

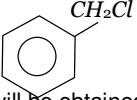
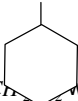
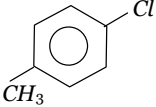
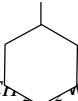
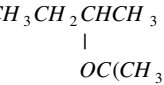
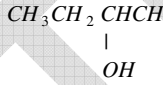




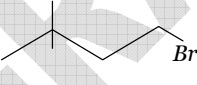
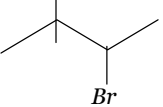
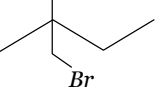
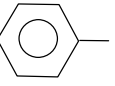
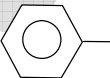
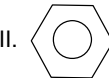
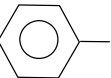
Halogen Derivatives Assignment

- A mixture of two organic chlorine compounds was treated sodium metal in ether solution. Isobutane was obtained as a product. The two chlorine compounds are
 - Methyl chloride and propyl chloride
 - Methyl chloride and ethyl chloride
 - Isopropyl chloride and methyl chloride
 - Isopropyl chloride and ethyl chloride
- An alkyl halide may be converted into an alcohol by
 - Addition
 - Substitution
 - Dehydrohalogenation
 - Elimination
- Ethyl bromide can be converted into ethyl alcohol by
 - Heating with dilute hydrochloric acid and zinc
 - Boiling with an alcoholic solution of KOH
 - The action of moist silver oxide
 - Refluxing methanol
- When ethyl iodide is heated with silver nitrite the product obtained is
 - C_2H_5Ag
 - $Ag-O-NO_2$
 - $C_2H_5-NO_2$
 - $C_2H_5I-NO_2$
- Which of the following are correct statements about C_2H_5Br
 - It reacts with metallic Na to give ethane
 - It gives nitroethane on heating with aqueous ethanolic solution of $AgNO_2$
 - It gives C_2H_5OH on boiling with alcoholic potash
 - It forms ethylacetate on heating with silver acetate
- Reaction of t -butyl bromide with sodium methoxide produces
 - Isobutane
 - Isobutylene
 - Sodium t -butoxide
 - t -butyl methyl ether
- Which of the following reactions gives $H_2C=C=CH_2$
 - $CH_2Br-CBr=CH_2 \xrightarrow{Zn/CH_3OH}$
 - $HC\equiv C-CH_2-COOH \xrightarrow[40^\circ C]{Aq. K_2CO_3}$
 - $CH_2Br-C\equiv C-CH_2Br \xrightarrow[Heat]{Zn}$
 - $2CH_2=CH-CH_2I \rightarrow$
- The hybridisation state of carbon atoms in the product formed by the reaction of ethyl chloride with aqueous potassium hydroxide is
 - sp
 - sp^2
 - sp^3
 - sp^3d
- Reaction of aqueous sodium hydroxide on (i) ethyl bromide and (ii) chlorobenzene gives
 - (i) Ethene and (ii) o -chlorophenol
 - (i) Ethyl alcohol and (ii) o -chlorophenol
 - (i) Ethyl alcohol and (ii) phenol
 - (i) Ethyl alcohol and (ii) no reaction
- Ethylidene chloride on treatment with aqueous KOH gives
 - Ethylene glycol
 - Acetaldehyde
 - Formaldehyde
 - None of these
- 1-chlorobutane reacts with alcoholic KOH to form
 - 1-butene
 - 2-butene
 - 1-butanol
 - 2-butanol
