

PYQSide

JEE MAIN HALOALKANES AND HALOARENES — PYQS

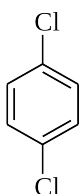
Max. Marks: 104

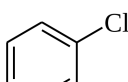
Questions: 26

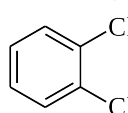
Section A (MCQ)

Q.1 Given below are two statements :

Statement-I: Due to increase in van der Waals forces, the order of boiling points is $\text{CH}_3\text{CH}_2\text{CH}_2\text{I} > \text{CH}_3\text{CH}_2\text{I} > \text{CH}_3\text{I}$.

Statement-II: As  is more symmetric, its

melting point is higher than , however

its boiling point is lower than .

In the light of the above statements, choose the correct answer from the options given below :

[JEE Main 2026 (Online) 8th April Evening Shift]

- (1) Both Statement-I and Statement-II are true
- (2) Both Statement-I and Statement-II are false
- (3) Statement-I is true but Statement-II is false
- (4) Statement-I is false but Statement-II is true

Scan or tap for the full solution



Q.2 Given below are two statements :

Statement-I: 3-phenylpropene reacts with HBr and gives secondary alkyl bromide having a chiral carbon atom as the major product.

Statement-II: Aryl chlorides and aryl cyanides can be prepared by Sandmeyer reaction as well as Gattermann reaction.

In the light of the above statements, choose the correct answer from the options given below :

[JEE Main 2026 (Online) 6th April Morning Shift]

- (1) Both Statement-I and Statement-II are true
- (2) Both Statement-I and Statement-II are false
- (3) Statement-I is true but Statement-II is false
- (4) Statement-I is false but Statement-II is true

Scan or tap for the full solution



Q.3 Match the LIST-I with LIST-II

Name of reaction		Reagent or catalyst used	
A.	Finkelstein reaction	I.	SbF_3
B.	Swarts reaction	II.	Na, dry ether
C.	Sandmeyer's reaction	III.	NaI
D.	Fittig reaction	IV.	Cu_2Cl_2

Choose the correct answer from the options given below : [JEE Main 2026 (Online) 4th April Morning Shift]

- (1) A-I, B-IV, C-III, D-II
- (2) A-III, B-I, C-IV, D-II
- (3) A-IV, B-II, C-I, D-III
- (4) A-I, B-III, C-II, D-IV

Scan or tap for the full solution



Q.4 Given below are two statements :

Statement-I: Benzyl chloride reacts faster in $\text{S}_\text{N}1$ mechanism than ethyl chloride.

Statement-II: Ethyl carbocation intermediate is less stabilized by hyperconjugation than benzyl carbocation by resonance.

In the light of the above statements, choose the correct answer from the options given below :

[JEE Main 2026 (Online) 2nd April Morning Shift]

- (1) Both Statement-I and Statement-II are true
- (2) Both Statement-I and Statement-II are false
- (3) Statement-I is true but Statement-II is false
- (4) Statement-I is false but Statement-II is true

Scan or tap for the full solution



Q.5 Correct statements regarding alkyl halides (R-X) among the following are :

- A. Alcohol being less polar solvent as compared to water, alcoholic KOH favours elimination reaction with R-X .
- B. Order of reactivity towards $\text{S}_\text{N}1$ mechanism is $\text{C}_6\text{H}_5\text{-CH}_2\text{-Cl} > \text{C}_6\text{H}_5\text{-CHCl-C}_6\text{H}_5$.
- C. Non substituted aryl halides exhibit properties similar to alkyl halides.
- D. Vinyl chloride is an example of haloalkene and allyl chloride is an example of haloalkyne.
- E. R-Cl can be prepared by reacting R-OH with SOCl_2 but Ar-Cl cannot be prepared by reacting Ar-OH with SOCl_2 .

