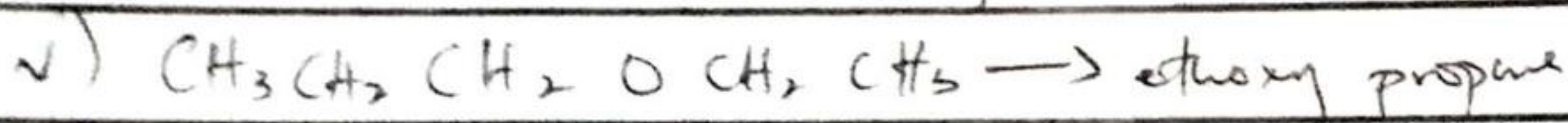
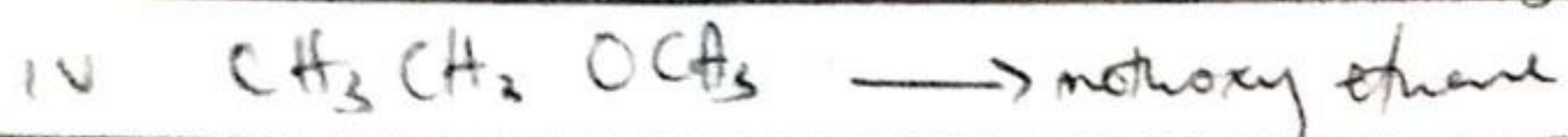
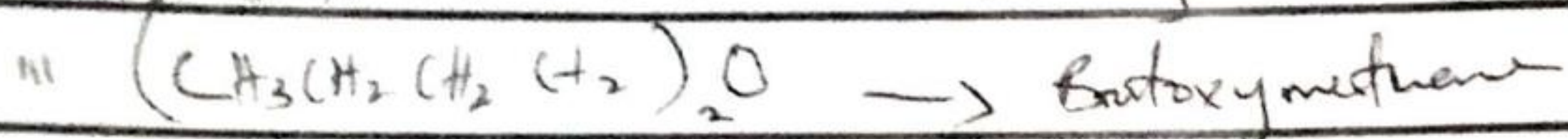
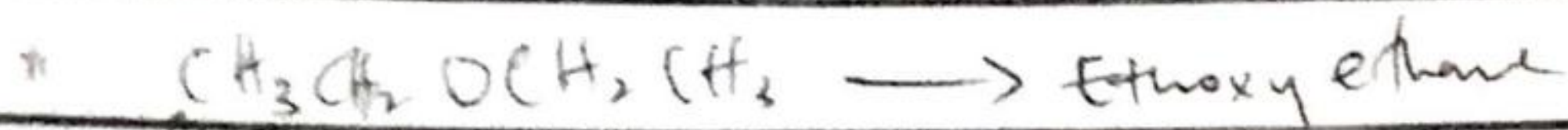
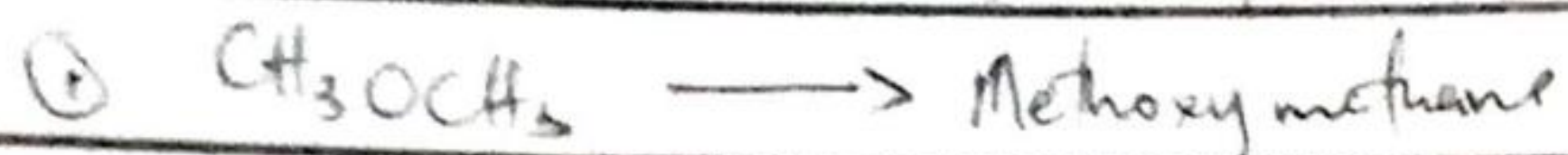


① IUPAC NAMES OF THE FOLLOWING



② Properties of ethers

→ Physical state - At room temperature, ethers are colourless, neutral liquids with pleasant odours. The lower aliphatic ethers are highly flammable gases or volatile liquids.

→ Solubility - Ethers are less soluble in water than are the corresponding alcohols. Lower molecular weight ethers such as methoxymethane are fairly soluble in water since the molecules are able to form hydrogen bonds with the water molecules. But as the hydrocarbon content of the molecules increases, there is a rapid decrease in solubility.

→ Density - most of the simple ethers are less dense than water, although the density increases with increasing relative molecular mass and some of the aromatic ethers are in fact denser than water.

→ Boiling point - As molecular mass increases, ethers have a lower boiling point than their corresponding alcohols but the ether containing alkyl groups larger than four carbon atoms, the reverse is true.

→ Reactivity - ethers are inert at moderate temperatures. Their inertness at moderate temperatures leads to their wide use as reaction media.

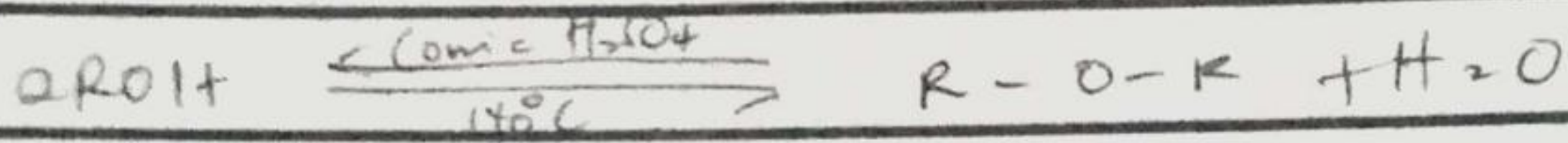


## METHOD OF PREPARATION

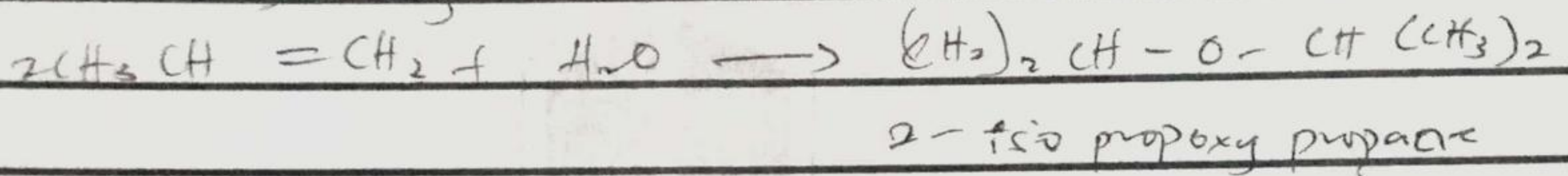
### ① Partial Decomposition of Alcohols

Simple alcohols are manufactured from alcohols by catalytic dehydration.

The alcohol in excess and concentrated  $H_2SO_4$  is reacted at a careful range temperature of  $140^\circ C$ .



### ② Controlled Catalytic hydration of Olefins (Alkenes)



Uses of ethylene oxide.

- ① Ethylene oxide is used as an intermediate in the hydrolytic manufacture of ethylene glycol.
- ② Ethylene oxide is used as a gaseous sterilizing agent.