



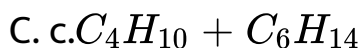
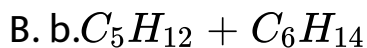
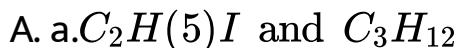
## CHEMISTRY

### BOOKS - MODERN PUBLICATION

### HALOALKANES AND HALOARENES

#### Exercise

1.  $C_2H_5I$  and  $C_3H_7I$  react with sodium metal to give :



D. d.  $C_5H_{12}$

**Answer: A**



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2. The IUPAC name of the compound

$CH_3CH_2CH_2CH_2Br$  is :

A. 1-bromo butane

B. b. 2 – bromopen tane

C. c.2 – methyl – 4 – bromobu tane

D. d. 1 – bromo – 3 – methylbu tane

**Answer: D**



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3. Grignard reagent is prepared by the reaction between

:

- A. a. Zinc and alkyl halide
- B. b. Magnesium and alkyl halide
- C. c. Magnesium and alkane
- D. d. and aromatic hydrocarbon

**Answer: B**



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4. Gem dihalides on hydrolysis give :

A. a . Acetone

B. b. Aldehydes

C. c. Ketone

D. d. Ketone and adehyde

**Answer: D**



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5. Ethylene dichloride can be prepared by adding HCl to :

A. a. Ethane

B. b. Ethylene

C. c. Acetylene

D. d. Ethylene glycol

**Answer: D**



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**6.** Which of the following alkyl halide is used as methylating agent:

A. a.  $C_2H_5G$

B. b.  $C_2H_5Br$

C. c.  $C_2H_5I$

D. d.  $CH_3I$

**Answer: D**



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7. Which compound is used in cooling :

A. a.  $CHCl_3$

B. b.  $Cl_4$

C. c.  $CF_4$

D. d.  $Ca_2F_2$

**Answer: D**



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8. Polymer of chloroethylene is :

A. a. *PVC*

B. b. Teflon

C. c. Nylon

D. d. Terrylene

**Answer: A**



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9. Grignard reagent undergoes :

A. a. Nucleophilic substitution

B. b. Nucleophilic addition

C. c. Both (a) and (b)

D. d. None

**Answer: D**



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**10.** 1,3-dibromopropane reacts with metallic zinc to form

:

A. a. Propene

B. b. cyclopropane



C. c. Propane

D. d. Hexane

**Answer: B**



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**11.** A grignard reagent is prepared by reacting magnesium:

A. a. Methyl amine

B. b. Diethyl ether

C. c. Ethyl iodide

D. d. Ethyl alcohol

**Answer: C**

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12. Fire which results from the combustion of alkali metals can be extinguished by

A. a.  $Cl_4$

B. b. Sand

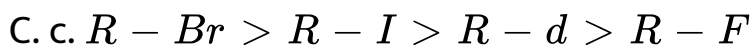
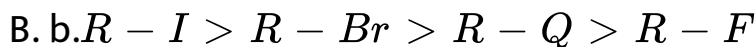
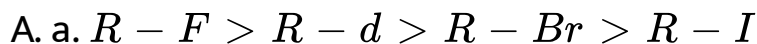
C. c. Water

D. d. Kerosens

**Answer: A**

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13. The  $SN_2$  reactivity order for halides:



**Answer: B**



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14. Reaction of chloroform with alcoholic KOH in presence of a primary aromatic amine is called:

A. a. Hydrolysis

B. b. Reduction

C. c. Wurtz Reaction

D. d. Carbylamine reaction

**Answer: D**



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**15. Ethyl bromide reacts with lead sodium alloy to form:**

A. a. Tetraethyl lead

B. b. Tetraethyl bromide

C. c. Both (a) and (b)

D. d. None

**Answer: A**

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**16.** Grignard reagent shows addition on :

A. a.  $> C = O$

B. b.  $-C = N$

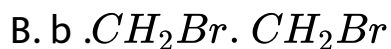
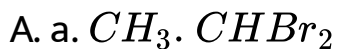
C. c.  $C = S$

D. d. all

**Answer: D**

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17. Which is gem-dihalide:



D. d. None

Answer: A



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18. The reactivity order of halide ion in alkyl halide is :

A. a.  $F > a > Br > I$

B. b.  $Cl > F > Br > I$

C. c.  $I > Br > a > F$

D. d.  $Br > I > a > F$

**Answer: C**



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**19. Non-sticking fry pans are coated with :**

A. a. ethylene

B. b. styrene

C. c. tetrafluoro ethylene (teflon)

D. d. Chlorofluoro methane

**Answer: C**



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**20. Pick up the correct statement about alkyl halides:**

A. a. they show H-bonding.

B. b. They are soluble in water.

C. c. They are soluble in organic solvents

D. d. they do not contain any polar bond.

**Answer: C**



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21. 2-bromopentane is heated with potassium ethoxide in ethanol the major product is :

A. a. *Trans - pent - 2e*  $\neq$

B. b. *2 - eth*  $\otimes$  *pen tan e*

C. c. pent-1ene

D. d. *cic - pent2 - e*  $\neq$

**Answer: A**



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22. Which reagent is useful in increasing the carbon chain of an alkyl-halide:

A. a.  $HCN$

B. b.  $KCN$

C. c.  $NH_4CN$

D. d.  $AgCN$

**Answer: B**



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23.  $CH_2 = CHCl$  reacts with  $HCl$  to form :

A. a.  $CH_2Cl - CH_2Cl$

B. b.  $CH_3 - CHCl_2$

C. c.  $CH_2 = CHCl$ .  $HCl$

D. d. None of these

**Answer: B**



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**24.** Which product is obtained when bleaching powder is distilled with acetone?



