

## EXERCISE-I

## Introduction of Halogen containing compounds

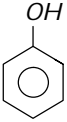
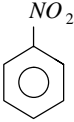

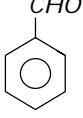
- How many structural isomers are possible for a compound with molecular formula  $C_3H_7Cl$   
(A) 2 (B) 5  
(C) 7 (D) 9
- In  $CH_3CH_2Br$ , % of Br is  
(A) 80 (B) 75  
(C) 70 (D) 7
- Gem- dibromide is  
(A)  $CH_3CH(Br)OH(Br)CH_3$   
(B)  $CH_3CBr_2CH_3$   
(C)  $CH_2(Br)CH_2CH_2$   
(D)  $CH_2BrCH_2Br$
- Ethylidene dibromide is  
(A)  $CH_3 - CH_2 - Br$   
(B)  $Br - CH_2 - CH_2 - Br$   
(C)  $CH_3 - CHBr_2$   
(D)  $CH_2 = CBr_2$
- Benzylidene chloride is  
(A)  $C_6H_5CH_2Cl$  (B)  $C_6H_5CHCl_2$   
(C)  $C_6H_4ClCH_2Cl$  (D)  $C_6H_5CCl_3$
- Which of the following halide is 2°  
(A) Isopropyl chloride (B) Isobutyl chloride  
(C) *n*-propyl chloride (D) *n*-butyl chloride
- Haloforms are trihalogen derivatives of  
(A) Ethane (B) Methane  
(C) Propane (D) Benzene
- Benzene hexachloride is  
(A) 1, 2, 3, 4, 5, 6-hexachlorocyclohexane  
(B) 1, 1, 1, 6, 6, 6-hexachlorocyclohexane  
(C) 1, 6-phenyl-1, 6-chlorohexane  
(D) 1, 1-phenyl-6, 6-chlorohexane
- Number of  $\pi$ -bonds present in *B.H.C.* (Benzene hexachloride) are  
(A) 6 (B) Zero  
(C) 3 (D) 12
- The general formula for alkyl halides is  
(A)  $C_nH_{2n+1}X$  (B)  $C_nH_{2n+2}X$   
(C)  $C_nH_{n+1}X$  (D)  $C_nH_{2n}X$

## Preparation of Halogen containing compounds

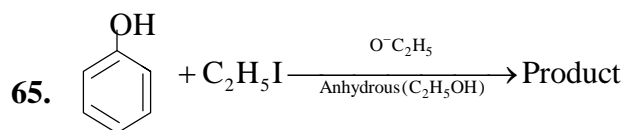
- Decreasing order of reactivity of HX in the reaction  $ROH + HX \rightarrow RX + H_2O$   
(A)  $HI > HBr > HCl > HF$   
(B)  $HBr > HCl > HI > HF$   
(C)  $HCl > HBr > HI > HF$   
(D)  $HF > HBr > HCl > HI$
- The product of the following reaction :  
 $CH_2 = CH - CCl_3 + HBr$   
(A)  $CH_3 - CH(Br) - CCl_3$   
(B)  $CH_2(Br) - CH_2 - CCl_3$   
(C)  $BrCH_2 - CHCl - CHCl_2$   
(D)  $CH_3 - CH_2 - CCl_3$
- Chlorobenzene is prepared commercially by  
(A) Raschig process  
(B) Wurtz Fitting reaction  
(C) Friedel-Craft's reaction  
(D) Grignard reaction
- In methyl alcohol solution, bromine reacts with ethylene to yield  $BrCH_2CH_2OCH_3$  in addition to 1, 2-dibromoethane because  
(A) The ion formed initially may react with  $Br^-$  or  $CH_3OH$   
(B) The methyl alcohol solvates the bromine  
(C) The reaction follows Markownikoff's rule  
(D) This is a free-radical mechanism
- $C_3H_8 + Cl_2 \xrightarrow{\text{Light}} C_3H_7Cl + HCl$  is an example of which of the following types of reactions  
(A) Substitution (B) Elimination  
(C) Addition (D) Rearrangement
- Which of the following would be produced when acetylene reacts with  $HCl$   
(A)  $CH_3CH_2Cl$  (B)  $CH_3CHCl_2$   
(C)  $CHCl = CHCl$  (D)  $CH_2 = CHCl$

