TEST PAPER NO. 11

TOPIC : ORGANIC FUNCTIONAL GROUP II (ALCOHOL, PHENOL AND ETHER)

M.M. 50 **TIME: 3 HRS.**

Name of Student_____ Roll No. _____

Q.NO. 1-10 carries 1 mark, 11-20 2 marks, 21-25 carries 3 marks, 26 carries 5 marks.

1. **Write the structure of : 2 Ethoxy propane and 2,6 dimethylphenol?**
2. **Write down the mechanism of hydration of alkene to form alcohol?**
3. **Give the structures and IUPAC names of the products expected from:**
   a. **Catalytic reduction of butanal** b. **Propanone with Methyl Mg Bromide**
4. **How will you prepare the following alcohol usng suitable Grignard reagent:**
   A. **2-Methyl Propan-1-ol** b. **cyclo hexyl methanol**
5. **Complete the following reaction:**
   a. **2 Methyl Butanal** ($NaBH_4$) b. **Chloro benzene (NaOH)**
6. a. **Why alcohols have greater boiling point than comparable ethers and Alkanes.**
   b. **Why ethers are having higher boiling point than alkane of comparable molecular mass.**
7. **Arrange the following set of compounds in order of their increasing boiling point: Pentan-1-ol, butan-1-ol, butan-2-ol, ethanol, propan-1-ol, methanol**
8. **Arrange the following compounds on the basis of increasing acidic strength:** Propan-1-ol, 2,4,6-trinitrophenol, 3-nitrophenol, 3,5-dinitrophenol, phenol, 4-methylphenol
9. **Ortho and para nitropheols are more acidic than phenol. Draw the resonance structures of the corresponding phenoxide ions.**
10. **Write the reaction involved in fermentation of sucrose to give ethyl alcohol?**
11. **Write the reactions of Williamson Synthesis of 2-ethoxy-3-methylpentane starting from ethanol and 3-methylpentan-2-ol?**
12. **Draw the structures of all isomeric alcohols of molecular formulae $C_5H_{12}O$ and give their IUPAC names.**
13. **Why:**
    a. **Alcohols are comparatively more soluble in water than hydrocarbons of comparable molecular mass.**
    b. **Propanol has higher boiling point than that of the hydrocarbon butane.**
14. **What is meant by hydroboration oxidation reaction? Illustrate it with example?**
15. **Give the equation for preparation of phenol from cumene?**
16. **Write the mechanism of acid dehydration of ethanol to yield ethene and ethoxy ethane with temperature and conditions prescribed?**
17. **Show how will you synthesise the following:**
    a. **1-phenylethanol from a suitable alkene**
    b. **pentan-1-ol using suitable alkyl halide.**
18. **How is 1-propoxy propane sythesised from propan-1-ol? Write the mechanism?**
19. **Write the reacgtion of HI with: a. 1-propoxypropane b. benzyl ethyl ether**
20. **Write the mechanism of HI with methoxy methane.**

21. Write the following name reaction with equations involved:
    a. Williamson Synthesis b. Dow process c. Freidel Craft acylation
22. Carry out the following conversion:
    a. Propene to propan-2-ol b. Benzyl chloride to Benzyl alcohol
    c. Ethyl magnesium chloride to Propan-1-ol
23. Name the reagents used in the following reactions:
    a. Oxidation of a primary alcohol to carboxylic acid
    b. Bromination of phenol to 2,4,6 tribromo phenol
    c. Butan-2-one to Butan-2-ol
24 Give two reactions that show the acidic nature of phenol. Compare the acidity of phenol with that of ethanol?
25 Explain the following name reaction:
    a. Kolbe's reaction b. Reimer Tiemann reaction
    c. Esterification reaction.
26 Give thturee structures of the products expected when each of the following alcohol reacts with a. HCl-$ZnCl_2$ b. HBr c. $SOCl_2$
    i. 1-methylcyclohexanol ii. 2-methylbutan-2-ol
    Write the structures of the major products expected from the following reactions:
    a. Mononitratlion of 3-methylphenol
    b. Dinitration of 3-methylphenol
    c. Mononitration of phenyl methanoate.

    Or//

    Carry out the following conversion:
    a. Halogenation of Anisole (in presence of ethanoic acid)
    b. Anisole with Chloromethane (in presence of Anhy. $AlCl_3$)
    c. Nitration of Anisole (in presence of H_2SO_4)
    d. Phennatole with HBr.
    e. $(CH_3)_3C\text{-}OC_2H_5$ with HI.