

Board – CBSE

Class – 12th

Topic – Alcohols, Phenols and Ethers

1. Explain a chemical test to distinguish between primary, secondary and tertiary alcohols.
2. What is Picric acid? How is it prepared from phenol?
3. Give equations for preparation of ethanol by fermentation.
4. Predict the major product of acid catalyzed dehydration of
(i) 1-Methylcyclohexanol and (ii) Butan-1-ol
5. Write the equations involved in the following reactions:
(i) Reimer-Tiemann reaction (ii) Kolbe's reaction
6. Why phenol is acidic in nature.
7. o- nitrophenol has lower boiling point (is more volatile) than p – nitrophenol
8. Methanol is miscible with water while iodomethane is not. Explain
9. An organic compound (X) when dissolved in ether and treated with magnesium metal forms a compound Y. The compound, Y, on treatment with acetaldehyde and the product on acid hydrolysis gives isopropyl alcohol. Identify the compound X. What is the general name of the compounds of the type Y.?
10. Give structures of the products you would expect when each of the following alcohol reacts with (a) HCl – ZnCl₂ (b) HBr (c) SOCl₂
11. Ortho and para nitrophenols are more acidic than phenol. Draw the resonance structures of the corresponding phenoxide ions.
12. Write the reactions of Williamson synthesis of 2-ethoxy-3-methylpentane starting from ethanol and 3-methylpentan-2-ol.
13. Predict the products of the following reactions:
(a) CH₃ – CH₂ – CH₂ – O – CH₃ + HBr →
(b) (CH₃)₃C – OC₂H₅ →
14. Write structures of the compounds whose IUPAC names are as follows:
(a) 2-Methylbutan-2-ol
(b) 2-Ethoxy-3-methylpentane
(c) Cyclopent-3-en-1-ol
(d) 3-Chloromethylpentan-1-ol.
15. Draw the structures of all isomeric alcohols of molecular formula C₅H₁₂O and give their IUPAC names.
16. Write the mechanism of hydration of ethene to yield ethanol.