17.  $R-OH + HX \rightarrow R-X + H_2O$   
In the above reaction, the reactivity of different alcohols is  
(A) Tertiary > Secondary > Primary  
(B) Tertiary < Secondary < Primary  
(C) Tertiary < Secondary > Primary  
(D) Secondary < Primary < Tertiary
18.  $C_6H_6 + Cl_2 \xrightarrow{UV\ Light}$  Product. In above reaction product is  
(A)  $CCl_3CHO$  (B)  $C_6H_6Cl_6$   
(C)  $C_6H_{12}Cl_6$  (D)  $C_6H_9Cl_2$
19. Benzene reacts with chlorine to form benzene hexachloride in presence of  
(A) Nickel (B)  $AlCl_3$   
(C) Bright sunlight (D) Zinc
20. The final product obtained by distilling ethyl alcohol with the excess of chlorine and  $Ca(OH)_2$  is  
(A)  $CH_3CHO$  (B)  $CCl_3CHO$   
(C)  $CHCl_3$  (D)  $(CH_3)_2O$
21. Chlorine reacts with ethanol to give  
(A) Ethyl chloride (B) Chloroform  
(C) Acetaldehyde (D) Chloral
22. On heating diethyl ether with conc.  $HI$ , 2 moles of which of the following is formed  
(A) Ethanol (B) Iodoform  
(C) Ethyl iodide (D) Methyl iodide
23. Lucas reagent is  
(A) Concentrated  $HCl$  + anhydrous  $ZnCl_2$   
(B) Dilute  $HCl$  + hydrated  $ZnCl_2$   
(C) Concentrated  $HNO_3$  + anhydrous  $ZnCl_2$   
(D) Concentrated  $HCl$  + anhydrous  $MgCl_2$
24. Which compound does not form iodoform with alkali and iodine  
(A) Acetone (B) Ethanol  
(C) Diethyl ketone (D) Isopropyl alcohol
25. Which compound gives yellow ppt. with iodine and alkali  
(A) 2-hydroxy propane (B) Acetophenone  
(C) Methyl acetone (D) Acetamide
26. Acetone reacts with  $I_2$  in presence of  $NaOH$  to form  
(A)  $C_2H_5I$  (B)  $C_2H_4I_2$   
(C)  $CHI_3$  (D)  $CH_3I$
27. Ethanol is converted into ethyl chloride by reacting with  
(A)  $Cl_2$  (B)  $SOCl_2$   
(C)  $HCl$  (D)  $NaCl$
28.  $C_6H_5Cl$  prepared by aniline with  
(A)  $HCl$   
(B)  $Cu_2Cl_2$   
(C)  $Cl_2$  in presence of anhydrous  $AlCl_3$   
(D)  $HNO_2$  and then heated with  $Cu_2Cl_2$
29. The starting substance for the preparation of  $CH_3I$  is  
(A)  $CH_3OH$  (B)  $C_2H_5OH$   
(C)  $CH_3CHO$  (D)  $(CH_3)_2CO$
30. A Grignard's reagent may be made by reacting magnesium with  
(A) Methyl amine (B) Diethyl ether  
(C) Ethyl iodide (D) Ethyl alcohol
31. When chlorine is passed through warm benzene in presence of the sunlight, the product obtained is  
(A) Benzotrichloride (B) Chlorobenzene  
(C) Gammexane (D) DDT
32. Which of the following acids adds to propene in the presence of peroxide to give anti-Markownikoff's product  
(A)  $HF$  (B)  $HCl$   
(C)  $HBr$  (D)  $HI$
33. Propene on treatment with  $HBr$  gives  
(A) Isopropyl bromide (B) Propyl bromide  
(C) 1, 2-dibromoethane (D) None of the above
34. The catalyst used in Raschig's process is  
(A)  $LiAlH_4$  (B) Copper chloride  
(C) Sunlight (D) Ethanol/ $Na$
35. The compound formed on heating chlorobenzene with chloral in the presence of concentrated sulphuric acid, is  
(A) Freon (B) DDT  
(C) Gammexene (D) Hexachloroethane

