Chapter 01

Halogen Derivatives

NEET-FLASHBACK

Q.1 Consider the reactions:

(i) $(CH_3)_2CH-CH_2Br \xrightarrow{C_2H_5OH} (CH_3)_2CH-CH_2OC_2H_5 + HBr$

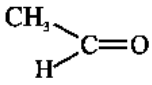
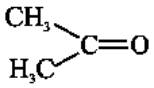
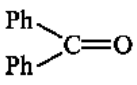
(ii) $(CH_3)_2CH-CH_2Br \xrightarrow{C_2H_5O^-} (CH_3)_2CH-CH_2OC_2H_5 + Br^-$

The mechanisms of reactions (i) and (ii) are respectively: **[AIPMT-2011]**

(1) S_N2 and S_N2 (2) S_N2 and S_N1

(3) S_N1 and S_N2 (4) S_N1 and S_N1

Q.2 The order of reactivity of phenyl magnesium bromide (PhMgBr) with the following compounds: **[AIPMT-2011]**

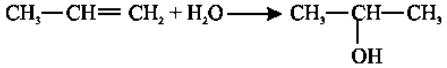
I  II  and III 

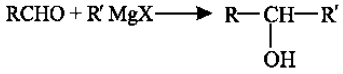
(1) I > III > II (2) I > II > III

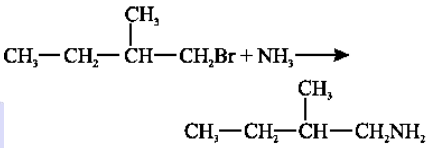
(3) III > II > I (4) II > I > III

Q.3 Which one is a nucleophilic substitution reaction among the following? **[AIPMT(Pre)-2011]**

(1) $CH_3CHO + HCN \rightarrow CH_3CH(OH)CN$

(2) 

(3) 

(4) 

Q.4 Which of the following acids does not exhibit optical isomerism? **[AIPMT(Pre)-2012]**

(1) Tartaric acid (2) Maleic acid

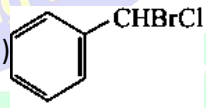
(3) α-amino acids (4) Lactic acid

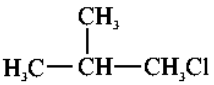
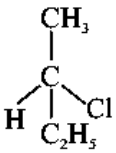
Q.5 In the following sequence of reactions $CH_3-Br \xrightarrow{KCN} A \xrightarrow{H_3O^+} B \xrightarrow{LiAlH_4} C$, the end product (C) is: **[AIPMT(Pre)-2012]**

(1) Ethyl alcohol (2) Acetone

(3) Methane (4) Acetaldehyde

Q.6 Which of the following compounds will undergo racemisation when solution of KOH hydrolyses? **[AIPMT-2014]**

(i)  (ii) $CH_3CH_2CH_2Cl$

(iii)  (iv) 

(1) (ii) and (iv) (2) (iii) and (iv)

(3) (i) and (iv) (4) (i) and (ii)

Q.7 Two possible stereo-structures of $CH_3CHOHCOOH$, which are optically active, are called: **[AIPMT-2015]**

(1) Mesomers (2) Diastereomers

(3) Atropisomers (4) Enantiomers

Q.8 In a S_N1 reaction on chiral centres, there is: **[AIPMT-2015]**

(1) 100% inversion

(2) 100% racemisation

(3) Inversion more than retention leading to partial racemisation

(4) 100% retention

Q.9 Which of the following reaction(s) can be used for the preparation of alkyl halides? **[AIPMT-2015]**

(I) $CH_3CH_2OH + HCl \xrightarrow{\text{anh. } ZnCl_2}$

(II) $CH_3CH_2OH + HCl \rightarrow$

(III) $(CH_3)_3COH + HCl \rightarrow$

(IV) $(CH_3)_2CHOH + HCl \xrightarrow{\text{anh. } ZnCl_2}$

(1) (III) and (IV) only (2) (I), (III) and (IV) only

(3) (I) and (II) only (4) (IV) only

Q.10 Consider the reaction

$CH_3CH_2CH_2Br + NaCN \rightarrow CH_3CH_2CH_2CN + NaBr$

This reaction will be the fastest in: **[NEET-2016]**

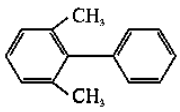
(1) N, N'-dimethylformamide (DMF)

