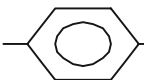


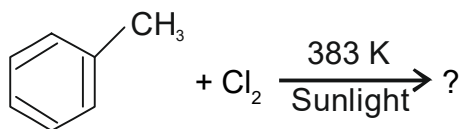


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## Chapter 10 : Halogen derivatives of Alkanes and Arenes

### ● Very Short Answer Questions (VSA) (1 Mark With Difficulty Level)

- Q. 1) Write IUPAC name of Br  - CH<sub>2</sub> - CH = CH - C(CH<sub>3</sub>)<sub>3</sub>.
- Q. 2) Write Structure of tert-alkyl halide having molecular formula C<sub>5</sub>H<sub>11</sub>Br.
- Q. 3) Give balanced chemical equation for the action of antimony trifluoride on 2, 2 - Dichloropropane.
- Q. 4) What is IUPAC name of an alcohol used in the preparation of 2 - Chloro - 2, 4 - dimethyl hexane.
- Q. 5) Draw the structure of the major monohaloproduct obtained in the following reaction.



- Q. 6) How is Bromoethane converted into Ethylcarbylamine?
- Q. 7) Write IUPAC name of product expected from reaction of Sodium methoxide with Isobutylbromide.
- Q. 8) Monochloroderivative (A) when dissolved in ether and treated with sodium metal gives single hydrocarbon product 2, 2, 5, 5- Tetramethylhexane, what is the formula of compound A?
- Q. 9) Which isomer of C<sub>4</sub> H<sub>9</sub> Cl will have the lowest boiling point?
- Q. 10) Which reagent is used to introduce nitro group in haloarenes?
- Q. 11) Give balanced chemical equation for the reaction of chlorobenzene with acetyl chloride.
- Q. 12) Arrange the following groups in descending order of priority in assigning R, S configuration. -NH<sub>2</sub>, -SO<sub>3</sub>H, -OCH<sub>3</sub>, -COOH and -Cl
- Q. 13) Compound A (C<sub>4</sub>H<sub>8</sub>) on treatment with HBr gives compound B which is optically inactive. What is structure of A?
- Q. 14) Which polyhalide is used as dry cleaning agent and as a pesticide to kill insects in stored grains?
- Q. 15) Write structural formula of DDT.

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- Q. 16) Why is sulphuric acid not used in reaction of alcohols with potassium iodide?  
Q. 17) Alkyl Fluorides are not prepared by halogenation of alkane. Give reason.  
Q. 18) Write the name of reaction of alkyl chlorides or bromides with metallic fluorides, to form Alkyl Fluorides.

● **Very Short Answer Questions - Section A (which can be combined with Sections B / C / D.)**

- Q. 1) What are halogen derivatives of alkanes?  
Q. 2) What are alkyl halides?  
Q. 3) Write IUPAC name of tert - butyl bromide.  
Q. 4) Draw the structure of 1, 2, 3 - Trichloropropane.  
Q. 5) How is chloroethane prepared from ethane?  
Q. 6) Write a chemical reaction for action of HBr on isopropyl alcohol.  
Q. 7) How is ethyl chloride prepared from alcohol using thionyl chloride?  
Q. 8) What is the action of moist silver oxide on Bromoethane?  
Q. 9) Write the name of product obtained by action of alcoholic KCN on ethyl bromide.  
Q. 10) Write a chemical equation for action of alcoholic silver propionate on ethyl bromide.  
Q. 11) How is ethene prepared from Bromoethane?  
Q. 12) What is Grignard's reagent?  
Q. 13) What is optical activity?  
Q. 14) Define Asymmetric carbon atom.  
Q. 15) What is dextro form?  
Q. 16) What is laevo form?  
Q. 17) What is Racemic form?  
Q. 19) Write IUPAC name of m - dibromobenzene.  
Q. 20) Write uses of iodoform.

● **Section B - Questions of 2 Marks SAI**

- Q. 1) How are following compounds obtained from alcohols using  $\text{PCl}_3$ ?

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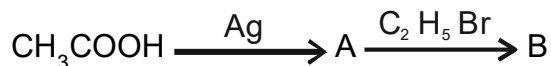
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a) 2 - Chloropropane b) 2 - Chloro - 2 - methylpropane.

Q. 2) Describe the action of excess of ammonia on

a) Isopropyl bromide b) Isobutyl chloride.