36. Acetone is mixed with bleaching powder to give  
 (A) Chloroform (B) Acetaldehyde  
 (C) Ethanol (D) Phosgene
37. Which of the following compounds gives trichloromethane on distilling with bleaching powder  
 (A) Methanal (B) Phenol  
 (C) Ethanol (D) Methanol
38. The product formed on reaction of ethyl alcohol with bleaching powder is  
 (A)  $\text{CHCl}_3$  (B)  $\text{CCl}_3\text{CHO}$   
 (C)  $\text{CH}_3\text{COCH}_3$  (D)  $\text{CH}_3\text{CHO}$
39. Ethylene reacts with bromine to form  
 (A) Chloroethane  
 (B) Ethylene dibromide  
 (C) Cyclohexane  
 (D) 1-bromo propane
40. Best method of preparing alkyl chloride is  
 (A)  $\text{ROH} + \text{SOCl}_2 \longrightarrow$   
 (B)  $\text{ROH} + \text{PCl}_5 \longrightarrow$   
 (C)  $\text{ROH} + \text{PCl}_3 \longrightarrow$   
 (D)  $\text{ROH} + \text{HCl} \xrightarrow{\text{anhy. ZnCl}_2}$
- Properties of Halogen containing compounds**
41. The reactivity of ethyl chloride is  
 (A) More or less equal to that of benzyl chloride  
 (B) More than that of benzyl chloride  
 (C) More or less equal to that of chlorobenzene  
 (D) Less than that of chlorobenzene
42. The reactivity of halogen atom is minimum in  
 (A) Propyl chloride (B) Propyl iodide  
 (C) Isopropyl chloride (D) Isopropyl bromide
43. Chlorobenzene is  
 (A) Less reactive than benzyl chloride  
 (B) More reactive than ethyl bromide  
 (C) Nearly as reactive as methyl chloride  
 (D) More reactive than isopropyl chloride
44. The reactivities of methyl chloride, propyl chloride and chlorobenzene are in the order  
 (A) Methyl chloride > propyl chloride > chlorobenzene  
 (B) Propyl chloride > methyl chloride > chlorobenzene  
 (C) Methyl chloride > chlorobenzene > propyl chloride  
 (D) Chlorobenzene > propyl chloride > methyl chloride
45. Which of the following compound will make precipitate most readily with  $\text{AgNO}_3$   
 (A)  $\text{CCl}_3\text{CHO}$  (B)  $\text{CHCl}_3$   
 (C)  $\text{C}_6\text{H}_5\text{CH}_2\text{Cl}$  (D)  $\text{CHI}_3$
46. Carbylamine is liberated when..... is heated with chloroform and alcoholic potash  
 (A) An aldehyde (B) A primary amine  
 (C) A secondary amine (D) A phenol
47. Salicylic acid can be prepared using Reimer-Tiemann's reaction by treating phenol with  
 (A) Methyl chloride in the presence of anhydrous aluminium chloride  
 (B) Carbon dioxide under pressure in sodium hydroxide solution  
 (C) Carbon tetrachloride and concentrated sodium hydroxide  
 (D) Sodium nitrite and a few drops of concentrated sulphuric acid
48. Grignard reagent is prepared by the reaction between  
 (A) Zinc and alkyl halide  
 (B) Magnesium and alkyl halide  
 (C) Magnesium and alkane  
 (D) Magnesium and aromatic hydrocarbon
49. Reaction of *t*-butyl bromide with sodium methoxide produces  
 (A) Isobutane  
 (B) Isobutylene  
 (C) Sodium *t*-butoxide  
 (D) *t*-butyl methyl ether
50. War gas is formed from  
 (A)  $\text{PH}_3$  (B)  $\text{C}_2\text{H}_2$   
 (C) Zinc phosphate (D) Chloropicrin