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25. The compound that will not give iodoform on treatment with alkali and iodine is :

A. a. Acetone

B. b. Ethanol

C. c. Diethyl ketone

D. d. Isopropyl alcohol

**Answer: C**



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26. Ethyl alcohol gives ethyl chloride on treatment with:

A. a.  $NaCl$

B. b.  $SOCl_2$

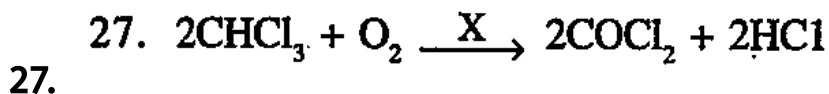
C. c.  $Cl_2$

D. d.  $KCl$

**Answer: B**



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27.

In the above reaction X stands for

A. a. An oxidant

B. b. A reductant

C. c.Light and air

D. d. None of these

**Answer: C**

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**28.** Vapour density of an organic compound is 23.0. it contains 52.17 % of carbon and 13 % of hydrogen. The compound gives iodoform test the compound is :

A. a. ethanol

B. b. Dimethyl ether

C. c. Acetone

D. d. Methanal

Answer: C



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29. The reaction,



as:

- A. a. Wurtz Reaction
- B. b. Fitting reaction
- C. c. Frankland's reaction
- D. d. Finkelstein's reaction

**Answer: B**

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30. Carbon tetrachloride reacts with steam at  $500^{\circ}C$  to give:

A. a.  $COCl_2$

B. b.  $CHCl_3$

C. c. both a and b

D. d. None

**Answer: A**

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31. Iodoform test will not be given by:

A. a. Acetaldehyde

B. b. Acetone

C. c. 2 – pentanone  $\neq$

D. d. 3-pentanone

**Answer: D**



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32. What mass of isobutylene is obtained from 37g of tertiary butyl alcohol by heating with 20%  $H_2SO_4$  at

363K if the yield is 65 % :

A. a. 16g

B. b. 18.2g

C. c. 20g

D. d. 22g

**Answer: B**



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**33.** Methyl amine on heating with  $CHCl_3$  and KOH gives:

A. a. Methanol

B. b. Carbylamine

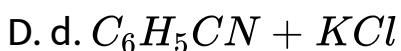
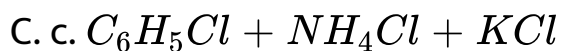
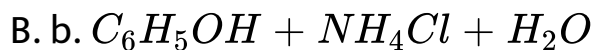
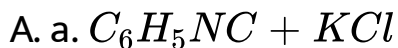
C. c. Methanamide

D. d. Methy cyanide

**Answer: B**

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**34.** The reaction products of the reaction between  $C_6H_5NH_2$ ,  $CHCl_3$  and  $KOH$  are :



**Answer: A**

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**35.** The product obtained on treatment of ethyl chloride with potassium cyanide is reduced by sodium and alcohol to give?

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**36.** Carbon tetrachloride on treatment with  $\text{Fe}/\text{H}_2\text{O}$  gives

,

A. a. Chloromethane

B. b. Methane

C. c. Chloroform

D. d. Methyl Cyanide

**Answer: C**



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**37. Which statement is wrong about chloroform:**

A. a. Chloroform is used as anesthetic

B. b. Chloroform is distorted tetrahedral shape

C. c. Chloroform is used as a solvent

D. d. Chloroform Has  $sp^2$ -hybridized carbon atom.

**Answer: D**

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**38.** The industrial preparation of chloroform employs acetone and :

- A. a. Sodium Chloride
- B. b. Chlorine gas
- C. c. calcium hypochlorate
- D. d. Phosgene

**Answer: C**

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39. Treatment of ammonia with excess of ethyl chloride will yield ?

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40. A mixture of 1-chloropropane and 2-chloropropane when treated with alcoholic KOH it gives :

A. a. Ethyl amine

B. b. 2 -  $\alpha$  e  $\neq$

C. c. isopropylene

D. d. a mixture of 1-propene and 2 propene

**Answer: A**

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41. When n-butyl magnesium iodide is treated with water the product is :

A. a. iso-butane

B. b. *n* – butane

C. c. alcohol

D. d. propane

**Answer: B**

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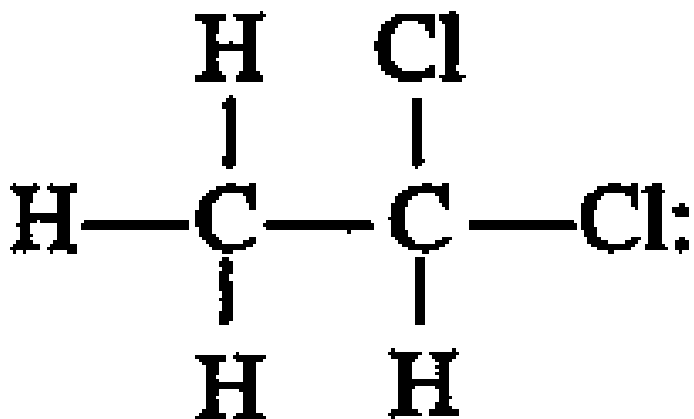


42.