Q. 3) Identify A and B in the following.



Q. 4) How is 2 - Chloropropane converted into 1 - Bromopropane?

Q. 5) Explain Ammonolysis.

Q. 6) Explain dehydrohalogenation reaction of 2 - Bromobutane.

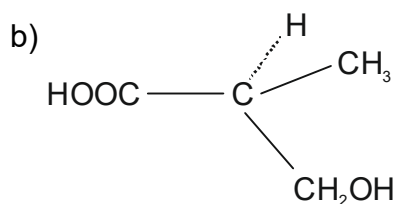
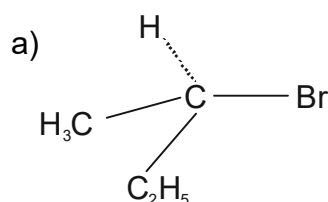
Q. 7) What is Grignard's reagent? How is it prepared?

Q. 8) State and explain Markownikoff's Rule.

Q. 9) Predict the expected product and write balanced chemical equation for a substitution reaction of Isobutyl chloride with sodium ethoxide.

Q. 10) Define optical activity. Draw the structures of optical isomers of lactic acid.

Q. 11) Assign R or S designation to each of the following.



Q.12) Write the reaction mechanism of reaction of o-nitrochlorobenzene with alkali.

Q. 13) Explain Friedel Crafts Alkylation reaction.

Q. 14) Explain Wurtz Fittig reaction with suitable example.

Q. 15) Write a note on Sandmeyer's reaction.

Q. 16) How is Ethanol converted into Butane?

Q. 17) How is Ethene converted into ethyl magnesium bromide?

Q. 18) How is propene converted into Butanenitrile?

Q. 19) Write uses of Freons.

Q. 20) Draw structural formula and write the IUPAC name of DDT.

Q. 21) Draw the resonating structures of chlorobenzene.

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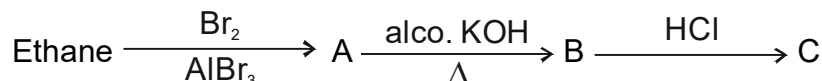
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● **Section C - Questions of 3 Marks SAll**

Q. 1) Identify A, B and C in the following



Q. 2) How are following compounds prepared from benzene diazonium chloride

a) Chlorobenzene    b) Bromobenzene    c) Iodobenzene?

Q. 3) How is chlorobenzene converted into

a) Phenol                      b) Cyanobenzene    c) Aniline ?

Q. 4) Give the mechanism of alkaline hydrolysis of Bromomethane.

Q. 5) Write the mechanism of alkaline hydrolysis of an alkyl halide which involves formation of carbocation as an intermediate.

Q. 6) Differentiate between SN<sup>1</sup> and SN<sup>2</sup> mechanism.

Q. 7) Define the following terms

a) Dextro form              b) Laevo form              c) Racemic form

Q. 8) Write balanced chemical equations for the action of following reagents on 2 - Chlorobutane.

a) Aqueous potassium hydroxide              b) Sodium methoxide

c) Silver propionate

Q. 9) How is Iodoethane prepared from :- a) Ethyl bromide b) Ethanol c) Ethene ?

Q. 10) How is Chloromethane converted into Ethyl magnesium bromide?

Q. 11) Explain nature of C - X bond in haloarenes.

Q. 12) The dipole moment of chlorobenzene is lower than cyclohexyl chloride. Explain.

Q. 13) Give balanced chemical equations for the following.

a) Action of AgF on Chloromethane,

b) Action of CoF<sub>2</sub> on Bromoethane,

c) Action of Hg<sub>2</sub>F<sub>2</sub> on 1 - Chloropropane.

Q. 14) Give reason : Haloarenes are less reactive towards the nucleophilic substitution reactions.

Q. 15) Write uses and environmental effect of chloroform.

Q. 16) Aryl halides undergo electrophilic substitution reaction slowly. Give reason.

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- Q. 17) Write structures and IUPAC names of all possible isomers of  $C_5H_{11}Br$  which are secondary alkyl halides.
- Q. 18) Write enantiomeric forms of  
a) Bromochlorofluoromethane                      b) Glyceraldehyde                      c) Butan - 2 - ol
- Q. 19) Write uses and environmental effects of freons.



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