Compound 'A' with molecular formula $C_4H_9Br$ is treated with aq. KOH solution. The rate of this reaction depends upon the the concentration of the compounds 'A' only. When another optically active isomer 'B' of this compound was treated with aq. KOH solution, the rate of reaction was found to be dependent on concentration of compound and KOH both.

(i) Write down the structural formula of both compounds 'A' and 'B'.

(ii) Out of these two compounds, which one will be converted to the product with inverted configuration.

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**13.** Write the structures and names of the compounds formed when compound 'A' with molecular formula $C_7H_8$ is treated with $Cl_2$ in the presence of $FeCl_3$

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**14.** Identify the product A and B formed in the following reaction

$$CH_3 - CH_2 - CH = CH - CH_3 + HCl \rightarrow A + B$$

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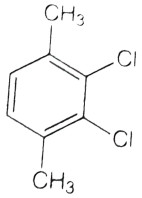
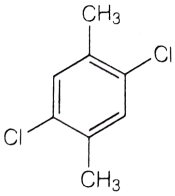
**15.** Which of the following compounds will have the highest melting point and why?



(I)



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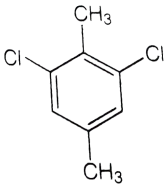

(III)

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**16.** Write down the structure and IUPAC name for neo-pentylbromide.

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**17.** A hydrocarbon of molecular mass 72 g $mol^{-1}$ gives a single monochloro derivative and two dichloro derivatives on photo

chlorination. Give the structure of the hydrocarbon.

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**18.** Name of the alkene which will yield 1-chloro-1-methylcyclohexane by its reaction with HCl. Write the reaction involved.

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**19.** Which of the following haloalkanes reacts with aqueous KOH most easily? Explain giving reason.

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**20.** Why can aryl halides not be prepared by reaction of phenol with HCl in the presence of $ZnCl_2$?

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**21.** Which of the following compounds would undergo $S_N1$ reaction faster and why ?

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**22.** Allyl chloride is hydrolysed more readily than n-propyl chloride. Why ?

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**23.** Why is it necessary to avoid even traces of moisture during the use of a Grignard reagent?

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**24.** How do polar solvents help in the first step in $S_N1$ mechanism?

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**25.** Write a test to detect the presence of double bond in a molecule.

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**26.** Diphenyls are potential threat to the envioronment. How are these produced from aryl halides?

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**27.** What are the IUPAC names of the insecticide DDT and benzene hexachloride? Why is their use banned in India and other countries?

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**28.** Elimination reaction (especially $\beta$ - elimination) are as common as the nucleophilic substitution reaction in case of alkyl halides. Specify the reagents used in both cases.

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**29.** How will you obtain monobromobenzene from aniline ?

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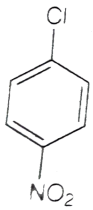
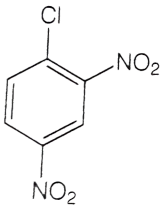
**30.** Aryl halides are extermely less reactive towards nucleophilic substitution. Predictand explain the order of reactivity of the compounds towards nucleophilic substitution.




(I)

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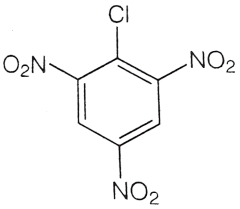


(III)

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**31.** tert-Butylbromide reacts with aq. NaOH by $S_N1$ mechanism while n-butylbromide reacts by $S_N2$ mechanism. Why?

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**32.** Predict the major product formed when HCl is added to isobutylene, Explain the mechanism involved.

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**33.** Discuss the nature of C-X bond in the haloarenes.

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**34.** How can you obtain iodoethane from ethanol when no other iodine containing reagent except NaI is available in the laboratery?

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**35.** Cyanide ion acts as an ambident nucleophille. From which end it acts as a strong nucleophile in aqueous medium? Give reason for your answer.

