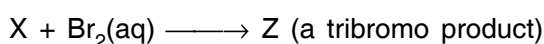
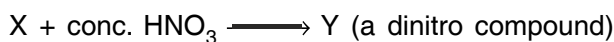
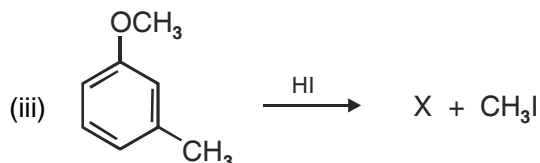
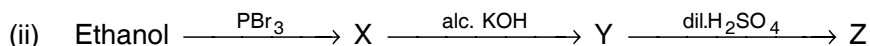
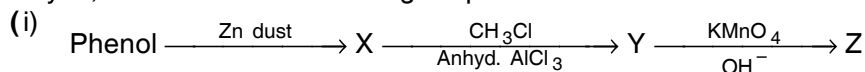


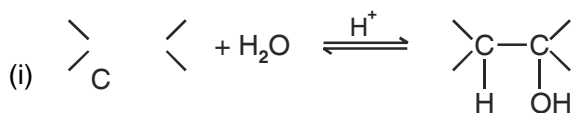
1. Identify X, Y and Z in the following sequence of reactions :



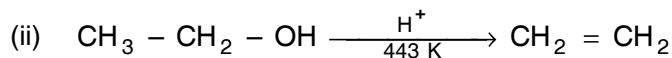
2. Describe the mechanism of Chemical reactions in which alcohol acts as a nucleophile or an electrophile.

3. Write the mechanism for following reactions

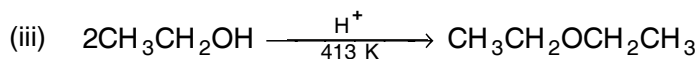
:



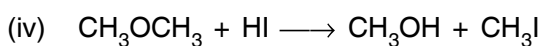
(acid catalysed hydration of alkenes)



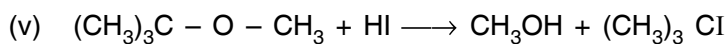
(acid catalysed dehydration of alcohols)



(acid catalysed nucleophilic substitution reaction)



(acid catalysed cleavage of ethers)



(acid catalysed cleavage of ethers)

4. Give reason for the following : (i) The C-O-C bond angle

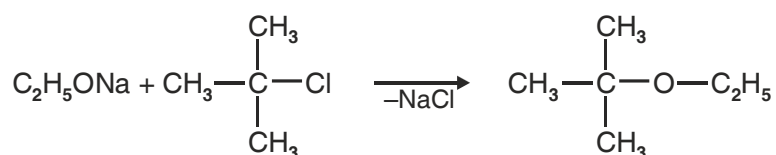
in dimethylether is (111.7°)

(ii) Alcohols have higher boiling points than ethers of comparable molecular mass.

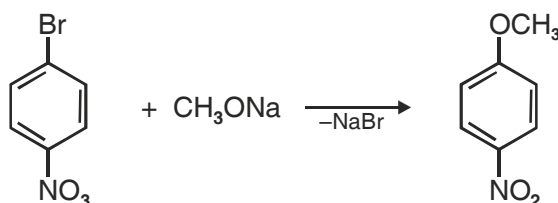
(Assignment - 2)

Alcohols, Phenols and Ethers

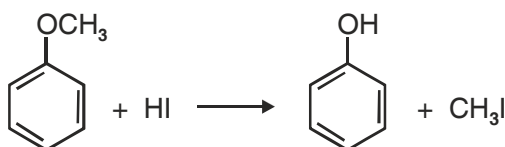
- (iii) Phenols are more acidic than alcohols.
- (iv) Nitrophenol is more acidic than o-methoxyphenol.
- (v) Phenol is more reactive towards electrophilic substitution reaction than benzene.
- (vi) Preparation of ether by treatment of alcohol with dilute H_2SO_4 is not a suitable method for the preparation of diisopropylether or tert butylether.
- (vii) The following is not an appropriate method for the preparation of t-butyl ethyl ether :



- (viii) The following is not an appropriate method for the preparation of 1-methoxy-4-nitrobenzene;



- (ix) o-Nitrophenol is steam volatile but p-nitrophenol is not.
- (x) Phenol is less polar than ethanol.
- (xi) The phenylmethylether reacts with HI to form phenol and iodomethane and not iodobenzene and methanol.



- (xii) Methanol is less acidic than water.
 - (xiii) Alcohols can act as weak base as well as weak acids.
 - (xiv) Phenols do not give protonation reaction readily.
 - (xv) Alcohols undergo nucleophilic substitution reactions but phenols do not undergo nucleophilic substitution at C-1 carbon.
 - (xvi) Absolute ethanol can not be obtained by fractional distillation of ethanol water mixture.
5. Arrange the following in the increasing order of property shown :
- (i) Methanol, Ethanol, Diethylether, Ethylene-glycol.
(Boiling points)
 - (ii) Phenol, o-nitrophenol, m-nitrophenol, p-nitrophenol.
(Acidic strength)
 - (iii) Dimethylether, ethanol, phenol.
(Solubility in water)
 - (iv) n-butanol, 2-methylpropan-1-ol, 2-methylpropan-2-ol.
(Acidic strength)
6. Give a chemical test to distinguish between the following pair of compounds.
- (i) n-Propylalcohol and isopropylalcohol
 - (ii) Methanol and ethanol
 - (iii) Cyclohexanol and phenol.
 - (iv) Propan-2-ol and 2-methylpropan-2-ol.
 - (v) Phenol and anisole (vi)
Ethanol and diethylether
7. Which of the following compounds gives fastest, reaction with HBr and why?
- (i) $(\text{CH}_3)_3\text{C} - \text{OH}$
 - (ii) $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$
-