Choose the **correct** answer from the options given below : [JEE Main 2026 (Online) 2nd April Evening Shift]

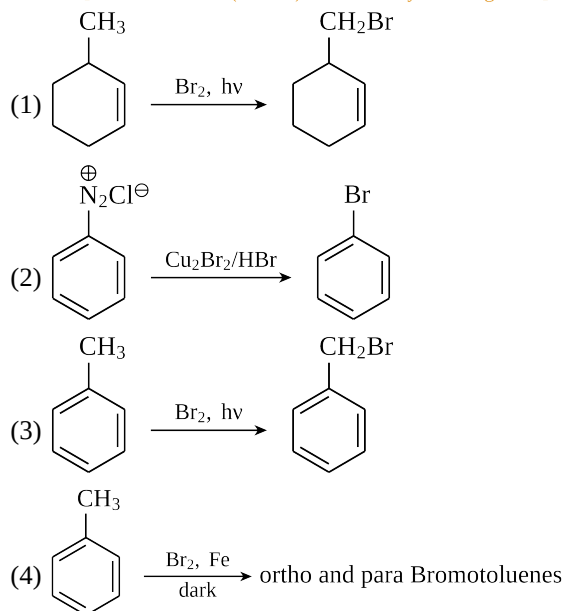
- (1) A, B and C Only (2) B and D Only
(3) A and E Only (4) D and E Only

Scan or tap for the full solution



Q.6 Which of the following reactions is NOT correctly represented?

[JEE Main 2026 (Online) 28th January Evening Shift]



Scan or tap for the full solution



Q.7 Identify the correct statements :

The presence of $-\text{NO}_2$ group in benzene ring

- A. activates the ring towards electrophilic substitutions.
B. deactivates the ring towards electrophilic substitutions.
C. activates the ring towards nucleophilic substitutions.
D. deactivates the ring towards nucleophilic substitutions.

Choose the correct answer from the options given below :

[JEE Main 2026 (Online) 28th January Evening Shift]

- (1) A and D Only (2) B and D Only
(3) C and A Only (4) B and C Only

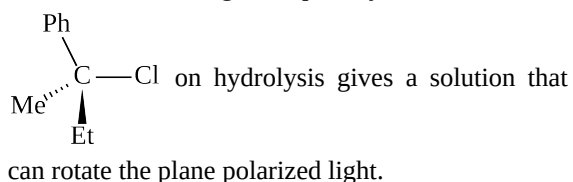
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Q.8 Given below are two statements :

Statement-I: 'C-Cl' bond is stronger in $\text{CH}_2=\text{CH}-\text{Cl}$ than $\text{CH}_3-\text{CH}_2-\text{Cl}$

Statement-II: The given optically active molecule,



In the light of the above statements, choose the correct answer from the options given below

[JEE Main 2026 (Online) 24th January Morning Shift]

- (1) Statement-I is false but Statement-II is true
(2) Statement-I is true but Statement-II is false
(3) Both Statement-I and Statement-II are true
(4) Both Statement-I and Statement-II are false

Scan or tap for the full solution



Q.9 Match the List-I with List-II

List-I Chloro derivative	
A.	Vinyl Chloride
B.	Benzyl Chloride
C.	Alkyl Chloride
D.	Allyl Chloride

List-II Example	
I.	$\text{CH}_2=\text{CH}-\text{CH}_2\text{Cl}$
II.	$\text{CH}_3-\text{CH}(\text{Cl})\text{CH}_3$
III.	$\text{CH}_2=\text{CHCl}$
IV.	

Choose the **correct** answer from the options given below :

[JEE Main 2026 (Online) 24th January Morning Shift]

- (1) A-III, B-IV, C-I, D-II (2) A-IV, B-I, C-III, D-II
(3) A-III, B-IV, C-II, D-I (4) A-I, B-II, C-IV, D-III

Scan or tap for the full solution



Q.10 As compared with chlorocyclohexane, which of the following statements correctly apply to chlorobenzene?

- A. The magnitude of negative charge is more on chlorine atom.
B. The C-Cl bond has partial double bond character.
C. C-Cl bond is less polar.
D. C-Cl bond is longer due to repulsion between delocalised electrons of the aromatic ring and lone pairs of electrons of chlorine.
E. The C-Cl bond is formed using sp^2 hybridised orbital of carbon.