IUPAC

name

of



:

- A. a.1,2-dichloroethane
- B. b. 2,2-dichloroethane
- C. c. 1,1-dichloroethane
- D. d. Dichloroethane

Answer: C



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43. Chloroform can be obtained from chloral by the action of :

A. a.  $Ca(OH)_2$

B. b.  $NaOH$

C. c. Both a and b

D. d. none

**Answer: C**



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44. Iodoform gives a precipitate with  $AgNO_3$  on heating but chloroform does not because:

A. a. Iodoform is ionic

B. b. Chloroform is covalent

C. c. C-I bond in iodoform is weak and C-Cl form in chloroform is strong

D. d. none

**Answer: C**



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45. The hydrogen atom in chloroform is :

A. a., acidic

B. b. Basic

C. c. Neutral

D. d. None

**Answer: A**



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**46.** A small amount of alcohol is usually added to  $CHCl_3$  from ethanol and bleaching powder the latter provides:

A. a. It retards the anesthetic property of  $CHCl_3$

- B. b. It retards the oxidation property of  $\text{CHCl}_3$  to phosgene
- C. c. It converts any phosgene formed to harmless ethyl carbonat
- D. d both b and c

**Answer: C**



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**47.** Solvent used in dry cleaning of clothes is:

- A. a. Alcohol
- B. b. Acetone

C. c. carbon tetrachloride

D. d. Freon

**Answer: C**



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**48.** In the preparation of  $CHCl_3$  from ethanol and bleaching powder the latter provides:

A. a.  $Cl_2$

B. b.  $Ca(OH)_2$

C. c. both a and b

D. d. none

Answer: C

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49. IUPAC name of a compound having the formula  $CH_2 = CHCH_2Cl$  is :

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50. Aryl halides are less reactive towards nucleophiles than alkyl halides due to :

A. a. 3-chloro-1propene

B. b. 3-chloro-1propene

C. c. allyl chloride

D. d. 1-chloro-2-methylprop-1-ene

**Answer: A**

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51. The product of the reaction

$CH_3 - CH = CH_2 + HBr \rightarrow (X)$  is :

A. a.  $CH_3 - CHBr - CH_3$

B. b.  $CH_2Br - CH = CH_2$

C. c.  $CH_2 - C - CH_2$

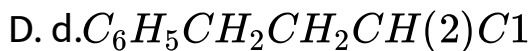
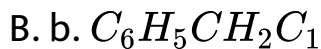
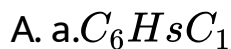
D. d.  $CH_3 - CH_2 - CH_2Br$



Answer: A

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52. which of the following does not react with benzene in presence of anhydrous  $AlCl_3$ :



Answer: A

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53. The reaction,  $CH_2 = CH_2 + Br_2 \rightarrow CH_2Br - CH_2Br$  is an example of:

- A. a. Substitution
- B. b. Oxidation
- C. c. Addition
- D. d. Double decomposition

**Answer: B**



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54. Methyl bromide is not used :

A. a.As an insecticide

B. b. A disinfectant

C. c. For dyeing clothes

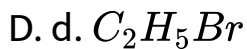
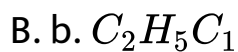
D. d. As disinfectant for •young fruit trees

**Answer: C**

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55. Which one is liquid at room temperature:

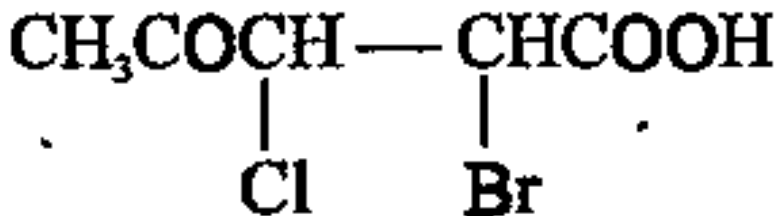
A. a. $CH_3Cl$



**Answer: D**

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56. The IUPAC name of the compound,



is:

A. a. 2-bromo-3-chloro-4-oxobutanoic acid

B. b.

3 - chl or o - 2 - bromo - 4 -  $\otimes$  open tan oic acid

C. c. 4-carbOxybromo-3-chlor6-2-butanone

D. d. None

**Answer: A**



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57. A compound A of formula  $C_3H_6Cl_2$  on reaction with alkali can give B of formula  $C_3H_6O$  or C of formula  $C_3H_4$ . B on oxidation gave a compound of the formula  $C_3H_5O_2$ . C with dilute  $H_2SO_4$  containing  $Hg^{2+}$  ion gave

D of formula  $C_3H_6O$  which with bromine and alkali gave the sodium salt of  $C_2H_4O_2$ . A is:



**Answer: A**



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**58.** Which one of the following can be obtained by halide exchange method:

A. a.  $CH_3e_1$

B. b.  $C_2H_5C_1$

C. c.  $CH_3$

D. d.  $CH_3Ér$

**Answer: C**



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**59.** PVC is produced by the polymerisation of :

A. a. Vinyl acetate

B. b. Allyl chloride

C. c. Vinyl chloride

D. d. Ethene

**Answer: C**



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**60.** Which halide is least reactive:

A. a. Alkyl halide

B. b. Allyl halide

C. c. Vinyl chloride

D. d. None

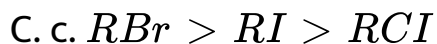
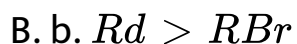
**Answer: C**



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61. In Wurtz reaction of alkyl halides with sodium the reactivity order of these halides is :



D. d. None

**Answer: A**



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62. HCl gas on passing through ethyl alcohol in presence of anhy.  $ZnCl_2$  gives :

