

CHEMISTRY · JEE MAIN

Alcohols, Phenols & Ethers

Chapter-wise previous year questions, with answer key

12

PYQS

2020–2026

PAPERS

4

TOPICS

Preparation of Alcohols

Phenols

Ethers and Williamson Synthesis

Reactions of Alcohols

- 1 Attempt each question on paper first. They're grouped by topic, newest papers first.
- 2 Check yourself against the answer key at the end.
- 3 Got one wrong? Tap "Step-by-step solution" under it for the full working.

Stuck on a question?

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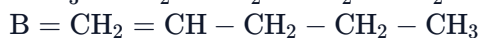
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Preparation of Alcohols · 2 PYQs

Q1 JEE Main 2026 · 5 Apr · Shift 1

Consider compounds A, B and C with following structural formulae



For the conversion of B from A, reagent (D) required is ____ and structural formula of product (E) obtained when C undergoes same reaction using excess reagent (D) is ____.

- (A) $\begin{matrix} \text{D} & & \text{E} \\ \text{Conc. H}_2\text{SO}_4 & \text{CH}_2 = \text{CH} - \text{CH}(\text{OH})\text{CH}_3 \end{matrix}$
- (B) $\begin{matrix} \text{D} & & \text{E} \\ \text{PCC} & \text{HO} - \text{CH}_2 - \text{CH}_2 - \text{CH} = \text{CH}_2 \end{matrix}$
- (C) $\begin{matrix} \text{D} & & \text{E} \\ \text{PCC} & \text{CH}_2 = \text{CH} - \text{CH} = \text{CH}_2 \end{matrix}$
- (D) $\begin{matrix} \text{D} & & \text{E} \\ \text{Conc. H}_2\text{SO}_4 \text{ or H}_3\text{PO}_4 & \text{CH}_2 = \text{CH} - \text{CH} = \text{CH}_2 \end{matrix}$

[Step-by-step solution ► prepwiser.in/questions/005KVqUI9_](https://www.prepwiser.in/questions/005KVqUI9_)

Q2 JEE Main 2023 · 10 Apr · Shift 2

Incorrect method of preparation for alcohols from the following is:

- (A) Hydroboration-oxidation of alkene.
- (B) Reaction of Ketone with RMgBr followed by hydrolysis.
- (C) Ozonolysis of alkene.
- (D) Reaction of alkyl halide with aqueous NaOH .

[Step-by-step solution ► prepwiser.in/questions/pZ1yS_wgJE](https://www.prepwiser.in/questions/pZ1yS_wgJE)

Phenols · 7 PYQs

Q3 JEE Main 2026 · 6 Apr · Shift 1

4.7 g of phenol is heated with Zn to give product X. If this reaction goes to 60% completion then the number of moles of compound X formed will be

____ $\times 10^{-2}$. (Nearest Integer)

(Given molar mass in g mol^{-1} : H : 1, C : 12, O : 16)

Numerical answer: enter the value.

[Step-by-step solution ► prepwiser.in/questions/c1fcWZ-tl](https://www.prepwiser.in/questions/c1fcWZ-tl)

Q4 JEE Main 2026 · 5 Apr · Shift 1

One mole of phenol is treated with dilute HNO_3 at 298 K to give a mixture of products. The mixture is separated by steam distillation. The steam volatile compound (X) is separated. The increase in percentage of oxygen in (X) with respect to phenol is ____ $\times 10^{-1}\%$

(Given molar mass in g mol^{-1} : H : 1, C : 12, N : 14, O : 16)

Numerical answer: enter the value.

[Step-by-step solution ► prepwiser.in/questions/rYaSAeZRfG](https://www.prepwiser.in/questions/rYaSAeZRfG)

Match **List - I** with **List - II**.

List I (Reactants)	List II (Product)
(A) Phenol, Zn/ Δ	(I) Salicylaldehyde
(B) Phenol, CHCl_3 , NaOH, HCl	(II) Salicylic acid
(C) Phenol, CO_2 , NaOH, HCl	(III) Benzene
(D) Phenol, Conc. HNO_3	(IV) Picric acid

Choose the correct answer from the options given below :

(A) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

(B) (A)-(III), (B)-(I), (C)-(II), (D)-(IV)

(C) (A)-(IV), (B)-(II), (C)-(I), (D)-(III)

(D) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)

[Step-by-step solution ► prepwiser.in/questions/82oH9fpDV_](https://www.prepwiser.in/questions/82oH9fpDV_)

Solve these online with step-by-step solutions → [prepwiser.in/learn/chapter/hrgSNlf1s7/questions](https://www.prepwiser.in/learn/chapter/hrgSNlf1s7/questions)

A trisubstituted compound 'A', $\text{C}_{10}\text{H}_{12}\text{O}_2$ gives neutral FeCl_3 test positive. Treatment of compound 'A' with NaOH and CH_3Br gives $\text{C}_{11}\text{H}_{14}\text{O}_2$, with hydroiodic acid gives methyl iodide and with hot conc. NaOH gives a compound B, $\text{C}_{10}\text{H}_{12}\text{O}_2$. Compound 'A' also decolorises alkaline KMnO_4 . The number of π bond/s present in the compound 'A' is _____.