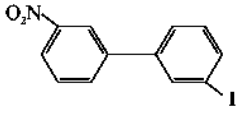
(2) Water

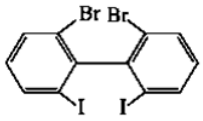
(3) Ethanol

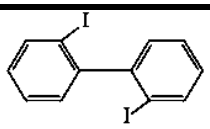
(4) Methanol

Q.11 Which of the following biphenyls is optically active: **[NEET-2016]**

(1) 

(2) 

(3) 

(4) 

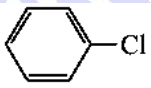
Q.12 An example of a sigma bonded organometallic compound is: **[NEET-2016]**

(1) Cobaltocene (2) Ruthenocene

(3) Grignard's (4) Ferrocene

Q.13 Which of the following will react faster through S_N1 mechanism? **[NEET-2017]**

(1) CH_3CH_2Cl (2) $H_2C = CH - CH_2Cl$

(3)  (4) $CH_2 = CHCl$

Q.14 Of the following alcohols, the one that would react fastest with conc. HCl and anhydrous $ZnCl_2$ is: **[NEET-2017]**

(1) 2–methylpropanol

(2) Butan-1–ol

(3) Butan–2–ol

(4) 2–methylpropan–2–ol

Q.15 Elimination reaction of 2-Bromo-pentane to form pent-2-ene is **[NEET-2020]**

(A) β-Elimination reaction

(B) Follows Zaitsev rule

(C) Dehydrohalogenation reaction

(D) Dehydration reaction

(1) (A), (C), (D)

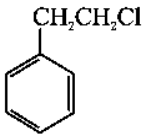
(2) (B), (C), (D)

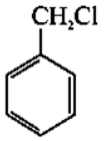
(3) (A), (B), (D)

(4) (A), (B), (C)

Q.16 Which of the following will **NOT** undergo S_N1 reaction with OH^-? **[2020 Covid Re-NEET]**

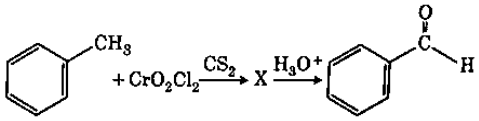
(1) $(CH_3)_3CCl$

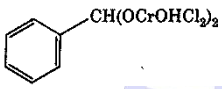
(2) 

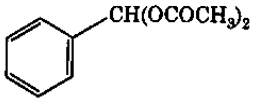
(3) 

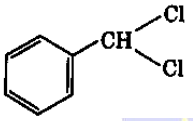
(4) $CH_2 = CH - CH_2Cl$

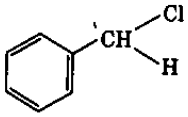
Q.17 The intermediate compound 'X' in the following chemical reaction is: **[NEET-2021]**



(1) 

(2) 

(3) 

(4) 

Q.18 The major product formed in dehydrohalogenation reaction of 2 – bromo pentane is pent - 2 – ene. This product formation is based on? **[NEET - 2021]**

(1) Huckel's Rule (2) Saytzeff's Rule

(3) Hund's Rule (4) Holfmann Rule

Q.19 The correct sequence of bond enthalpy of 'C — X' bond is **[NEET - 2021]**

(1) $CH_3 — Cl > CH_3 — F > CH_3 — Br > CH_3 — I$

(2) $CH_3 — f < CH_3 — Cl < CH_3 — Br < CH_3 — I$

(3) $CH_3 — f > CH_3 — Cl > CH_3 — Br > CH_3 — I$

(4) $CH_3 — f < CH_3 — Cl > CH_3 — Br > CH_3 — I$

Q.20 The incorrect statement regarding chirality is **[NEET - 2022]**

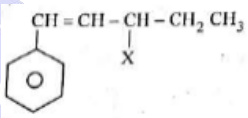
(1) S_N1 reaction yields 1 : 1 mixture of both enantiomers

(2) The product obtained by S_N2 reaction of haloalkane having chirality at the reactive site shows inversion of configuration

(3) Enantiomers are superimposable mirror images of each other

(4) A racemic mixture shows zero optical rotation.

Q.21 The given compound



is an example of _____. **[NEET - 2023]**

(1) Aryl halide (2) Allylic halide

(3) Vinylic halide (4) Benzylic halide

ANSWER KEY

NEET-FLASHBACK

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	1	2	4	2	1	3	4	3	2	1	3	3	2	4	4
Que.	16	17	18	19	20	21									
Ans.	2	1	2	3	3	2									