Choose the correct answer from the options given below :

[JEE Main 2026 (Online) 22nd January Morning Shift]

- (1) B, C and E Only (2) A, C and E Only
(3) B, C and D Only (4) A, D and E Only

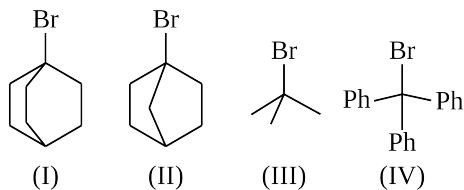
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Q.11 The correct order of the rate of reaction of the following reactants with nucleophile by S_N1 mechanism is :

(Given : Structures I and II are rigid)

[JEE Main 2026 (Online) 22nd January Morning Shift]



- (1) $I < II < III < IV$ (2) $II < I < III < IV$
 (3) $III < I < II < IV$ (4) $IV < III < II < I$

Scan or tap for the full solution



Q.12 The correct order of reactivity of CH_3Br in methanol with the following nucleophiles is F^- , I^- , $C_2H_5O^-$ and $C_6H_5O^-$

[JEE Main 2026 (Online) 22nd January Morning Shift]

- (1) $I^- > C_2H_5O^- > C_6H_5O^- > F^-$
 (2) $I^- > F^- > C_6H_5O^- > C_2H_5O^-$
 (3) $I^- > C_6H_5O^- > F^- > C_2H_5O^-$
 (4) $I^- > C_2H_5O^- > F^- > C_6H_5O^-$

Scan or tap for the full solution



Q.13 The correct order of the rate of the reaction for the following reaction with respect to nucleophiles is : $CH_3Br + Nu^- \rightarrow CH_3Nu + Br^-$

[JEE Main 2026 (Online) 21st January Evening Shift]

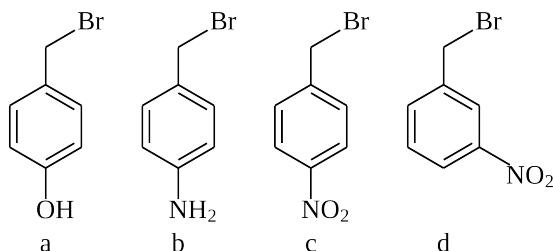
- (1) $ClO_4^- > CH_3COO^- > OH^- > PhO^-$
 (2) $OH^- > PhO^- > CH_3COO^- > ClO_4^-$
 (3) $CH_3COO^- > PhO^- > OH^- > ClO_4^-$
 (4) $PhO^- > OH^- > CH_3COO^- > ClO_4^-$

Scan or tap for the full solution



Q.14 The correct order of reactivity of the following benzyl halides towards reaction with KCN is :

[JEE Main 2026 (Online) 21st January Evening Shift]

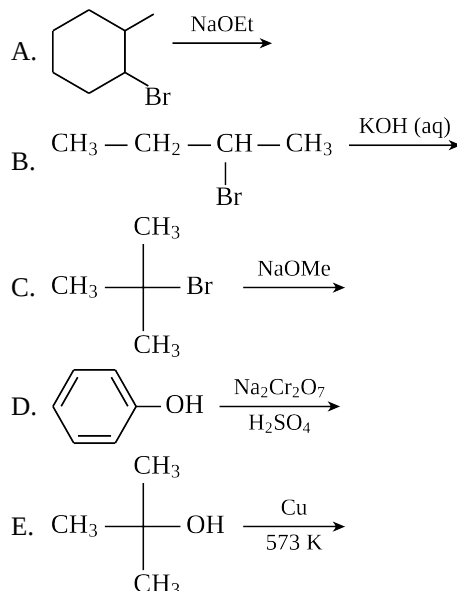


- (1) $a > b > c > d$ (2) $b > a > d > c$
 (3) $b > a > c > d$ (4) $a > b > d > c$

Scan or tap for the full solution



Q.15 The reactions which cannot be applied to prepare an alkene by elimination, are



Choose the correct answer from the options given below: [JEE Main 2025 (Online) 7th April Morning Shift]

- (1) B & E Only (2) B, C & D Only
 (3) A, C & D Only (4) B & D Only

Scan or tap for the full solution



Q.16 Match List - I with List - II.

List - I Conversion	
A.	
B.	
C.	
D.	