Numerical answer: enter the value.

[Step-by-step solution ► prepwiser.in/questions/4yFTegB8EC](https://www.prepwiser.in/questions/4yFTegB8EC)

The difference in the reaction of phenol with bromine in chloroform and bromine in water medium is due to :

(A) Hyperconjugation in substrate

(B) Polarity of solvent

(C) Free radical formation

(D) Electromeric effect the substrate

[Step-by-step solution ► prepwiser.in/questions/ySts_G91Mz](https://www.prepwiser.in/questions/ySts_G91Mz)

Q8 JEE Main 2022 · 29 Jun · Shift 1

Given below are two statements :

Statement I : Phenols are weakly acidic.

Statement II : Therefore they are freely soluble in NaOH solution and are weaker acids than alcohols and water.

Choose the most appropriate option :

- (A) Both Statement I and Statement II are correct.
- (B) Both Statement I and Statement II are incorrect.
- (C) Statement I is correct but Statement II is incorrect.
- (D) Statement I is incorrect but Statement II is correct.

[Step-by-step solution ► prepwisser.in/questions/NgLbHhkbU_](https://www.prepwisser.in/questions/NgLbHhkbU_)

Q9 JEE Main 2020 · 8 Jan · Shift 1

Arrange the following compounds in increasing order of C–OH bond length :

methanol, phenol, p-ethoxyphenol

- (A) phenol < methanol < p-ethoxyphenol
- (B) methanol < p-ethoxyphenol < phenol
- (C) methanol < phenol < p-ethoxyphenol
- (D) phenol < p-ethoxyphenol < methanol

[Step-by-step solution ► prepwisser.in/questions/h7DVNwfmFW](https://www.prepwisser.in/questions/h7DVNwfmFW)

Ethers and Williamson Synthesis · 1 PYQs

Q10 JEE Main 2025 · 7 Apr · Shift 1

Given below are two statements :

Statement I : Dimethyl ether is completely soluble in water. However, diethyl ether is soluble in water to a very small extent.

Statement II : Sodium metal can be used to dry diethyl ether and not ethyl alcohol.

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

- (A) Statement I is false but Statement II are true
- (B) Statement I is true but Statement II is false
- (C) Both Statement I and Statement II are true
- (D) Both Statement I and Statement II are False

[Step-by-step solution ► prepwisser.in/questions/tnxDewQEMJ](https://www.prepwisser.in/questions/tnxDewQEMJ)

Solve these online with step-by-step solutions → [prepwisser.in/learn/chapter/hrgSNIf1s7/questions](https://www.prepwisser.in/learn/chapter/hrgSNIf1s7/questions)

Q11 JEE Main 2024 · 31 Jan · Shift 1

Given below are two statements: One is labelled as Assertion A and the other is labelled as Reason R:

Assertion A: Alcohols react both as nucleophiles and electrophiles.

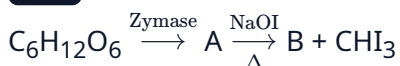
Reason R: Alcohols react with active metals such as sodium, potassium and aluminum to yield corresponding alkoxides and liberate hydrogen.

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

- (A) A is false but R is true.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) Both A and R are true and R is the correct explanation of A.
- (D) A is true but R is false.

[Step-by-step solution ► prepwiser.in/questions/rKXMHGiZHV](https://www.prepwiser.in/questions/rKXMHGiZHV)

Q12 JEE Main 2022 · 29 Jun · Shift 1



The number of carbon atoms present in the product B is _____.

Numerical answer: enter the value.

[Step-by-step solution ► prepwiser.in/questions/8gqrnl3sst](https://www.prepwiser.in/questions/8gqrnl3sst)

Answer key: Alcohols, Phenols & Ethers

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Numbers match the question numbers above. For full working, open the solution link under each question.

Solve these online with step-by-step solutions → [prepwise.in/learn/chapter/hrgSNlf1s7/questions](https://www.prepwise.in/learn/chapter/hrgSNlf1s7/questions)

1	D	2	C	3	3	4	175	5	B	6	4	7	B	8	C
9	D	10	C	11	B	12	1								

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