Saitech Informatics

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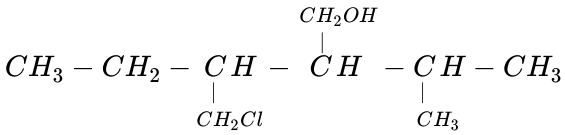
PHENOLS, ALCOHOLS AND ETHERS

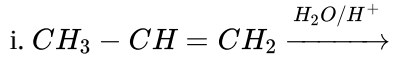
Class 12 - Chemistry

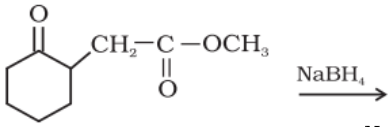
Time Allowed: 1 hour and 30 minutes **Maximum Marks: 45**

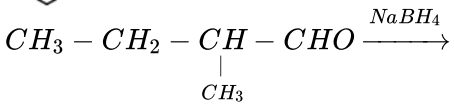
1. What is denatured alcohol? **[1]**
2. Define fermentation. **[1]**
3. How are the following conversion carried out? Write the reaction and conditions in each case: **[1]**
   Ethanol to 2-propanol
4. Write structure of the compounds whose IUPAC names are as follows: **[1]**
   3-Chloromethylpentan-1-ol
5. Name the following compound according to IUPAC system. **[1]**



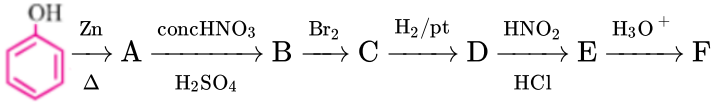
6. How is 1-bromopropane obtained from 1-propanol? **[1]**
7. How can propan-2-one be converted into tert-butyl alcohol? **[1]**
8. Explain how does the - OH group attached to a carbon of benzene ring activate it towards electrophilic substitution? **[3]**
9. The carbon-oxygen bond in phenol is slightly stronger than that in methanol. Why? **[3]**
10. Write structures of the products of the following reactions: **[3]**

i. 

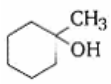
ii. 

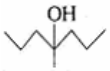
iii. 

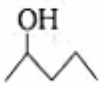
11. What is meant by hydroboration-oxidation reaction? Illustrate it with an example. **[3]**
12. Write the reaction and the conditions involved in the conversion of: **[3]**
    i. Propane to 1-propanol
    ii. Phenol to salicylic acid
13. Write the reactions of Williamson synthesis of 2-ethoxy-3-methylpentane starting from ethanol and 3-methylpentan-2-ol. **[5]**
14. Write the structures of organic compound A to F in the following sequence of reactions: **[5]**

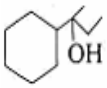


15. Show how would you synthesize the following alcohols from appropriate alkenes? **[5]**

i. 

ii. 

iii. 

iv. 

16. a. Name the starting material used in the industrial preparation of phenol. **[5]**

b. Write a complete reaction for the bromination of phenol in an aqueous and non-aqueous medium.

c. Explain why Lewis acid is not required in the bromination of phenol?

17. Give one chemical test to distinguish between the following pair of compounds phenol and Benzoic acid. **[3]**