A. a. Ethane

B. b. Ethyl chloride

C. c. Ethene

D. d.  $Cl_4$

**Answer: B**



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63. The reagent is used in the conversion of 1-butanol to 1-bromobutane is :

A. a.  $CHBr_2$

B. b.  $Br_2$

C. c.  $CH_3Br$

D. d.  $P + Br_2$

**Answer: D**



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**64.** The correct order of melting and boiling points of the primary ( $1^\circ C$ ) secondary ( $2^\circ C$ ) and tertiary ( $3^\circ C$ ) alkyl halides:

A. a.  $P > S > T$

B. b.  $T > S > P$

C. c.  $STP$

D. d.  $TPS$

**Answer: A**



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**65.** In the elimination reactions in the formation of alkenes the reactivity of halogens in alkyl halides follow the order:

A. a.  $I > Br > Cl$

B. b.  $Cl > Br > I$

C. c.  $Br > a > I$

D. d. None

**Answer: A**

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**66.** A mixture of two organic compounds was treated with sodium metal in ether solution Isobutane was obtained as a product . The two chlorine compounds are :

A. a.Methyl chloride and propyl chloride

B. b. Methyl chloride and ethyl chloride

C. c. Isopropyl chloride and methyl chloride

D. d. Isopropyl chloride and ethyl chloride

**Answer: C**



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**67.** The  $S_N$  reactivity of ethyl chloride is :

A. a. More or less equal to that of benzyl chloride

B. b. Less than that of benzyl chloride

C. c. More or less equal to that of chlorobenzene

D. d. Less than that of chlorobenzene

**Answer: B**

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68. Ethyl bromide and isopropyl chloride can be distinguish by :

A. a. Alcoholic  $AgNO_3$

B. b. Comparing their colours

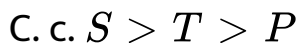
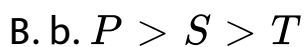
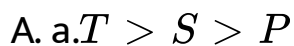
C. c. Burning the compound on spatula

D. d. Aqueous  $KOH$  solution

**Answer: A**

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69. In elimination reactions in the formation of alkenes the reactivity of alkyl halides shows the order:



D. d. None

**Answer: A**



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70. Ethylene on treatment with chlorine gives :



A. a. Ethylene dichloride

B. b. Ethylene chlorohydrin

C. c.  $CH_4$

D. d.  $C_2H_6$

**Answer: A**



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**71.** The substance employed as tear gas is:

A. a. Westron

B. b. Chloropicrin

C. c. Chloretone

D. d. None

**Answer: B**

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72. Which alkyl halide is preferentially hydrolysed by  $SN^1$  mechanism :

A. a.  $CH_3Cl$

B. b.  $CH_3CH_2Cl$

C. c.  $CH_3CH_2CH_2Cl$

D. d.  $(CH_3)_3C.Cl$

**Answer: D**



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73. In dihalogen derivatives if two halogen atoms are attached to the same carbon atom the compound is called :

- A. a. Gem-dihalide
- B. b. Vicinal dihalide
- C. c. Both (a) and (b)
- D. d. None

**Answer: A**



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74. In dihalogen derivatives if two halogen atoms are attached to the adjacent carbon atom the compound is called :

- A. a. Vicinal dihalide
- B. b. Gemidihalide
- C. c. Both (a) and (b)
- D. d. None

**Answer: A**



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75. Westron is:

A. a.  $CHCl = CHCl$

B. b.  $CHCl_2 \cdot CHCl_2$

C. c.  $CH_2Cl - CH_2Cl$

D. d. None

**Answer: B**



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**76.** The  $CCl_4$  and  $CHCl_3$  can be distinguish by the action of :

A. a.  $RNH_2 + KOH$

B. b.  $RCN + KOH$

C. c. Hydrolysis

D. d. Burning in air

**Answer: D**



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77.  $S_N1$  reaction is favoured by :

A. a. Non-polar solvents

B. b. More no. of alkyl group on the carbon atom  
attached to the halogen atom

C. c. Small groups on the carbon attached to the  
halogen atom

D. d. None

**Answer: B**



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**78.** The alkyl group of Grignard reagent acts as:

A. a. Free radical

B. b. Carbonium ion

C. c. Carbanion

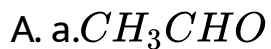
D. d. None

**Answer: C**



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79. Trichloro acetone reacts with lime water to form:



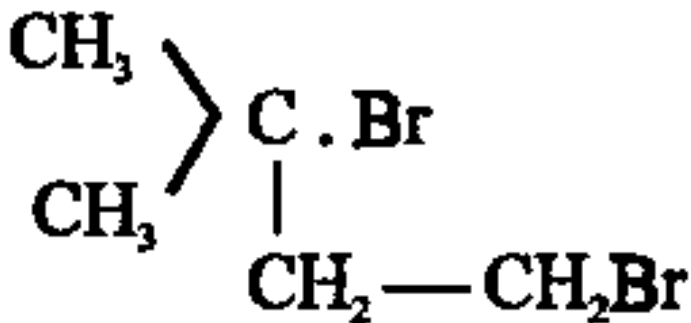
**Answer: B**



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80. The IUPAC name of the compound,



A. a. 1, 3 - dibromo - 3 - methylbutane

B. b. 3 - methyl - 1, 2 - bromobutane

C. c. 3 - methyl - 1, 3 - dibromo - 3 - methylbutane

D. d. None

Answer: A



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81. vicinal and geminal dialdehydes can be distinguished by:

A. a.  $KOH(aq. )$

B. b.  $KOH(alc. )$

C. c.  $Zn$  dust

D. d. None

**Answer: A**



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82. in order to get ethanethiol from  $C_2H_5Br$  the reagent used is :