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## Match Type Questions

**1.** Match the compounds given in column I with the effects given in Column II

| | Column I | | Column II |
|---|---|---|---|
| A. | Chloramphenicol | 1. | Malaria |
| B. | Thyroxine | 2. | Anaesthetic |
| C. | Chloroquine | 3. | Typhoid fever |
| D. | Chloroform | 4. | Goiter |
| | | 5. | Blood substituent |

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**2.** Match the items of Column I and Column II

| | Column I | | Column II |
|---|---|---|---|
| A. | $S_N1$ reaction | 1. | *vic*-dibromides |
| B. | Chemicals in fire extinguisher | 2. | *gem*-dihalides |
| C. | Bromination of alkenes | 3. | Racemisation |
| D. | Alkylidene halides | 4. | Saytzeff rule |
| E. | Elimination of HX from alkylhalide | 5. | Chlorobromocarbons |

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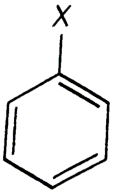
**3.** Match the structures of compounds given in Column I with the classes of compounds given Column II

| | Column I | | Column II |
|---|---|---|---|
| A. | $CH_3-\underset{\displaystyle X}{\underset{\vert}{CH}}-CH_3$ | 1. | Aryl halide |
| B. | $CH_2=CH-CH_2-X$ | 2. | Alkyl halide |
| | | 3. | Vinyl halide |
| C. |  | | |
| D. | $CH_2=CH-X$ | 4. | Allyl halide |

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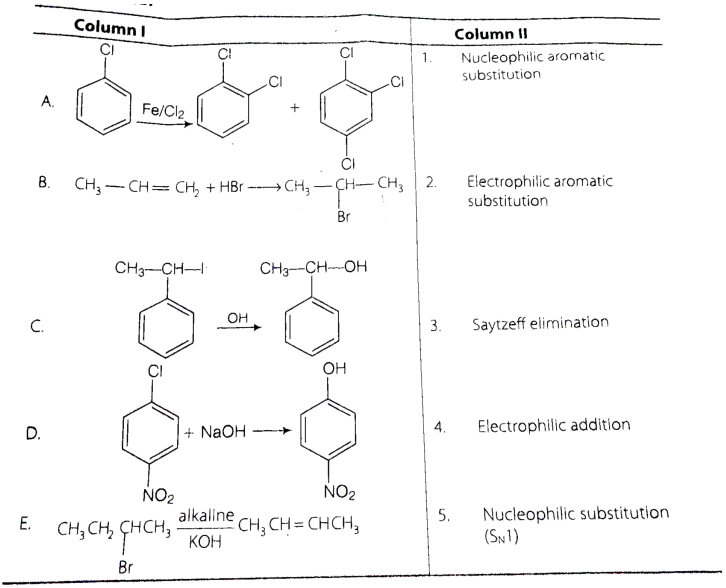
**4.** Match the reactions given in Column I with the type of reactions given in Column II

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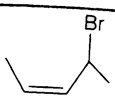
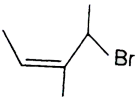
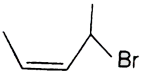
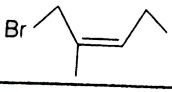
**5.** Match the structures given in Column I with the names in Column II

| Column I | Column II |
|---|---|
| A.  | 1. 4-bromopent-2-ene |
| B.  | 2. 4-bromo-3- methylpent-2-ene |
| C.  | 3. 1-bromo-2-methylbut -2-ene |
| D.  | 4. 1-bromo-2-methylpent-2-ene |

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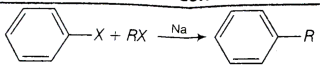
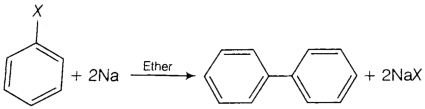
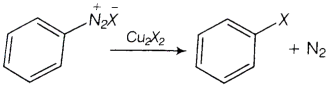
**6.** Match the reactions given in Column I with the names givn in Column II.

| Column I | Column II |
|---|---|
| A.  | 1. Fittig reaction |
| B.  | 2. Wurtz-Fittig reaction |
| C.  | 3. Finkelstein reaction |
| D. $C_2H_5Cl + NaI \xrightarrow{\text{Dry acetone}} C_2H_5I + NaCl$ | 4. Sandmeyer reaction |

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## Assertion Reason

**1.** Assertion ( A) Phosphorus chlorides ( tri and penta) are preferred over thionyl chloride for the preparation of alkyl chlorides from alcohols.

Reason (R) Phosphorus chlorides give pure alkyl halides.

A. Assertion and reason both are correct and reason is correct explanation of assertion

B. Assertion and reason both are wrong statements

C. Assertion is correct but reason is wrong statement

D. Assertion is wrong but reason is correct statement.

**Answer: b**

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**2.** Assertion( A) The boiling points of alkyl halides decrease in the order $RI > RBr > RCl > RF$

Reason (R) The boiling points of alkyl chlorides, bromides and iodides are considerably higher than that of the hydrocarbon of comparable molecular mass.

