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 ANSWERS

1]. IUPAC NAMES OF ORGANIC COMPOUNDS

 CH3OCH2-Methoxymethane

 CH3CH2OCH2CH3- Ethoxyethane

 (CH3CH2CH2CH2)2O- Butoxymethane

 CH3CH2CH2OCH2CH3- Ethoxypropane

2]. PROPERTIES OF ETHERS

 a). Physical state; At room temperatures, ethers are colourless with unpleasant odours. Lower aliphatic ethers are volatile liquids and flammable gases

 b). Solubility; Other corresponding alcohols are more soluble in water than ethers, ethers with lower molecular weight are fairly soluble in water but as the hydrocarbon content of the molecules increase, there is a fast reduction in solubility. They are miscible with most organic solvents

 c). Reactivity; Ethers are inert at room temperatures. This inertness at room temperatures leads to their wide use as reaction media

 d). Density; Most of the simple ethers are less dense than water although the density increases with increasing RMM and some of the aromatic ethers are in fact denser than water

 e). Boiling Point; Lower molecular mass ethers have a lower boiling point than the corresponding alcohols but others containing alkyl radicals larger than 4 carbon atoms, the reverse is the case

3] PREPARATION OF ETHERS

 a). Partial dehydration of alcohols; Simple ethers are manufactured from alcohol through catalytic dehydration. The alcohol in excess and conc. H2SO4 is heated at a carefully maintained temperature of 140 degrees, this process is known as continuous etherification. If excess alcohol is not used the temperature can be high as 170 - 180 degrees, further dehydration will yield alkenes

 2ROH---------------------------->R-O-R + H2O

 Conc.H2SO4/140 degrees where r is an alkyl group

E. g 2CH3CH2OH------------------>CH3CH2-O- CH3CH2 + H2O

 b). From haloalkanes and dry silver(I) oxide

 2RX + Ag2O---------->R-O-R + H2O

 Warm

 2CH3CH2Br + Ag2O---------> CH3CH2OCH2CH3 + 2AgBr

4]. USES OF ETHYLENE OXIDE

 a) Ethylene oxide is used as a gaseous sterilizing agent

 b) It is used as an intermediate in the hydrolytic manufacture of ethylene glycol

 c) It is also used in the preparation of nonionic emulsifying agents, plastics, plasticizers and several synthetic textilles