A. a.  $Na_2S$

B. b.  $NaHS$

C. c.  $KCN$

D. d.  $K_2S$

**Answer: B**



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**83.** Which is not present in grignard reagent :

A. a. Carboxylic radical represented by  $COOH$

B. b. Magnesium represented by  $Mg$

C. c. Alkyl radical represented by  $R$

D. d. Halide• radical represented by X

**Answer: A**

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**84.** For the carbylamine reaction we need hot alcoholic KOH and :

- A. a. Any amine and chloroform
- B. b. Chloroform and silver powder
- C. c. A primary amine and an alkyl halide
- D. d. Any monoalkyl amine and trichloro methane

**Answer: D**



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85. Victor Grignard was awarded Nobel prize for making useful compounds by joining organic compounds to :

A. a. Fe

B. b. *Mg*

C. c. Proteins

D. d. Na

**Answer: B**



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86. Iodoform is formed when ethanol is heated with :

- A. a. Potassium iodide and sodium hydroxide
- B. b. Iodine and aqueous potassium hydroxide
- C. c. Chloroform and iodine
- D. d. Iodine and potassium iodide

**Answer: B**



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87. Which does not give iodoform reaction:

- A. a.  $C_6H_5COOCH_3$

B. b.  $CH_3OH$

C. c.  $CH_3CH_2OH$

D. d.  $CH_3CHO$

**Answer: B**



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**88.** The reactivities of methyl chloride (A) propyl chloride (B) and chlorobenzene © are in the order :

A. a.  $A > B > C$

B. b.  $C > B > A$

C. c.  $A > C > B$

D. d.  $B > A > C$

**Answer: A**



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**89.** Iodoform test is not given by:

A. a. Ethanol

B. b. Benzophenone

C. c. Ethanal

D. d. Acetophenone

**Answer: B**



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90.  $CO_2$  on reaction with  $C_2H_5MgBr$  and  $H_2O$

- A. a. Ethane
- B. b. Propionic acid
- C. c. Acetic acid
- D. d. None

**Answer: B**

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91. Commercial name 1, 1, 2, 2-tetrachloro-ethane is -.

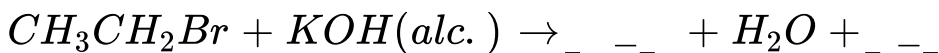


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92. In methyl chloride molecule there are---- bonds.

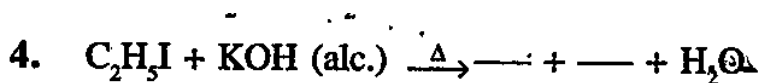
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93. Complete the equation



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94. Complete the following reaction



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95. IUPAC name of Freon-12 is \_\_\_\_\_.

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96. Ethyl bromide reacts with ammonia to give

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97. Methyl bromide on treatment with sodium ethoxide  
gives

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98. Bromopropane reacts with alcoholic  $KOH$  to give

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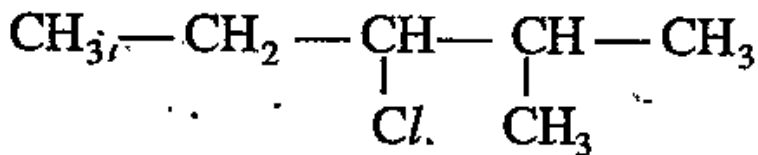
99. Bromopropane reacts with alcoholic  $KOH$  to give

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100.  $HBr$  is added to propene in presence of peroxide gives?

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101. Give the IUPAC name of :



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102. How does ethyl bromide react with alcoholic KOH solution ?

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103. Write the structural formula of 1-bromo-2-methylbutane.

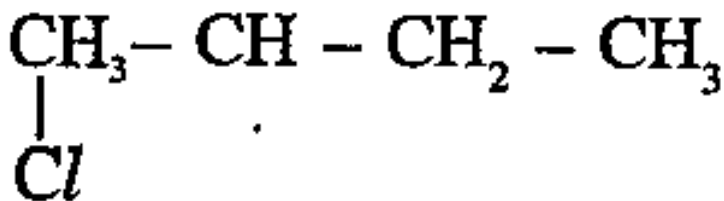
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104. Give the structural formula of ethyl (3-chloro-2-methylbutanoate)

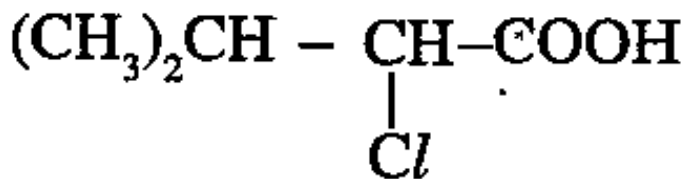
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105. Give the IUPAC name of



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106. Give the IUPAC name of



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107. What is Westrosor ?

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108. What is the product formed when acetylene dissolved in ethyl alcohol combines with chlorine ?

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**109.** What organic compound is obtained when ethyl bromide reacts with aq. NaOH solution?

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**110.** What happens when ethyl iodide is heated with alcoholic KOH.

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**111.** What happens when ethyl iodide is heated with sodium in dry ethereal solution ? Give equation.

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**112.** How can you get ethyl chloride from ethyl alcohol?

Give equation.

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**113.** What are ambident nucleophiles ? explain with an example.

