

UNIT-11

ALCOHOLS, PHENOLS & ETHERS

1 Marks Questions

1. Write the IUPAC name of the product formed by the catalytic reduction of Butanal.
2. How can you prepare Phenol from Aminobenzene.
3. Para-amino phenol is less acidic than phenol. Give reason.
4. Arrange the following alcohols in the order of increasing reactivity towards Lucas reagent:
2-butanol, 1-butanol, 2-methyl-2-propanol.
5. Which bond of alcohol is cleaved during its reaction with carboxylic acid?
6. Which structural isomer of butanol cannot be dehydrogenated by copper at 573K?

2 Marks Questions

7. Anisole reacts with HI to give phenol and methyl iodide and not iodobenzene and methylalcohol. Give reason.
8. Write the equations of the reactions which takes place when
 - I. Thionyl chloride is treated with 2-propanol.
 - II. Cumene hydroperoxide is treated with dil. H_2SO_4 .
9. Why is that the phenol is acidic and hexanol is neutral towards a solution of NaOH.
10. Out of benzene and phenol which is more easily nitrated and why?
11. A) di-tert-butyl ether cannot be made by Williamson's synthesis. Explain why?
B) name the carbocation formed when 3,3 di-2-butanol is treated with dilute acid.
12. Write the steps involved in the mechanism of acid catalysed hydration of propene.

13. Give a chemical test to distinguish between the following pairs of compounds

- I. Phenol and cyclohexanol.
- II. Propan-2-ol and benzylalcohol.

3 Marks Questions

14. An organic compound (A) having molecular formula C_6H_6O gives a characteristic colour with aqueous $FeCl_3$ solution (A) on treatment with CO_2 and $NaOH$ at 400 K under high pressure gives (B) which on acidification gives a compound (C). C reacts with acetyl chloride to give (D), which is a popular Pain Killer. Deduce the structures of (A), (B), (C) and (D).

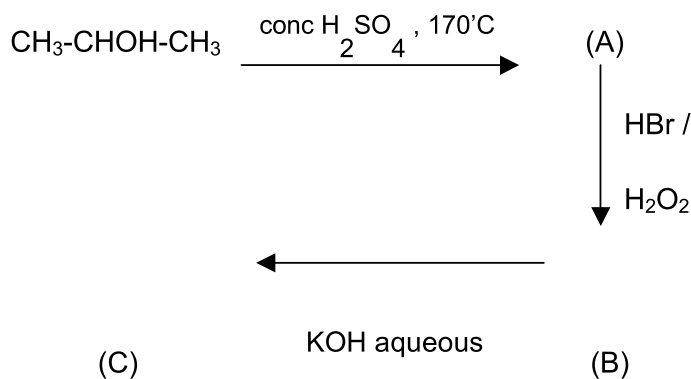
15. Write the chemical equations and reaction conditions for the conversion of

- I. Phenol to salicylaldehyde.
- II. Methanol to ethanol
- III. Anisole to 4-methoxyacetophenone

16. Name the reagents for the following

- I. Oxidation of primary alcohol to aldehyde.
- II. Oxidation of primary alcohol to carboxylic acid.
- III. Dehydration of propan-2-ol to propene.
- IV. Reduction of butan-2-one to butan-2-ol.

17. Complete the following reaction



18. Compound (A) reacts with $SOCl_2$ to give compound (B). B reacts with Mg to form Grignard reagent which is treated with acetone and the product is hydrolyzed to give 2-methylbutan-2-ol. What are A and B compounds?