51. Which of the following statements about chloroform is false  
 (A) It is a colourless, sweet-smelling liquid  
 (B) It is almost insoluble in water  
 (C) It is highly inflammable  
 (D) It can be used as an inhalational anaesthetic agent
52.  $\text{CCl}_4$  cannot give precipitate with  $\text{AgNO}_3$  due to  
 (A) Formation of complex with  $\text{AgNO}_3$   
 (B) Evolution of  $\text{Cl}_2$  gas  
 (C) Chloride ion is not formed  
 (D)  $\text{AgNO}_3$  does not give silver ion
53. On heating  $\text{CHCl}_3$  with aq.  $\text{NaOH}$ , the product is  
 (A)  $\text{CH}_3\text{COONa}$  (B)  $\text{HCOONa}$   
 (C) Sodium oxalate (D)  $\text{CH}_3\text{OH}$
54. Ethyl bromide reacts with lead-sodium alloy to form  
 (A) Tetraethyl lead  
 (B) Tetraethyl bromide  
 (C) Both (A) and (B)  
 (D) None of the above
55. Iodoform heated with Ag powder to form  
 (A) Acetylene (B) Ethylene  
 (C) Methane (D) Ethane
56. Ethyl bromide reacts with silver nitrite to form  
 (A) Nitroethane  
 (B) Nitroethane and ethyl nitrite  
 (C) Ethyl nitrite  
 (D) Ethane
57. Which of the following reactions leads to the formation of chloritone  
 (A)  $\text{CHCl}_3 + \text{CH}_3\text{COCH}_3$   
 (B)  $\text{CCl}_4 + \text{Acetone}$   
 (C)  $\text{CHCl}_3 + \text{KOH}$   
 (D)  $\text{CHCl}_3 + \text{HNO}_3$
58.  $\text{CH}_3 - \text{CH}_2 - \text{CH}_2\text{Br} + \text{KOH (alc.)} \rightarrow \text{Product}$   
 Product in above reaction is  
 (A)  $\text{CH}_3 - \text{CH} = \text{CH}_2$  (B)  $\text{CH}_3 - \text{CH}_2 - \text{CH}_3$   
 (C) (A) and (B) both (D) None of these
59.  $\text{A} + \text{CCl}_4 + \text{KOH} \rightarrow \text{Salicylic acid}$   
 'A' in above reaction is  
 (A)  (B)   
 (C)  (D) 
60. Identify X and Y in the following sequence  
 $\text{C}_2\text{H}_5\text{Br} \xrightarrow{\text{X}} \text{product} \xrightarrow{\text{Y}} \text{C}_3\text{H}_7\text{NH}_2$   
 (A)  $\text{X} = \text{KCN}$ ,  $\text{Y} = \text{LiAlH}_4$   
 (B)  $\text{X} = \text{KCN}$ ,  $\text{Y} = \text{H}_3\text{O}^+$   
 (C)  $\text{X} = \text{CH}_3\text{Cl}$ ,  $\text{Y} = \text{AlCl}_3 / \text{HCl}$   
 (D)  $\text{X} = \text{CH}_3\text{NH}_2$ ,  $\text{Y} = \text{HNO}_2$
61. A compound A has a molecular formula  $\text{C}_2\text{Cl}_3\text{OH}$ . It reduces Fehling solution and on oxidation gives a monocarboxylic acid (B). A is obtained by action of chlorine on ethyl alcohol. A is  
 (A) Chloral (B)  $\text{CHCl}_3$   
 (C)  $\text{CH}_3\text{Cl}$  (D) Chloroacetic acid
62. Following equation illustrates  

$$\text{C}_6\text{H}_5\text{Cl} + 2\text{NaOH} \xrightarrow[200 \text{ atm}]{200-250^\circ \text{C}} \text{C}_6\text{H}_5\text{ONa} + \text{NaCl} + \text{H}_2\text{O}$$
  
 (A) Dow's process (B) Kolbe's process  
 (C) Carbylamine test (D) Haloform reaction
63. One of the following that cannot undergo dehydro-halogenation is  
 (A) Iso-propyl bromide (B) Ethanol  
 (C) Ethyl bromide (D) None of these
64. A compound X on reaction with chloroform and  $\text{NaOH}$  gives a compound with a very unpleasant odour. X is  
 (A)  $\text{C}_6\text{H}_5\text{CONH}_2$  (B)  $\text{C}_6\text{H}_5\text{NH}_2$   
 (C)  $\text{C}_6\text{H}_5\text{CH}_2\text{NHCH}_3$  (D)  $\text{C}_6\text{H}_5\text{NHCH}_3$