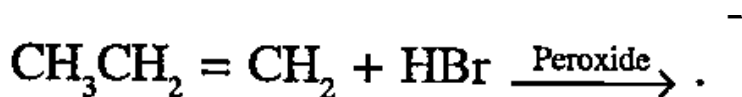
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**114.** Which compound in each of the following pairs will react faster in  $S_N2$  reaction with  $OH^-$  and why?

$CH_3Br$  or  $CH_3I$

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115. Complete the following chemical equation :



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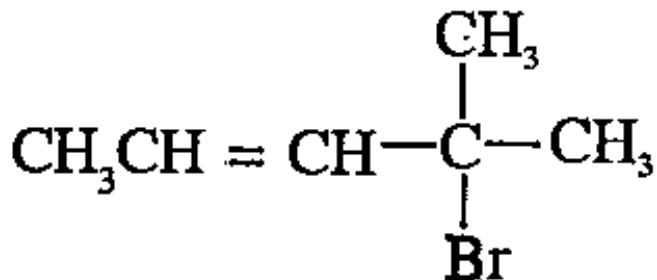
116. The p-isomer of dichlorobenzene has higher melting point than o- and m-isomer. Why ?

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117. What happens when  $CH_3-Br$  is treated with  $KCN$ ?

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118. Write the IUPAC name of



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119. What happens when ethyl chloride is treated with aqueous KOH?

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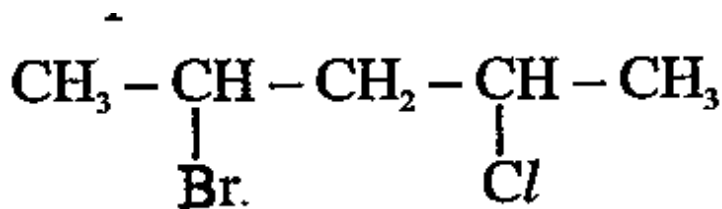
120. Write the IUPAC name of  $(CH_3)_2CH \cdot CH(Cl)CH_3$

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121. Which aerosol depletes ozone layer ?

 [Watch Video Solution](#)

122. Write the IUPAC name of the following compound :



 [Watch Video Solution](#)

123. Write the chemical reaction of benzene with chlorine in presence of anhydrous  $AlCl_3$ .

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124. Why are chlorine derivatives of Organic compounds used as solvents in industry?

 [Watch Video Solution](#)

**125.** Why halobenzene and haloarenes are less reactive than haloalkanes ?

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**126.** What happens when benzene is heated with chlorine in presence of sunlight ?

 [Watch Video Solution](#)

**127.** What happens when ethyl bromide is treated with alc. KOH?



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128. What happens when ethyl iodide reacts with sodium methoxide ?



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129. What happens when ethyl iodide is treated with (a) Aqueous  $KOH$  and (b) Alcoholic  $KOH$  ?



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**130.** How will you prepare ethyl amine from methyl iodide ?

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**131.** How can you convert 2-chloro butane to 2-butanol?

 [Watch Video Solution](#)

**132.** How does ethyl bromide react with alcoholic KOH solution ?

 [Watch Video Solution](#)



**133.** How does ethyl bromide react with sodium ethoxide?

 [Watch Video Solution](#)

**134.** How does ethyl bromide react with metallic sodium in dry ether?

 [Watch Video Solution](#)

**135.** What organic compound is obtained when ethyl bromide reacts with aq. NaOH solution?

 [Watch Video Solution](#)

**136.** Write with equation what happens when propene and HBr react ?

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**137.** Give an example of elimination reaction ?

 [Watch Video Solution](#)

**138.** What is wurtz reaction ? Give an example.

 [Watch Video Solution](#)

**139.** How alkanes are prepared from alkyl halide ?

 [Watch Video Solution](#)

**140.** How does chlorobenzene reacts with excess of chlorine

 [Watch Video Solution](#)

**141.** Give an account of nucleophilic substitution reactions in haloarenes?

 [Watch Video Solution](#)

**142.** Give Friedel craft reaction of chlorobenzene (equation only).

 [Watch Video Solution](#)

**143.** Illustrate: Wurtz fitting reaction

 [Watch Video Solution](#)

**144.** Write short note on Halogenation.

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**145.** When chlorine is passed through warm benzene in the presence of sunlight, what will be produced



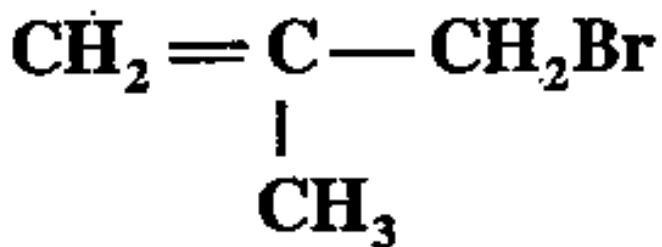
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**146.** What are products of chlorination of toluene under different conditions ?



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147. Give the IUPAC name of following compound:



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148. What are ambident nucleophiles ? explain with an example.

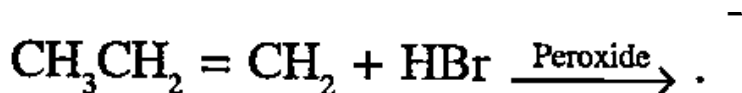
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149. Which compound in each of the following pairs will react faster in  $S_N2$  reaction with  $OH^-$  and why?

