

larger than four carbon atoms, the reverse is true.

5) Reactivity

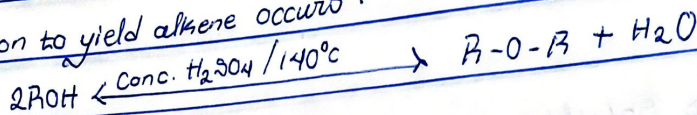
Ethers are inert at moderate temperatures. Their inertness at moderate temperature leads to their wide use as reaction media.

3) Discuss explicitly two methods of preparing ethers and show equations of reaction.

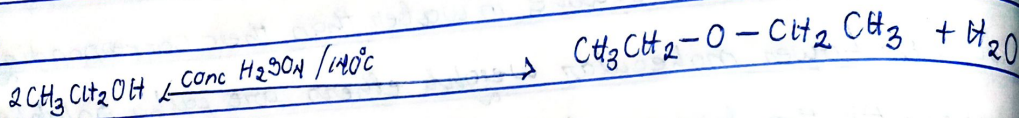
i) Partial dehydration of alcohols.

Simple ethers are manufactured from alcohols by catalytic dehydration. The alcohol in excess and concentrated tetraoxosulphuric acid is heated at a carefully maintained temperature of 140°C .

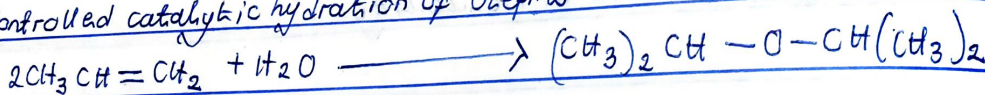
This process is known as continuous esterification. If excess alcohol is not used, the temperature is as high as $170-180^{\circ}\text{C}$, further dehydration to yield alkene occurs.



eg



2) Controlled catalytic hydration of Olefins



2-Isopropoxypropane

4) Write 3 uses of Ethylene oxide.

i - It is used as a gaseous sterilizing agent.

ii - It is used as an intermediate in the hydrolytic manufacture of ethylene glycol.

iii - It is used in the preparation of nonionic emulsifying agents, plastics, plasticizers, and several synthetic materials.