

Rayat shikshan sanstha's

Yashwantrao Chavan Institute of Science

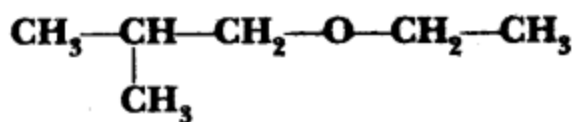
Std – XII Subject – Chemistry

Alcohols, Phenols and Ethers

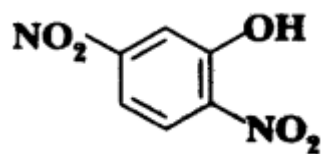
Questions for practice

Q. 1 Write the IUPAC name of the given compound

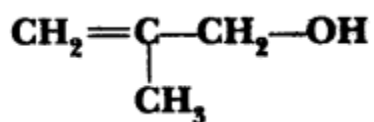
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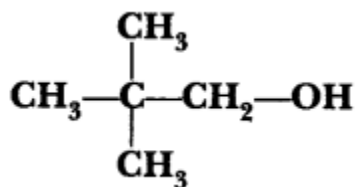
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Q. 2. Give reasons for the following:

(i) p-nitrophenol is more acidic than p-methylphenol.

(ii) Bond length of C—O bond in phenol is shorter than that in methanol.

(iii) $(\text{CH}_3)_3\text{C—Br}$ on reaction with sodium methoxide ($\text{Na}^+ \text{—OCH}_3$) gives alkene as the main product and not an ether.

Q. 3 Give reasons for the following:

(i) Phenol is more acidic than ethanol.

(ii) Boiling point of ethanol is higher in comparison to methoxymethane.

(iii) $(\text{CH}_3)_3\text{C—O—CH}_3$ on reaction with HI gives CH_3OH and $(\text{CH}_3)_3\text{C—I}$ as the main products and not $(\text{CH}_3)_3\text{C—OH}$ and CH_3I

Q. 4 How do you convert the following:

(i) Aniline to phenol

(ii) Prop-1-ene to propan-1-ol

(iii) Anisole to 2-methoxytoluene

Q. 5 what happens when

(i) ethanol is treated with Cu at 573 K,

(ii) phenol is treated with CH_3COCl /anhydrous AlCl_3 ,

(iii) ethyl chloride is treated with NaOCH_3 ?

Q. 6 How do you convert the following:

(i) Phenol to 2-hydroxyacetophenone

(ii) Ethyl chloride to methoxy ethane

(iii) Acetone to 2-methylpropan-2-ol

Q. 7 Give equations of the following reactions:

(i) Oxidation of propan-1-ol with alkaline solution.

(ii) Bromine in with phenol.

(iii) Dilute with phenol.

(iv) Treating phenol with chloroform in presence of aqueous NaOH.

Q 8 Explain the following with an example.

(i) Kolbe's reaction.

(ii) Reimer-Tiemann reaction.

(iii) Williamson ether synthesis.

(iv) Unsymmetrical ether.

Q. 9 Write the mechanism of acid-catalysed dehydration of ethanol to yield ethene.

Q. 10 Arrange the following in increasing order of their boiling point:

$\text{CH}_3\text{CH}_2\text{OH}$, CH_3CHO , $\text{CH}_3\text{—O—CH}_3$

Q. 11 Write the structures of the products when butan-2-ol reacts with the following:

(i) CrO_3 (ii) SOCl_2

Q. 12 What happens when

(a) Sodium phenoxide is treated with CH_3Cl ?

(b) $\text{CH}_2 = \text{CH} - \text{CH}_2 - \text{OH}$ is oxidised by PCC?

(c) Phenol is treated with CH_3COCl /anhydrous AlCl_3 ?

Write chemical equations in support of your answer.

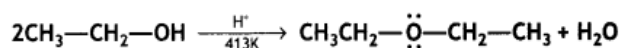
Q. 13 How will you convert the following:

(i) Phenol to benzoquinone

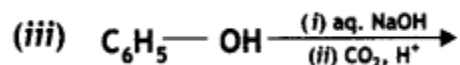
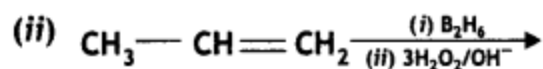
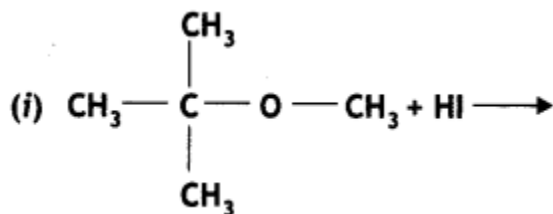
(ii) Ethyl magnesium chloride to propan-1-ol

(iii) 2-Methyl propene from 2-methyl propanol

Q. 14 Explain the mechanism of the following reaction:



Q. 15 Write the main product(s) in each of the following reactions:



Q. 16 a) What is Ether?

b) What will be the type of alcohol formed by the hydration of propene in the presence of acid?

c) What is the special name of Phenol and from what was it first isolated?

d) Write the equation of catalytic reduction of Butanols.

Q. 17 What is Lucas reagent? How are primary, secondary and tertiary alcohol identified by it? Explain.

Q. 18 Give the equations of reactions for the preparation of phenol from cumene.

Q. 19 What is Williamson continuous etherification process? Is it a continuous process? Explain. Give labelled diagram.

Q. 20 Explain the mechanism of Addition of Grignard reagent to the carbonyl group of a compound forming an adduct followed by hydrolysis.

