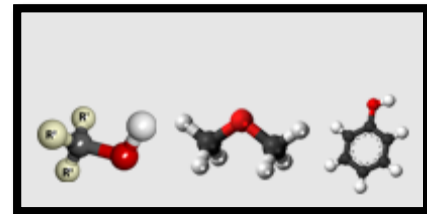


National Institute of Open Schooling
Senior Secondary Course: Chemistry
Chapter 26: (Alcohols, Phenols and Ethers)
Worksheet-26



1. Raj was asked to synthesize alcohol by acidic hydration of 1-butene. He was unaware of the fact that the vessel he used had some coating of metal, and in addition to alcohol (bp.373 K), compound A (b.p.353K) was also isolated. Compound A forms bisulphite compound as well as 2, 4-dinitrophenyl hydrazone. Separation of alcohol could be made by physical as well as chemical methods. (a) How is alcohol acid Compound A formed? (b) Can alcohol acid Compound A give iodoform test? (c) Give the different methods of separation.

2. Ethyl alcohol is an excellent solvent and is used in medicines and synthesis of many chemical compounds. However in spite of its benefits to man, its impact on social behavior has always been questioned. It is considered as a curse in the lives of those who are addicted to alcohol called alcoholic people because it not only affects their own lives but they are also a threat to the lives of others. Anger and rude behavior are some of its ill effects. Answer the following:
 - (a) As a student of chemistry what initiative would you take in the common concern of 'save life, do not drink'. Give suggestion.
 - (b) Comment on the statements 'should production of alcohol be banned'. Give three valid reasons to justify

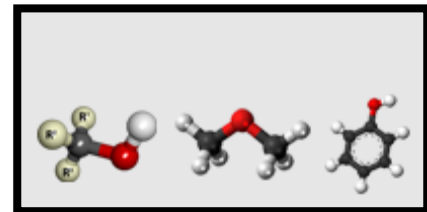
3. Write the reaction showing the conversion of molasses to ethyl alcohol using yeast.

4. State Reasons:
 - (i) Alcohol is more soluble in water than the hydrocarbons of comparable molecular masses.
 - (ii) Ortho-nitrophenol is more acidic than ortho-methoxyphenol.
 - (iii) The boiling point of ethanol is higher than that of methoxymethane.
 - (iv) Phenol is more acidic than ethanol.

5. Explain the mechanism of :
 - (i)
$$\text{CH}_3\text{CH}_2\text{OH} \xrightarrow{\text{HBr}} \text{CH}_3\text{CH}_2\text{Br} + \text{H}_2\text{O}$$
 - (ii) acid dehydration of ethanol to yield ethene.

6. Arrange the following in the increasing order of their acidic strength:
 - (i) p-cresol, p-nitrophenol, phenol
 - (ii) Propan-1-ol, 2, 4, 6-trinitrophenol, 3-nitrophenol, 3,5-dinitrophenol, phenol, 4-methylphenol.

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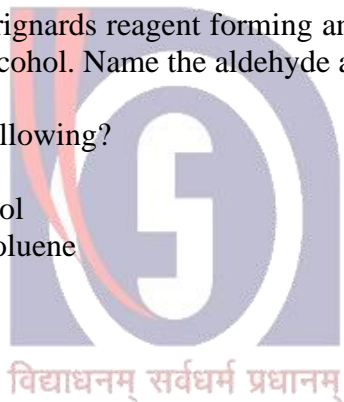


7. Give simple chemical tests to distinguish between the following pairs of compounds:
 - (i) Ethanol and Phenol
 - (ii) Propanol and 2-methylpropan-2-ol

8. Write IUPAC names along with the structures of the products:
 - (i) Catalytic reduction of butanal.
 - (ii) Hydration of propene in the presence of dilute sulphuric acid.
 - (iii) The reaction of propanone with methylmagnesium bromide followed by hydrolysis.

9. An aldehyde reacts with Grignard's reagent forming an intermediate product which on hydrolysis gives primary alcohol. Name the aldehyde and write the chemical equation.

10. How do you convert the following?
 - (i) Aniline to phenol
 - (ii) Prop-1-ene to Propan-1-ol
 - (iii) Anisole to 2-methoxytoluene



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