

JEE MAIN HALOALKANES AND HALOARENES — MECHANISM AND REACTIVITY OF S_N1 AND S_N2 — PYQS

Max. Marks: 28

Questions: 7

Section A (MCQ) — 7 questions

Q.1 Given below are two statements :

Statement-I: Benzyl chloride reacts faster in S_N1 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

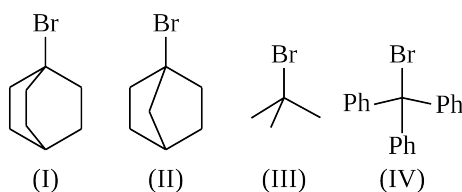
Scan or tap for the full solution



Q.2 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.3 The correct order of reactivity of CH_3Br in methanol with the following nucleophiles is F^- , I^- , $\text{C}_2\text{H}_5\text{O}^-$ and $\text{C}_6\text{H}_5\text{O}^-$

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

- (1) $\text{I}^- > \text{C}_2\text{H}_5\text{O}^- > \text{C}_6\text{H}_5\text{O}^- > \text{F}^-$
- (2) $\text{I}^- > \text{F}^- > \text{C}_6\text{H}_5\text{O}^- > \text{C}_2\text{H}_5\text{O}^-$
- (3) $\text{I}^- > \text{C}_6\text{H}_5\text{O}^- > \text{F}^- > \text{C}_2\text{H}_5\text{O}^-$
- (4) $\text{I}^- > \text{C}_2\text{H}_5\text{O}^- > \text{F}^- > \text{C}_6\text{H}_5\text{O}^-$

Scan or tap for the full solution



Q.4 The correct order of the rate of the reaction for the following reaction with respect to nucleophiles is :
 $\text{CH}_3\text{Br} + \text{Nu}^- \longrightarrow \text{CH}_3\text{Nu} + \text{Br}^-$

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

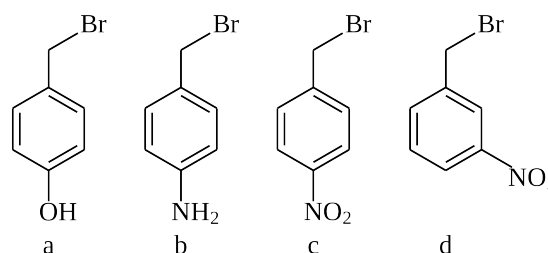
- (1) $\text{ClO}_4^- > \text{CH}_3\text{COO}^- > \text{OH}^- > \text{PhO}^-$
- (2) $\text{OH}^- > \text{PhO}^- > \text{CH}_3\text{COO}^- > \text{ClO}_4^-$
- (3) $\text{CH}_3\text{COO}^- > \text{PhO}^- > \text{OH}^- > \text{ClO}_4^-$
- (4) $\text{PhO}^- > \text{OH}^- > \text{CH}_3\text{COO}^- > \text{ClO}_4^-$

Scan or tap for the full solution



Q.5 The correct order of reactivity of the following benzyl halides towards reaction with KCN is :

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

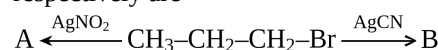


- (1) $a > b > c > d$
- (2) $b > a > d > c$
- (3) $b > a > c > d$
- (4) $a > b > d > c$

Scan or tap for the full solution



Q.6 The products A and B in the following reactions, respectively are



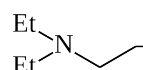
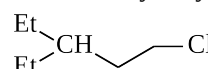
[JEE Main 2025 (Online) 28th January Morning Shift]

- (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.7 Given below are two statements :

Statement-I:  will undergo alkaline hydrolysis at a faster rate than 

Statement-II: In $\text{Et}_2\text{NCH}_2\text{CH}_2\text{Cl}$, 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



ANSWER KEY

Ques.	1	2	3	4	5	6	7				
Ans.	1	2	1	2	2	4	1				