List - II Reagents, Conditions used	
I.	Warm H_2O
II.	(a) $NaOH$, 368 K; (b) H_3O^+
III.	(a) $NaOH$, 443 K; (b) H_3O^+
IV.	(a) $NaOH$, 623 K, 300 atm; (b) H_3O^+

Choose the **correct** answer from the options given below: [JEE Main 2025 (Online) 7th April Evening Shift]

- (1) A-II, B-III, C-I, D-IV (2) A-III, B-IV, C-II, D-I
 (3) A-IV, B-III, C-I, D-II (4) A-IV, B-III, C-II, D-I

Scan or tap for the
full solution



Q.17 Given below are two statements :

Statement-I: Alcohols are formed when alkyl chlorides are treated with aqueous potassium hydroxide by elimination reaction.

Statement-II: In alcoholic potassium hydroxide, alkyl chlorides form alkenes by abstracting the hydrogen from the β -carbon.

In the light of the above statements, choose the most appropriate answer from the options given below :

[JEE Main 2025 (Online) 4th April Evening Shift]

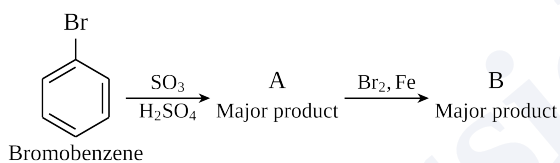
- (1) Both Statement-I and Statement-II are incorrect
 (2) Both Statement-I and Statement-II are correct
 (3) Statement-I is incorrect but Statement-II is correct
 (4) Statement-I is correct but Statement-II is incorrect

Scan or tap for the
full solution



Q.18 In the following series of reactions identify the major products A & B respectively :

[JEE Main 2025 (Online) 3rd April Evening Shift]



- (1)
 A B
- (2)
 A B
- (3)
 A B
- (4)
 A B

Scan or tap for the
full solution



Q.19 Match List-I with List-II.

List-I (Reaction)	
A.	$2 \text{C}_6\text{H}_5\text{X} + 2\text{Na} \xrightarrow[\text{Ether}]{\text{Dry}} \text{C}_6\text{H}_5\text{C}_6\text{H}_5 + 2\text{NaX}$
B.	$\text{ArN}_2^+ \text{X}^- \xrightarrow[\text{HCl}]{\text{Cu}} \text{ArCl} + \text{N}_2 \uparrow + \text{CuX}$
C.	$\text{C}_2\text{H}_5\text{Br} + \text{NaI} \xrightarrow[\text{Acetone}]{\text{Dry}} \text{C}_2\text{H}_5\text{I} + \text{NaBr}$
D.	$\text{CH}_3\text{C}(\text{OH})(\text{CH}_3)\text{CH}_3 \xrightarrow[\text{ZnCl}_2]{\text{HCl}} \text{CH}_3\text{C}(\text{Cl})(\text{CH}_3)\text{CH}_3$

List-II (Name of reaction)	
I.	Lucas reaction
II.	Finkelstein reaction
III.	Fittig reaction
IV.	Gatterman reaction

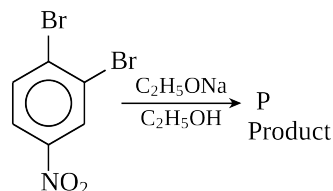
Choose the correct answer from the options given below: [JEE Main 2025 (Online) 2nd April Evening Shift]

- (1) (A)-(III), (B)-(II), (C)-(IV), (D)-(I)
 (2) (A)-(IV), (B)-(III), (C)-(I), (D)-(II)
 (3) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)
 (4) (A)-(III), (B)-(IV), (C)-(II), (D)-(I)

Scan or tap for the
full solution



Q.20 In the following substitution reaction :



Product 'P' formed is :

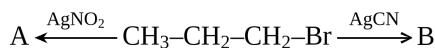
[JEE Main 2025 (Online) 29th January Morning Shift]

- (1) (2)
 (3) (4)

Scan or tap for the
full solution



Q.21 The products A and B in the following reactions, respectively are



[JEE Main 2025 (Online) 28th January Morning Shift]