- Compound A reacts with PCl_5 to give B which on treatment with KCN followed by hydrolysis gave propionic acid. What is A and B respectively
 - C_3H_8 and C_3H_7Cl
 - C_2H_6 and C_2H_5Cl
 - C_2H_5Cl and C_2H_5Cl
 - C_2H_5OH and C_2H_5Cl
- A compound X on reaction with chloroform and $NaOH$ gives a compound with a very unpleasant odour X is
 - $C_6H_5CONH_2$
 - $C_6H_5NH_2$
 - $C_6H_5CH_2NHCH_3$
 - $C_6H_5NHCH_3$
- A compound A has a molecular formula C_2Cl_3OH . It reduces Fehling solution and on oxidation gives a monocarboxylic acid
 - A is obtained by action of chlorine on ethyl alcohol. A is
 - Chloral
 - $CHCl_3$
 - CH_3Cl
 - Chloroacetic acid
- In the reaction $CH_3NH_2 + X + KOH \rightarrow CH_3NC$ (highly offensive odour) 'X' is
 - CH_2Cl_2
 - $CHCl_3$
 - CH_3Cl
 - CCl_4
- Which plastic is obtained from $CHCl_3$ as follows $CHCl_3 \xrightarrow[SbF_3]{HF} X \xrightarrow{800^\circ C} Y \xrightarrow{\text{Polymerisation}} \text{Plastic}$
 - Bakelite
 - Teflon
 - Polythene
 - Perspex
- An aromatic amine (a) was treated with alcoholic potash and another compound (Y) when foul smelling gas was formed with formula C_6H_5NC . Y was formed by reacting a compound (Z) with Cl_2 in the presence of slaked lime. The compound (Z) is
 - $C_6H_5NH_2$
 - C_2H_5OH
 - CH_3OCH_3
 - $CHCl_3$
- In the following sequence of reactions $CH_3CH_2CH_2Br \xrightarrow{KOH(aq.)} (A) \xrightarrow{HBr} (B) \xrightarrow{KOH(aq.)} (C)$. The product (c) is
 - Propan-2-ol
 - Propan-1-ol
 - Propyne
 - Propene
- $C_2H_5Cl + KCN \rightarrow X \xrightarrow{\text{Hydrolysis}} Y$. 'X' and 'Y' are

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- (a) C_2H_6 and C_2H_5CN (b) C_2H_5CN and C_2H_6
 (c) C_2H_5CN and $C_2H_5CH_2NH_2$ (d) C_2H_5CN and C_2H_5COOH
20. In the sequence of the following reactions $CH_3OH \xrightarrow{HI} CH_3I \xrightarrow{KCN} CH_3CN \xrightarrow{\text{reduction}} X \xrightarrow{HNO_2} Y$; X and Y are respectively
 (a) $CH_3CH_2NH_2$ and CH_3CH_2OH (b) $CH_3CH_2NH_2$ and CH_3COOH
 (c) CH_3CH_2OH and CH_3CHO (d) CH_3OCH_3 and CH_3CHO
21. Identify Z in the following series $C_2H_5I \xrightarrow{\text{alc. KOH}} X \xrightarrow{Br_2} Y \xrightarrow{KCN} Z$
 (a) CH_3CH_2CN (b) $\begin{matrix} CH_2CN \\ | \\ CH_2CN \end{matrix}$ (c) $BrCH_2-CH_2CN$ (d) $BrCH=CHCN$
22. Phenol $\xrightarrow[\text{Distillation}]{Zn} A \xrightarrow[\text{conc. HNO}_3]{\text{conc. H}_2\text{SO}_4} B \xrightarrow[\text{NaOH}]{Zn} C$. In this reaction A, B and C are the following compounds
 (a) C_6H_6 , $C_6H_5NO_2$ and aniline (b) C_6H_6 , dinitrobenzene and metanitroaniline
 (c) Toluene, metanitrobenzene and metatoluedine (d) C_6H_6 , $C_6H_5NO_2$ and hydrazobenzene
23. Wurtz reaction of methyl iodide yields an organic compound X. Which one of the following reactions also yields X
