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**CHEMISTRY**

**1. Draw the structures of all isomeric alcohols of molecular formula C5H12O and give their IUPAC names. Classify the isomers of alcohols as primary, secondary, tertiary alcohols.**

**2. Explain why propanol has higher boiling point than that of the hydrocarbon, butane.**

**3. Illustrate hydroboration-oxidation with an example.**

**4. While separating a mixture of ortho and para nitrophenols by steam distillation, name the isomer which will be steam volatile. Give reason.**

**5. Give the equations of reactions for the preparation of phenol from cumene.**

**6. Write the mechanism of hydration of ethene to yield ethanol.**

**7. You are given benzene, conc. H2SO4 and NaOH. Write the equations for the preparation of phenol using these reagents.**

**8. Show how will you synthesise:
(i) 1-phenylethanol from a suitable alkene.
(ii) cyclohexylmethanol using an alkyl halide by an SN2 reaction.
(iii) pentan-1-ol using a suitable alkyl halide?**

**9. Give two reactions that show the acidic nature of phenol. Compare acidity of phenol with that of ethanol.**

**10. Explain why ortho nitrophenol is more acidic than ortho methoxyphenol.**

**11. Explain how does the –OH group attached to a carbon of benzene ring activate it towards electrophilic substitution.**

**12. Give equations of the following reactions:
(i) Oxidation of propan-1-ol with alkaline KMnO4 solution.
(ii) Bromine in CS2 with phenol.
(iii) Dilute HNO3 with phenol.
(iv) Treating phenol with chloroform in the presence of aqueous NaOH.**

**13.  Explain the following with an example.
(i) Kolbe’s reaction.
(ii) Reimer-Tiemann reaction.
(iii) Williamson ether synthesis.**

**14. Write the mechanism of acid dehydration of ethanol to yield ethene.**

**15. How are the following conversions carried out?
(i) Propene → Propan-2-ol.
(ii) Benzyl chloride → Benzyl alcohol.
(iii) Ethyl magnesium chloride → Propan-1-ol.
(iv) Methyl magnesium bromide → 2-Methylpropan-2-ol.**

**16. How is 1-propoxypropane synthesised from propan-1-ol? Write the mechanism of this reaction.**

**17. Write the equation of the reaction of hydrogen iodide with:
(i) 1-propoxypropane (ii) methoxybenzene**

**18. Write equations of the following reactions:
(i) Friedel-Crafts reaction – alkylation of anisole.
(ii) Nitration of anisole.
(iii) Bromination of anisole in ethanoic acid medium.
(iv) Friedel-Craft’s acetylation of anisole.**

**19. Rearrange the following compounds in the increasing order of their boiling points:
CH3-CHO, CH3-CH2-OH, CH3-CH2-CH3**

**20. How are the following conversions carried out?
 Propene to propan-2-ol**

ANSWERS:


19. CH3CH2CH3 < CH3CHO < CH3CH2OH