In the above reaction product is

- (A) C<sub>6</sub>H<sub>5</sub>OC<sub>2</sub>H<sub>5</sub> (B) C<sub>2</sub>H<sub>5</sub>OC<sub>2</sub>H<sub>5</sub>  
 (C) C<sub>6</sub>H<sub>5</sub>OC<sub>6</sub>H<sub>5</sub> (D) C<sub>6</sub>H<sub>5</sub>I
66. C<sub>2</sub>H<sub>5</sub>Cl + KCN  $\longrightarrow$  X  $\xrightarrow{\text{Hydrolysis}}$  Y. 'X' and 'Y' are  
 (A) C<sub>2</sub>H<sub>6</sub> and C<sub>2</sub>H<sub>5</sub>CN  
 (B) CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>OH, and CH<sub>3</sub> - CHOH - CH<sub>3</sub>  
 (C) CH<sub>3</sub> - C(CH<sub>3</sub>)(OH) - CH<sub>3</sub> and C<sub>2</sub>H<sub>5</sub>CH<sub>2</sub>NH<sub>2</sub>  
 (D) C<sub>2</sub>H<sub>5</sub>CN and C<sub>2</sub>H<sub>5</sub>COOH
67. Iodoform is formed on warming I<sub>2</sub> and NaOH with  
 (A) C<sub>2</sub>H<sub>5</sub>OH (B) CH<sub>3</sub>OH  
 (C) HCOOH (D) C<sub>6</sub>H<sub>6</sub>
68. Which of the following reacts with phenol to give salicylaldehyde after hydrolysis  
 (A) Dichloromethane  
 (B) Trichloromethane  
 (C) Methyl chloride  
 (D) None of these
69. Dehydrohalogenation in monohaloalkanes produces  
 (A) A single bond (B) A double bond  
 (C) A triple bond (D) Fragmentation
70. When chloroform is treated with conc. HNO<sub>3</sub> it gives  
 (A) CHCl<sub>2</sub>NO<sub>2</sub> (B) CCl<sub>3</sub>NO<sub>2</sub>  
 (C) CHCl<sub>2</sub>HNO<sub>3</sub> (D) None of these
71. When chloroform is treated with excess oxygen it forms  
 (A) COCl<sub>2</sub> + HCl  
 (B) COCl<sub>2</sub> + Cl<sub>2</sub> + H<sub>2</sub>  
 (C) COCl<sub>2</sub> + Cl<sub>2</sub> + H<sub>2</sub>O  
 (D) No product will be formed
72. Which isomer of cyclohexane hexachloride is a very strong insecticide  
 (A) α (B) β  
 (C) γ (D) δ

73. Haloalkane in the presence of alcoholic KOH undergoes  
 (A) Elimination (B) Polymerisation  
 (C) Dimerisation (D) Substitution
74. The set of compounds in which the reactivity of halogen atom in the ascending order is  
 (A) Vinyl chloride, chloroethane, chlorobenzene  
 (B) Vinyl chloride, chlorobenzene, chloroethane  
 (C) Chloroethane, chlorobenzene, vinyl chloride  
 (D) Chlorobenzene, vinyl chloride chloroethane
75. Alkyl halides react with Mg in dry ether to form  
 (A) Magnesium halide (B) Grignard's reagent  
 (C) Alkene (D) Alkyne
76. In the following sequence of reactions  
 CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>Br  $\xrightarrow{\text{KOH(alc)}}$  (A)  $\xrightarrow{\text{HBr}}$  (B)  $\xrightarrow{\text{KOH(aq.)}}$  (C),  
 The product (C) is  
 (A) Propan - 2 - ol (B) Propan - 1 - ol  
 (C) Propyne (D) Propene
77. Alkyl halide on heating with alc. NH<sub>3</sub> in a sealed tube results...  
 (A) 1° amine (B) 2° amine  
 (C) 3° amine (D) All of these
78. When CH<sub>3</sub>CH<sub>2</sub>CHCl<sub>2</sub> is treated with NaNH<sub>2</sub>, the product formed is  
 (A) CH<sub>3</sub> - CH = CH<sub>2</sub>  
 (B) CH<sub>3</sub> - C ≡ CH  
 (C) CH<sub>3</sub>CH<sub>2</sub>CH(NH<sub>2</sub>)(Cl)  
 (D) CH<sub>3</sub>CH<sub>2</sub>C(NH<sub>2</sub>)<sub>2</sub>
79. By heating a mixture of CHCl<sub>3</sub> with silver powder, the compound formed is  
 (A) Acetylene (B) Silver acetate  
 (C) Methanol (D) None of these
80. Chloropicrin is  
 (A) Trichloro acetaldehyde  
 (B) Nitrochloroform  
 (C) 2,4,6-trinitro phenol  
 (D) None of these
81. Reduction of acetyl chloride with H<sub>2</sub> in presence of Pd gives  
 (A) CH<sub>3</sub>COCH<sub>3</sub> (B) C<sub>2</sub>H<sub>5</sub>OH  
 (C) CH<sub>3</sub>COOH (D) CH<sub>3</sub>CHO

