

BHARATIYA VIDYA BHAVAN'S V M PUBLIC SCHOOL, VADODARA

QUESTION BANK
CHAPTER – 10 – HALOALKANES AND HALOARENES

- Q1 : Q.4. Explain why: -
(a) H_2SO_4 cannot be used along with KI in the conversion of an alcohol to an alkyl halide.
(b) Alkyl halide though polar are immiscible with water.
- Q2 : Which one of the following has the highest dipole moment, and why?
(a) CH_2Cl_2
(b) CHCl_3
(c) CCl_4
- Q3 : Arrange the compounds in increasing order of their boiling pts.
(a) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{Br}$, $\text{CH}_3\text{CH}_2\text{CHBrCH}_3$, $(\text{CH}_3)_3\text{C Br}$ (b) CH_3Br , CH_2Br_2 , CHBr_3
- Q4 : Write down the IUPAC name of the following organic compounds: - (a) $\text{CH}_3\text{CH}_2\text{Cl}_2$
(b) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}(\text{C}(\text{CH}_3)_3)\text{CH}(\text{I})\text{CH}_2\text{CH}_3$
- Q5 : Explain the following .
(a) Allyl chloride is hydrolysed more readily than n-propyl chloride.
(b) Vinyl chloride is hydrolysed more slowly than ethyl chloride
- Q6 : What happened when

Very short answer type questions – 1 Mark

- Q1 : What is meant by enantiomers?
Q2 : What is meant by racemic mixture?
Q3 : What are ambident nucleophiles?
Q4 : p-dichlorobenzene has higher melting point than those of ortho and meta isomers. Why?
Q5 : What happens when ethyl chloride is treated with aq. KOH.
Q6 : Draw the structure of 2-bromo pentane.
Q7 : Draw the structure of 1-bromo-4-sec-butyl-2-methylbenzene

Q8 : Which will react faster in SN^2 displacement : 1-bromopentane or 2-bromopentane?

Q9 : What happens when CH_3Br is treated with KCN ?

Q10 : What happens when ethyl bromide is treated with AgCN ?

Short answer type questions – 2 Marks

(a) propene is treated with HBr in the presence of peroxide. (b) methyl chloride is treated with KCN .

Q7 : Explain why Grignard reagent should be prepared under anhydrous condition?

Q8 : Predict the order of reactivity of the following compound in SN^1 and SN^2 reaction.

(a) The four isomeric bromobutane

(b) $\text{C}_6\text{H}_5\text{CH}_2\text{Br}$, $\text{C}_6\text{H}_5\text{CH}(\text{C}_6\text{H}_5)\text{Br}$, $\text{C}_6\text{H}_5\text{CH}(\text{CH}_3)\text{Br}$, $\text{C}_6\text{H}_5\text{C}(\text{CH}_3)\text{C}_6\text{H}_5\text{Br}$

Q9 : Why is the reactivity of haloarenes low in nucleophilic substitution reaction?

Q10 : A primary alkyl halide reacts with KCN to give an alkyl cyanide and with AgCN to give an alkyl isocyanide as the major product. Give reason.

Long answer type questions – 3 Marks

Q1 : An Organic compound A having molecular formula C_4H_8 on treatment with dil H_2SO_4 gives B. B on treatment with ion HCl and anhydrous ZnCl_2 gives C and on treatment with sodium ethoxide gives back A. Identify the compound A, B, and C and write equation involved.

Q2 : What happens when

(a) Methyl Chloride is treated with KCN

(b) Chlorobenzene is subjected to hydrolysis

(c) Propene is treated with Cl_2 in the presence of U.V. light OR is heated (d)

Chlorobenzene is treated with acetyl chloride in presence of anhyd. AlCl_3 (e)

Chloroform is slowly oxidized by air in presence of light.

Q3 : Write down the structures of the following organic compounds

(a) 1-Bromo – 4 – sec. butyl – 2 – methyl benzene

(b) 2 – Chloro – 3 – methyl pentane

(c) Vinyl chloride

Q4 : Explain why

(a) Dipole moment of chlorobenzene is lower than that of cyclohexyl chloride.

(b) Alkyl halides though polar are immiscible with water

(c) Grignard should be prepared under anhydrous condition

Q5 : An optically active compound having molecular formula $\text{C}_7\text{H}_{15}\text{Br}$ reacts with aq. KOH to give a racemic mixture of products. Write the mechanism involved for this reaction.

- Q6 : Write chemical equations and reaction conditions for the conversions of
- (a) Isopropyl bromide to n-propyl bromide
 - (b) Aniline to Iodobenzene
 - (c) Acetylene to vinyl chloride
- Q7 : Give the mechanism for the following reaction: $(\text{CH}_3)_3\text{CBr} + \text{OH}^- \rightarrow (\text{CH}_3)_3\text{COH} + \text{Br}^-$
- Q8 : Distinguish between the following pairs: (a) Bromobenzene and benzyl bromide
(b) n-Propyl alcohol and isopropyl alcohol
- Q9 : (a) Write the structural formula and IUPAC name of DDT.
(b) What are ambient nucleophiles? Explain with an example.
- Q10 : Explain why
- (a) Chloroethane is insoluble in water ?
 - (b) Alcohols are mainly prepared by the use of sulphonyl chloride ?
 - (c) Chloroform is stored in dark coloured bottles ?