- (1) $\text{CH}_3\text{--CH}_2\text{--CH}_2\text{--ONO}$, $\text{CH}_3\text{--CH}_2\text{--CH}_2\text{--CN}$
 (2) $\text{CH}_3\text{--CH}_2\text{--CH}_2\text{--NO}_2$, $\text{CH}_3\text{--CH}_2\text{--CH}_2\text{--CN}$
 (3) $\text{CH}_3\text{--CH}_2\text{--CH}_2\text{--ONO}$, $\text{CH}_3\text{--CH}_2\text{--CH}_2\text{--NC}$
 (4) $\text{CH}_3\text{--CH}_2\text{--CH}_2\text{--NO}_2$, $\text{CH}_3\text{--CH}_2\text{--CH}_2\text{--NC}$

Scan or tap for the full solution



Q.22 Given below are two statements :

Statement-I: $\text{Et}_2\text{N--CH}_2\text{CH}_2\text{Cl}$ will undergo alkaline hydrolysis at a faster rate than $\text{Et}_2\text{CH--CH}_2\text{CH}_2\text{Cl}$

Statement-II: In $\text{Et}_2\text{N--CH}_2\text{CH}_2\text{Cl}$, intramolecular substitution takes place first by involving lone pair of electrons on nitrogen.

In the light of the above statements, choose the most appropriate answer from the options given below

[JEE Main 2025 (Online) 28th January Morning Shift]

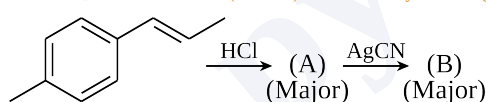
- (1) Both Statement-I and Statement-II are correct
 (2) Statement-I is incorrect but Statement-II is correct
 (3) Both Statement-I and Statement-II are incorrect
 (4) Statement-I is correct but Statement-II is incorrect

Scan or tap for the full solution



Q.23 The product B formed in the following reaction sequence is:

[JEE Main 2025 (Online) 28th January Evening Shift]



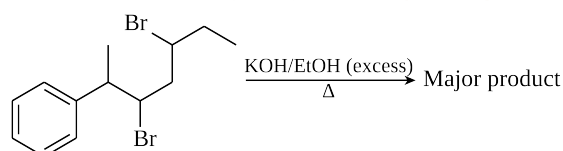
- (1)
 (2)
 (3)
 (4)

Scan or tap for the full solution



Q.24 The major product of the following reaction is:

[JEE Main 2025 (Online) 28th January Evening Shift]



- (1) 6-Phenylhepta-3,5-diene
 (2) 6-Phenylhepta-2,4-diene
 (3) 2-Phenylhepta-2,4-diene
 (4) 2-Phenylhepta-2,5-diene

Scan or tap for the full solution

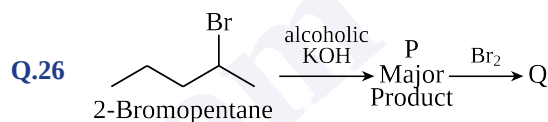


Section B (Numerical)

Q.25 RMgI when treated with ice cold water liberated a gas which occupied $1.4 \text{ dm}^3/\text{g}$ at STP. The gas produced is further reacted with iodine in presence of HIO_3 to give compound (X). Compound (X) in presence of Na and dry ether produced compound (Y). Molar mass of compound (Y) is _____ g mol^{-1} . (Nearest integer)

[JEE Main 2026 (Online) 5th April Evening Shift]

Scan or tap for the full solution



Consider the above sequence of reactions. 151 g of 2-bromopentane is made to react. Yield of major product P is 80% whereas Q is 100%.

Mass of product Q obtained is _____ g.

(Given molar mass in g mol^{-1} H : 1, C : 12, O : 16, Br : 80) [JEE Main 2025 (Online) 2nd April Evening Shift]

Scan or tap for the full solution



ANSWER KEY

Section A (MCQ)

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	1	3	2	1	3	1	4	2	3	1	2
Ques.	12	13	14	15	16	17	18	19	20	21	22
Ans.	1	2	2	4	4	3	2	4	4	4	1
Ques.	23	24									
Ans.	4	3									

Section B (Numerical)

Ques.	25	26					
Ans.	30	184					