82. When methyl bromide is heated with Zn it gives  
 (A)  $\text{CH}_4$  (B)  $\text{C}_2\text{H}_6$   
 (C)  $\text{C}_2\text{H}_4$  (D)  $\text{CH}_3\text{OH}$
83. Phenol reacts with  $\text{CHCl}_3$  and  $\text{NaOH}$  (at 340K) to give  
 (A) *o*-chlorophenol (B) Salicylaldehyde  
 (C) Benzaldehyde (D) Chlorobenzene
84. Iodoform on heating with KOH gives  
 (A)  $\text{CH}_3\text{CHO}$  (B)  $\text{CH}_3\text{COOK}$   
 (C)  $\text{HCOOK}$  (D)  $\text{HCHO}$
85. Which reaction is correct in the conversion of chloroform to acetylene  
 (A)  $\text{CHCl}_3 + \text{AgNO}_3$  (B)  $\text{CHCl}_3 + \text{O}_2$   
 (C)  $\text{CHCl}_3 + \text{HNO}_3$  (D)  $\text{CHCl}_3 + \text{Ag}$
86. Which of the following gases are poisonous  
 (A)  $\text{CHCl}_3$  (B)  $\text{CO}_2$   
 (C) None of these (D)  $\text{CO}$
87. Which of the following alkyl halide is used as a methylating agent  
 (A)  $\text{CH}_3\text{I}$  (B)  $\text{C}_2\text{H}_5\text{Br}$   
 (C)  $\text{C}_2\text{H}_5\text{Cl}$  (D)  $\text{C}_6\text{H}_5\text{Cl}$
88.  $\text{C}_6\text{H}_6\text{Cl}_6$ , on treatment with alcoholic KOH, yields  
 (A)  $\text{C}_6\text{H}_6$  (B)  $\text{C}_6\text{H}_3\text{Cl}_3$   
 (C)  $(\text{C}_6\text{H}_5)_2\text{O}$  (D)  $\text{C}_6\text{H}_6\text{Cl}_4$
89. When ethyl iodide is heated with silver nitrate, the product obtained is  
 (A)  $\text{C}_2\text{H}_5\text{Ag}$  (B)  $\text{Ag}-\text{O}-\text{NO}_2$   
 (C)  $\text{C}_2\text{H}_5\text{O}-\text{NO}_2$  (D)  $\text{C}_2\text{H}_5\text{I}-\text{NO}_2$
90.  $\text{CHCl}_3$  and  $\text{HF}$  lead to the formation of a compound of fluorine of molecular weight 70. The compound is  
 (A) Fluoroform (B) Fluorine monoxide  
 (C) Fluorine dioxide (D) Fluoromethanol
91. In which case formation of butane nitrile is possible  
 (A)  $\text{C}_3\text{H}_7\text{Br} + \text{KCN}$  (B)  $\text{C}_4\text{H}_9\text{Br} + \text{KCN}$   
 (C)  $\text{C}_3\text{H}_7\text{OH} + \text{KCN}$  (D)  $\text{C}_4\text{H}_9\text{OH} + \text{KCN}$
92. The reaction of an aromatic halogen compound with an alkyl halides in presence of sodium and ether is called  
 (A) Wurtz reaction  
 (B) Sandmeyer's reaction  
 (C) Wurtz-fittig reaction  
 (D) Kolbe reaction
93. The compound added to prevent chloroform to form phosgene gas is  
 (A)  $\text{C}_2\text{H}_5\text{OH}$  (B)  $\text{CH}_3\text{COOH}$   
 (C)  $\text{CH}_3\text{COCH}_3$  (D)  $\text{CH}_3\text{OH}$
94. Among the following, the one which reacts most readily with ethanol is  
 (A) *p*-nitrobenzyl bromide  
 (B) *p*-chlorobenzyl bromide  
 (C) *p*-methoxybenzyl bromide  
 (D) *p*-methylbenzyl bromide
95. Chloropicrin is obtained by the reaction of  
 (A) Chlorine on picric acid  
 (B) Nitric acid on chloroform  
 (C) Steam on carbon tetrachloride  
 (D) Nitric acid on chlorobenzene
96. In Wurtz reaction alkyl halide react with  
 (A) Sodium in ether  
 (B) Sodium in dry ether  
 (C) Sodium only  
 (D) Alkyl halide in ether
97. Chloroform, when kept open, is oxidised to  
 (A)  $\text{CO}_2$  (B)  $\text{COCl}_2$   
 (C)  $\text{CO}_2, \text{Cl}_2$  (D) None of these
98. Chloroform reacts with concentrated  $\text{HNO}_3$  to give  
 (A) Water gas (B) Tear gas  
 (C) Laughing gas (D) Producer gas
99. When ethyl chloride and alcoholic KOH are heated, the compound obtained is  
 (A)  $\text{C}_2\text{H}_4$  (B)  $\text{C}_2\text{H}_2$   
 (C)  $\text{C}_6\text{H}_6$  (D)  $\text{C}_2\text{H}_6$
100. Chloroform, on warming with Ag powder, gives  
 (A)  $\text{C}_2\text{H}_6$  (B)  $\text{C}_3\text{H}_8$   
 (C)  $\text{C}_2\text{H}_4$  (D)  $\text{C}_2\text{H}_2$