 (a) $C_2H_5Cl + Mg \xrightarrow{\text{dry ether}}$ (b) $C_2H_5Cl + LiAlH_4 \rightarrow$
 (c) $C_2H_5Cl + C_2H_5ONa \rightarrow$ (d) $CHCl_3 \xrightarrow[\Delta]{Ag \text{ powder}}$
24. $CH_3-CH_2-Br \xrightarrow{\text{alc. KCN}} CH_3CH_2CN \xrightarrow{HOH} X$, then X is
 (a) Acetic acid (b) Propionic acid (c) Butyric acid (d) Formic acid
25. An alkyl bromide (X) reacts with Na to form 4, 5-diethyloctane. Compound X is
 (a) $CH_3(CH_2)_3Br$ (b) $CH_3(CH_2)_5Br$
 (c) $CH_3(CH_2)_3CH.Br.CH_3$ (d) $CH_3(CH_2)_2CH.Br.CH_2CH_3$
26. An organic halide, $C_2H_4Cl_2$, gives an unsaturated hydrocarbon on treatment with alc. KOH, but ethanal on reaction with aq. KOH the dihalide is
 (a) CH_3CHCl_2 (b) CH_2ClCH_2Cl (c) A mixture of (a) and (b) (d) None of these
27. In the reaction $RI + Mg \rightarrow A \xrightarrow{H_2O} \text{propane}$; the alkyl halide is
 (a) Methyl iodide (b) Ethyl iodide (c) Ethyl bromide (d) Propyl bromide
28. In the reaction $CH_3MgX + CH_3OH \rightarrow A$, the product formed (a) is
 (a) Alcohol (b) Acetone (c) Ethane (d) Methane
29. In the reaction $CH_3-\underset{Br}{\underset{|}{CH}}-CH_3 \xrightarrow[\text{peroxide}]{\text{alc. KOH}} A \xrightarrow[\text{acetone}]{NaI} C$. C is
 (a) $CH_3CH_2CH_2I$ (b) $CH_3-\underset{I}{\underset{|}{CH}}-CH_3$ (c) $CH_3-\underset{I}{\underset{|}{CH}}-CH_2I$ (d) $CH_3CH=CHI$
30. In the reaction chlorobenzene + Mg $\xrightarrow[\text{ether}]{\text{dry}} A \xrightarrow{EtOH} B$ the product formed (b) is
 (a) Ethylbenzene (b) Phenol (c) Benzene (d) Phenylmethyl ether
31. Arrange the following compounds according to their relative reactivity with alcoholic silver nitrate or with KCN
 $C_6H_5CH_2Br$ (I), $n-C_6H_{13}Br$ (II) and C_6H_5Br (III)
 (a) I > II > III (b) III > II > I (c) I > III > II (d) I = II > III
32. Arrange the following compounds in order of their relative reactivity with alcoholic silver nitrate
 $C_6H_5CH_2CH_2Br$ (I) $C_6H_5CHBrCH_3$ (II) and $C_6H_5CH=CHBr$ (III)
 (a) II > I > III (b) I > II > III (c) III > II > I (d) II = I > III
33. Arrange the following compounds according to their relative reactivity with alcoholic $AgNO_3$
t-butyl chloride (I), Sec-butyl chloride (II) and CCl_4 (III)
 (a) I > II > III (b) III > II > I (c) II > I > III (d) II = III > I
34. Arrange the nucleophilicity (rate of S_N2 reactivity) of H_2O, OH, CH_3O^- and CH_3COO^- in descending order
 (a) $H_2O > OH > OCH_3 > CH_3COO^-$ (b) $OCH_3 > OH > CH_3COO^- > H_2O$
 (c) $OH > OCH_3 > H_2O > CH_3COO^-$ (d) $CH_3COO^- > OCH_3 > OH > H_2O$
35. Arrange *m*-nitrochlorobenzene (I), 2,4- dinitrochlorobenzene (II) and *p*-nitrochlorobenzene (III) according to their relative reactivity with sodium ethoxide.