A. Assertion and reason both are correct and reason is correct explanation of assertion

B. Assertion and reason both are wrong statements

C. Assertion is correct but reason is wrong statement

D. Assertion and reason both are correct statements but reason is not correct explanation of assertion

**Answer: D**

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**3.** Assertion( A) KCN reacts with methyl chloride to give methyl isocyanide.

Reason (R) $CN^-$ is an ambident nucleophile.

A. Assertion and reason both are correct and reason is correct explanation of assertion

B. Assertion and reason both are wrong statements

C. Assertion is correct but reason is wrong statement

D. Assertion is wrong but reason is correct statement.

**Answer: D**

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**4.** Assertion (A) tert-butyl bromide undergoes Wurtz reaction to give 2,2,3,3-tetramethylbutane.

Reason (R ) In wurtz reaction, alkyl halides react with sodium in dry ether to give hydrocarbon containing double the number of carbon atoms present in the halide

A. Assertion and reason both are correct and reason is correct explanation of assertion

B. Assertion and reason both are wrong statements

C. Assertion is correct but reason is wrong statement

D. Assertion is wrong but reason is correct statement.

**Answer: D**

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**5.** Assertion (A) Presence of a nitro group at ortho or para position increases the reactivity of haloarenas towards nucleophilic substitution.

Reason (R ) Nitro group, being an electron withdrawing group decreases the electron density over the benzene ring.

A. Assertion and reason both are correct and reason is correct explanation of assertion

B. Assertion and reason both are wrong statements

C. Assertion is correct but reason is wrong statement

D. Assertion is wrong but reason is correct statement.

**Answer: A**

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**6.** Assertion: In monohaloarenes, further electrophilic substitution occurs at ortho and para position

Reason: Halogen atom is a ring deactivator

A. Assertion and reason both are correct and reason is correct explanation of assertion

B. Assertion and reason both are wrong statements

C. Assertion is correct but reason is wrong statement

D. Assertion and reason both are correct statements but reason is not correct explanation of assertion

**Answer: D**

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**7.** Assertion: Aryl iodides can be prepared by reaction of arenes with iodine in the presence of an oxidising agent.

Reason: Oxidising agent oxidises $I_2$ into HI.

A. Assertion and reason both are correct and reason is correct explanation of assertion

B. Assertion and reason both are wrong statements

C. Assertion is correct but reason is wrong statement

D. Assertion is wrong but reason is correct statement.

**Answer: C**

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**8.** Assertion: It is difficult to replace chlorine by $-OH$ in chlorobenzene in comparison to that in chloroethane

Reason: Chlorine-carbon (C-Cl) bond in chlorobenzene has a partial double bond character due to resonance.

A. Assertion and reason both are correct and reason is correct explanation of assertion

B. Assertion and reason both are wrong statements

C. Assertion is correct but reason is wrong statement

D. Assertion is wrong but reason is correct statement.

**Answer: A**

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**9.** Assertion (A) Hydrolysis of (-)-2-bromooctane proceeds with inversion of configuration

Reason (R) This reaction proceeds through the formation of a carbocation.

A. Assertion and reason both are correct and reason is correct explanation of assertion

B. Assertion and reason both are wrong statements

C. Assertion is correct but reason is wrong statement

D. Assertion is wrong but reason is correct statement.

**Answer: C**

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**10.** Assertion (A) Nitration of chlorobenzene leads to the formation of m-nitrochlorobenzene.

Reason (R) $-NO_2$ group is a m-directing group.

A. Assertion and reason both are correct and reason is correct explanation of assertion

B. Assertion and reason both are wrong statements

C. Assertion is correct but reason is wrong statement

D. Assertion is wrong but reason is correct statement.

**Answer: D**

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## Long Answer Type Questions

**1.** Some alkyl halides undergo substitution whereas some undergo elimination reaction on treatment with bases. Discuss the structural features of alkyl halides with the help of examples which are responsible for this difference.

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**2.** Some halogen containing compounds are useful in daily life. Some compounds of this class are responsible for exposure of flora and fauna to more and more of UV light which causes destruction to a great extent. Name the class of these halocompounds. In your opinion, what should be done to minimise harmful effects of these compounds.

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**3.** Why are aryl halides less reactive towards nucleophilic substitution reactions than alkyl halides? How can we enhance the reactivity of aryl halides?

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