- 101.** When alkyl halide is heated with dry  $\text{Ag}_2\text{O}$ , it produces  
 (A) Ester (B) Ether  
 (C) Ketone (D) Alcohol
- 102.** Reaction of alkyl halides with aromatic compounds in presence of anhydrous  $\text{AlCl}_3$  is known as  
 (A) Friedal-Craft reaction  
 (B) Hofmann degradation  
 (C) Kolbe's synthesis  
 (D) Beckmann rearrangement
- 103.** Two percent of ethanol is added during the oxidation of chloroform to stop the formation of carbonyl chloride. In this reaction ethanol acts as  
 (A) Auto catalyst (B) Negative catalyst  
 (C) Positive catalyst (D) None of these
- 104.** When benzene is heated with chlorine in the presence of sunlight, it forms  
 (A) B.H.C. (B) Cyclopropane  
 (C) *p*-dichlorobenzene (D) None of these
- 105.** Ethylene di bromide on heating with metallic sodium in ether solution yields  
 (A) Ethene (B) Ethyne  
 (C) 2-butene (D) 1-butene
- 106.** The reaction,  $\text{CH}_3\text{Br} + \text{Na} \rightarrow \text{Product}$ , is called  
 (A) Perkin reaction  
 (B) Levit reaction  
 (C) Wurtz reaction  
 (D) Aldol condensation
- 107.** At normal temperature iodoform is  
 (A) Thick viscous liquid (B) Gas  
 (C) Volatile liquid (D) Solid
- 108.** Which of the following statements about benzyl chloride is incorrect  
 (A) It is less reactive than alkyl halides  
 (B) It can be oxidised to benzaldehyde by boiling with copper nitrate solution  
 (C) It is a lachrymatory liquid and answers Beilstein's test  
 (D) It gives a white precipitate with alcoholic silver nitrate
- 109.** Ethylene dichloride and ethylidene chloride are isomeric compounds. The false statement about these isomers is that they  
 (A) React with alcoholic potash and give the same product  
 (B) Are position isomers  
 (C) Contain the same percentage of chlorine  
 (D) Are both hydrolysed to the same product
- 110.** An alkyl bromide (X) reacts with *Na* to form 4, 5-diethyloctane. Compound X is  
 (a)  $\text{CH}_3(\text{CH}_2)_3\text{Br}$   
 (b)  $\text{CH}_3(\text{CH}_2)_5\text{Br}$   
 (c)  $\text{CH}_3(\text{CH}_2)_3\text{CH.Br.CH}_3$   
 (d)  $\text{CH}_3(\text{CH}_2)_2\text{CH.Br.CH}_2\text{CH}_3$
- 111.** In the following reaction X is  

$$\text{CH}_3\text{NH}_2 + \text{X} + \text{KOH} \rightarrow \text{CH}_3\text{NC}$$
 (highly offensive odour)  
 (A)  $\text{CH}_2\text{Cl}_2$  (B)  $\text{CHCl}_3$   
 (C)  $\text{CH}_3\text{Cl}$  (D)  $\text{CCl}_4$
- 112.** Which metal is used in Wurtz synthesis  
 (A) *Ba* (B) *Al*  
 (C) *Na* (D) *Fe*
- 113.** Which of the following is boiled with ethyl chloride to form ethyl alcohol  
 (A) Alcoholic *KOH* (B) Aqueous *KOH*  
 (C)  $\text{H}_2\text{O}$  (D)  $\text{H}_2\text{O}_2$
- 114.** Why is chloroform put into dark coloured bottles  
 (A) To prevent evaporation  
 (B) To prevent from moisture  
 (C) To prevent it from oxidation to form phosgene  
 (D) To prevent its reaction with glass
- 115.** DDT is  
 (A) A solid (B) A liquid  
 (C) A gas (D) A solution

116. Bottles containing  $C_6H_5I$  and  $C_6H_5CH_2I$  lost their original labels. They were labelled *A* and *B* for testing. *A* and *B* were separately taken in test tubes and boiled with  $NaOH$  solution. The end solution in each tube was made acidic with dilute  $HNO_3$  and then some  $AgNO_3$  solution was added. Substance *B* give a yellow precipitate. Which one of the following statements is true for this experiment