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- (a) I > II > III (b) III > I > II (c) II > III > I (d) II = III > I
36. Treatment of 1-phenyl-2-chloropropane with alcoholic KOH gives mainly
 (a) 3-phenylpropene (b) 1-phenylpropene (c) 1-phenylpropan-3-ol (d) 1-phenylpropan-2-ol
37. Arrange the following in order of increasing ease of nucleophilic substitution reactions
 Chlorobenzene (I) 2,4,6-trinitrochlorobenzene (II) 2,4 dinitro chlorobenzene (III) 4-nitrochlorobenzene (IV)
 (a) I < IV < III < II (b) I < III < IV < II (c) II < III < IV < I (d) IV < III < II < I
38. Arrange the CH_3COO^- , $C_6H_5O^-$ and $C_6H_5SO_3^-$ anions as leaving groups in the decreasing order if the pK_a values of their conjugate acids are 4.5, 10 and 2.6 respectively
 (a) $C_6H_5SO_3^- > CH_3COO^- > C_6H_5O^-$ (b) $C_6H_5O^- > CH_3COO^- > C_6H_5SO_3^-$
 (c) $CH_3COO^- > C_6H_5SO_3^- > C_6H_5O^-$ (d) $CH_3COO^- > C_6H_5O^- > C_6H_5SO_3^-$
39. Which of the following will be the least reactive towards nucleophilic substitution
- (a)  (b)  (c)  (d) C_2H_5Cl
40. Which will be obtained by boiling  with caustic soda
 (a) Sodium oxalate (b) Sodium acetate (c) Sodium formate (d) Ethyl alcohol
41. Which of the following can give only two monochloro derivatives
 (a) n-Hexane (b) 2,4-Dimethylpentane (c) 2-Methylpropane (d) Benzene
42. The ease of dehydrohalogenation with alcoholic KOH in case of chloroethane (I), 2-chloropropane (II) 2-chloro-2-methylpropane (III) is of the order
 (a) III > II > I (b) I > II > III (c) II > I > III (d) I > III > II
43. In the reaction
 $R-Br + Cl^- \rightarrow R-Cl + Br^-$
 the rates of reaction of ethyl bromide (I), n-propyl bromide (II), isobutyl bromide (III) and neopentyl bromide (IV) follow the order
 (a) IV > III > II > I (b) I > II > III > IV (c) I > III > II > IV (d) III > II > IV > I
44. If methyl iodide and ethyl iodide are mixed in equal proportions, and the mixture is treated with metallic sodium in presence of dry ether, the number of possible products formed is
 (a) 2 (b) 3 (c) 1 (d) 4
45. In the reaction $CH_3CH_2CHBrCH_3 + (CH_3)_3COK \rightarrow$; the main product is
 (a)  (b)  (c) $CH_3CH_2CH=CH_2$ (d) $CH_3CH=CHCH_3$
46. The Friedel-Crafts reaction of n-propyl bromide with benzene in the presence of anhydrous $AlCl_3$ gives
 (a) n-propylbenzene (b) Isopropylbenzene (c) 1,4-dipropylbenzene (d) 1,2-dipropylbenzene
47. $CH_3CH_2Br \xrightarrow{NH_3} CH_3CH_2NH_2$ (true) hence,  + $NH_3 \rightarrow A$, A is
 (a)  (b)  (c)  (d) None of these
48. Which cannot undergo E2 reaction
 (a)  (b)  (c)  (d) None of these
49. To prepare anisole , which is the best path
 I.  + $CH_3ONa \rightarrow$ II.  + $CH_3Cl \rightarrow$ III.  + CH_2N_2
 (a) I (b) II (c) III (d) All are equal
50. $(CH_3)_3C.CH=CH_2 \xleftarrow{II} (CH_3)_3CCH(Cl)CH_3 \xrightarrow{I} (CH_3)_2C=C(CH_3)_2$ in this reaction
 (a) I is E1, II E2 (b) I is E2, II is E1 (c) Both E1 (d) Both E2