$CH_3Br$  or  $CH_3I$

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150. Complete the following chemical equation :

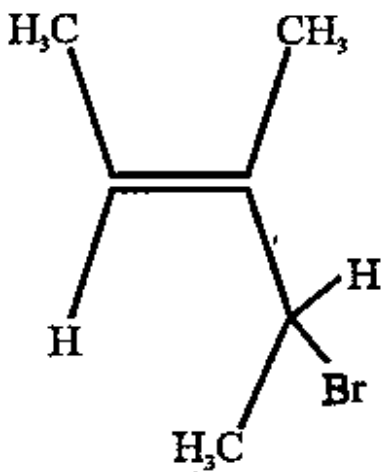


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151. The p-isomer of dichlorobenzene has higher melting point than o- and m-isomer. Why?

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152. Give the IUPAC name of the following compound.



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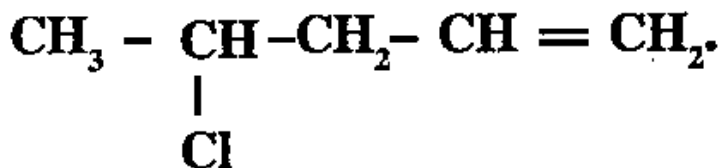
153. What happens when bromine attacks





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154. Write the IUPAC name of

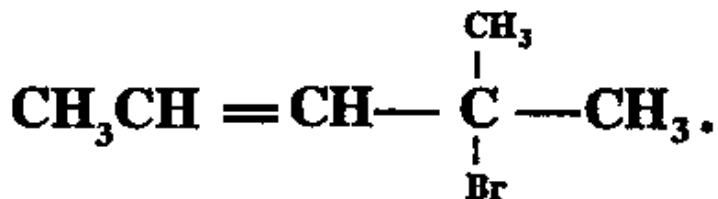


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155. What happens when  $\text{C}_2\text{H}_5 - \text{Br}$  is treated with  $\text{KCN}$ ?

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156. Write the IUPAC name of



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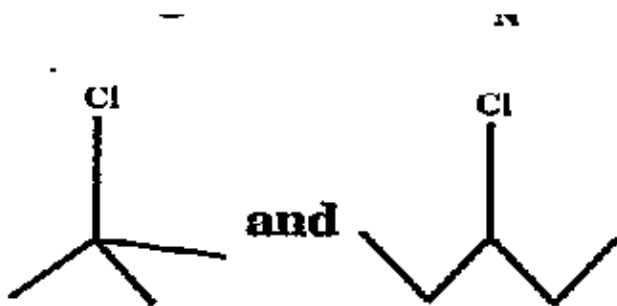
157. What happens when ethyl chloride is treated with aqueous KOH?

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158. Write the IUPAC name of  $(CH_3)_2CH.CH(Cl)CH_3$

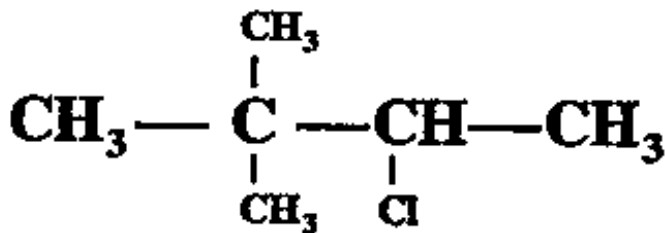
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159. Which compound in the following pair undergoes faster SN 1 reaction ?



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160. Write the IUPAC name of the following compound:

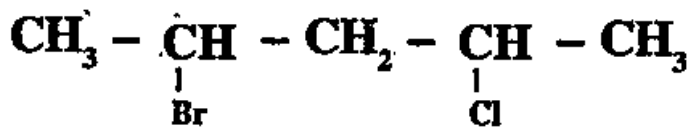


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161. Which aerosol depletes ozone layer ?

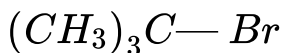
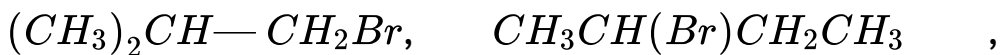
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162. Write the IUPAC name of the following compound:



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163. Predict the order of reactivity of the following compounds in dehydrohalogenation.



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**164.** An organic compound  $C_8H_{18}$  on monochlorination gives a single monochloride. Write the structure of the hydrocarbon.

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**165.** (a) Give reasons for the following:

(i) Ethyl iodide Undergoes  $SN_2$  reaction faster than ethyl bromide.

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**166.**  $RCI$  is hydrolysed to  $ROH$  slowly but the reaction is rapid if a catalyst amount of  $KI$  is added to the

reaction mixture. Explain.

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167. Why is (  $\pm$  ) butan-2-ol is optically inactive?

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168. How do polar solvents help in the first step in  $SN_1$  mechanism ?

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**169.** C — X bond length in halobenzene is smaller than C—X bond length in  $CH_3—X$ . Explain why?

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**170.** What is meant by chirality of a compound? Give an example.

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**171.** Which one undergoes  $S_N2$  substitution reaction faster and why?

1-bromobutane and 2-bromobutane.

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172. Which one of the following compounds is more easily hydrolyzed by  $KOH$  and why ?

$CH_3CHClCH_2CH_3$  or  $CH_3CH_2CH_2Cl$



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173. Discuss the preparation of haloalkanes from :

(a) alkenes (b) alcohols (c) Silver alkanoate



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**174.** Explain the chemical reaction of haloalkane

(a)  $RONa$  (b) Ethanolic ammonia (c) Alcoholic  $KOH$  (d)

Sodium in ether



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**175.** Discuss the nucleophilic substitution reaction ( $SN_1$  and  $SN_2$ ) of haloalkane with *aq. KOH* with mechanism.