- (A) *A* was  $C_6H_5I$   
 (B) *A* was  $C_6H_5CH_2I$   
 (C) *B* was  $C_6H_5I$   
 (D) Addition of  $HNO_3$  was unnecessary

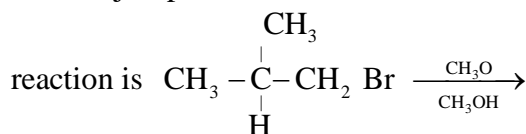
117. Which of the following statements is incorrect regarding benzyl chloride

- (A) It gives white precipitate with alcoholic  $AgNO_3$   
 (B) It is an aromatic compound with substitution in the side chain  
 (C) It undergoes nucleophilic substitution reaction  
 (D) It is less reactive than vinyl chloride

118. Alkyl halide can be converted into alkene by

- (A) Nucleophilic substitution reaction  
 (B) Elimination reaction  
 (C) Both nucleophilic substitution and elimination reaction  
 (D) Rearrangement

119. The major product formed in the following



- (A) 
$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3 - \text{C} - \text{CH}_2\text{OCH}_3 \\ | \\ \text{H} \end{array}$$
  
 (B) 
$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3 - \text{CH} - \text{CH}_2\text{CH}_3 \\ | \\ \text{OCH}_3 \end{array}$$
  
 (C) 
$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3 - \text{C} = \text{CH}_2 \end{array}$$
  
 (D) 
$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3 - \text{C} - \text{CH}_3 \\ | \\ \text{OCH}_3 \end{array}$$

120. The major product obtained on treatment of  $\text{CH}_3\text{CH}_2\text{CH}(\text{F})\text{CH}_3$  with  $\text{CH}_3\text{O}^- / \text{CH}_3\text{OH}$  is

- (A)  $\text{CH}_3\text{CH}_2\text{CH}(\text{OCH}_3)\text{CH}_3$   
 (B)  $\text{CH}_3\text{CH} = \text{CHCH}_3$   
 (C)  $\text{CH}_3\text{CH}_2\text{CH} = \text{CH}_2$   
 (D)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OCH}_3$

### Uses of Halogen Containing Compounds

121. Which is used in the manufacture of plastic

- (A)  $\text{CH}_2 = \text{CHCl}$  (B)  $\text{CH} \equiv \text{CH}$   
 (C)  $\text{CH}_2 = \text{CH} - \text{CH}_2\text{I}$  (D)  $\text{CCl}_4$

122. Freon (dichlorodifluoro methane) is used

- (A) As local anaesthetic  
 (B) For dissolving impurities in metallurgical process  
 (C) In refrigerator  
 (D) In printing industry

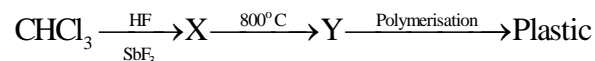
123. Which of the following is known as freon which is used as a refrigerant

- (A)  $\text{CCl}_2\text{F}_2$  (B)  $\text{CHCl}_3$   
 (C)  $\text{CH}_2\text{F}_2$  (D)  $\text{CF}_4$

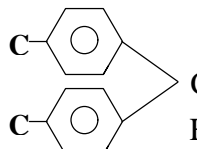
124. Benzene hexachloride (BHC) is used as

- (A) Dye (B) Antimalarial drug  
 (C) Antibiotic (D) Insecticide

125. Which plastic is obtained from  $\text{CHCl}_3$  as follows



- (A) Bakelite (B) Teflon  
 (C) Polythene (D) Perspex

126.  . The above structural formula refers to

- (A) BHC (B) DDT  
 (C) DDT (D) RNA



**127.** The commercial uses of DDT and benzene hexachloride are

- (A) DDT is a herbicide, benzene hexachloride is a fungicide
- (B) Both are insecticides
- (C) Both are herbicides
- (D) DDT is a fungicide and benzene hexachloride is a herbicide

**128.** Which of the following is used in fire extinguishers

- (A)  $\text{CH}_4$
- (B)  $\text{CHCl}_3$
- (C)  $\text{CH}_2\text{Cl}_2$
- (D)  $\text{CCl}_4$

**129.** Iodoform can be used as

- (A) Anaesthetic
- (B) Antiseptic
- (C) Analgesic
- (D) Antifebrin

**130.** Which of the following is an anaesthetic

- (A)  $\text{C}_2\text{H}_4$
- (B)  $\text{CHCl}_3$
- (C)  $\text{CH}_3\text{Cl}$
- (D)  $\text{C}_2\text{H}_5\text{OH}$