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**176.** Write the preparation of haloarenes by (i) Substitution reaction (ii) Sandmeyer's reaction



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**177.** Discuss nucleophilic and electrophilic reactions of haloarene.



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**178.** What is Fittig and Wurtz-Fittig reaction?



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**179.** How the following conversion can be carried out ?

Aniline to phenylisocyanide





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**180.**  $CH_3CHClCH_2CH_3$  or  $CH_3CH_2CH_2Cl$

Which one undergoes  $SN_2$  substitution reaction faster and why?



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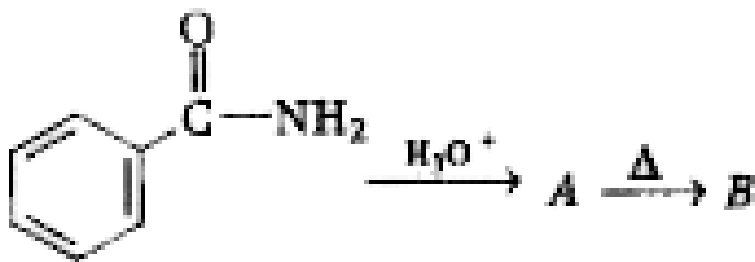
**181.** (a) Give reasons for the following:

(i) Ethyl iodide Undergoes  $SN_2$  reaction faster than ethyl bromide.



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182. Complete the following reactions



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183. What products would you expect from the elimination Of the following alkyl halides, which product will be major each case ?

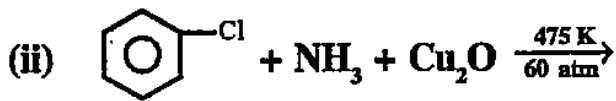
(i) 1-Bromo-2-methyl butane

(ii) 3-Bromo-2, 3,5,methylhexane

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184. Complete the following reactions:

(b) Complete the following reactions :



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185. What products would you expect from the elimination Of the following alkyl halides, which product will be major each case ?

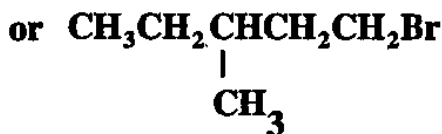
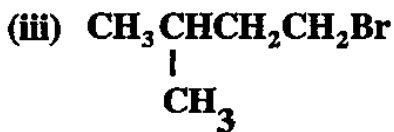
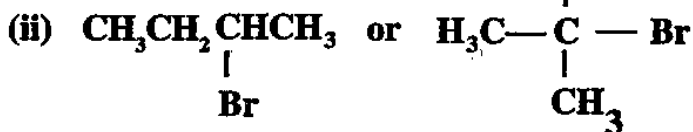
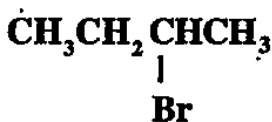
(i) 1-Bromo-2-methyl butane

(ii) 3-Bromo-2,3,5,methylhexane

186. Which alkyl halide from the following pairs would you expect to react more rapidly by an  $S_N2$  mechanism ?

Explain your answer.

**your answer.**



**187.** Although chlorine is an electron withdrawing group, yet is op directing in electrophilic aromatic substitution reaction. Explain.



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**188.** Haloarenes are much less reactive than haloalkanes towards nucleophilic substitution reaction. Give reason.



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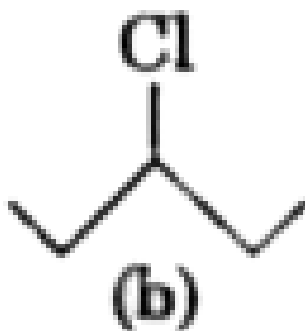
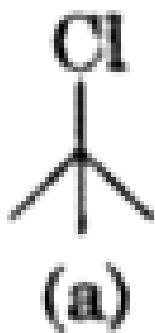
**189.** Arrange each set of compounds in the order of increasing boiling points.



Bromomethane, bromoform, chloromethane,  
dibromomethane

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**190.** In the following pairs of halogen compounds, which compound undergoes faster towards  $S_N1$  reactions?



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**191.** Why dipole moment of chlorobenzene is lower than that of cyclohexyl chloride ?

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**192.** A solution of KOH hydrolyses  $CH_3CHClCH_2CH_3$  and  $CH_3CH_2CH_2CH_2Cl$ . Which one of these is more easily hydrolysed?

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**193.** The treatment of alkyl chlorides with aqueous KOH leads to the formation of alcohols but in presence of alcoholic KOH, alkenes are major products. Explain.



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**194.** How will you bring about the conversion of methyl bromide to methyl iodide ?



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**195.** Chlorobenzene is extremely less reactive towards a nucleophilic substitution reaction. Give two reasons for the same.



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196. (i) Why does p-dichlorobenzene have a higher m.p. than its o- and m-isomers ?

(ii) Why is (dl)- butan- 2-ol Optically inactive ?

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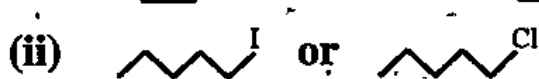
197. Account for the following :

(a) The  $C-Cl$  bond length in chlorobenzene is shorter than that in  $CH_3-Cl$ .

(b) Chloroform is stored in dark brown bottles.

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198. Which one in the following pairs of substances undergoes  $S_N^2$  substitution reaction faster and why?



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199. Convert the following in not more than two steps:

Propene to propyne

Ethanol to but-1-yne

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**200.** Reaction of haloalkanes with KCN produces alkyl cyanides as the main product while AgCN produces isocyanides as the chief product. Explain.



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