

NAME: ADESIYAN ADEDARA OSEGHARE

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COURSE CODE: CHM 102

### Assignment

1- Give IUPAC names.

i.  $\text{CH}_3\text{OCH}_3 \rightarrow$  Methoxy methane (di-methyl ether)

ii.  $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3 \rightarrow$  Ethoxyethane (di-ethylether)

iii.  $(\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O} \rightarrow$  Butoxy butane (di-butylether)

iv.  $\text{CH}_3\text{CH}_2\text{OCH}_3 \rightarrow$  Methoxy ethane

v.  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3 \rightarrow$  Ethoxy propane

2. Discuss the properties of ethers.

a. Physical properties.

i. Density  $\Rightarrow$  most of the simple ethers are less dense than water; although density increases with increasing relative molecular mass

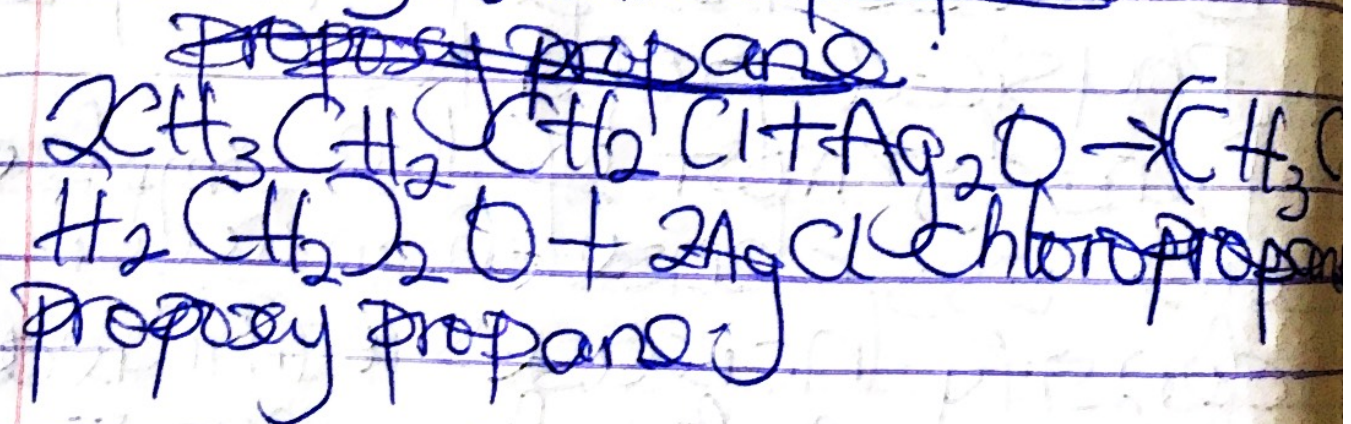
ii Physical state  $\rightarrow$  at room temperature, ethers are colourless neutral liquids with pleasant odours.

iii Solubility. Ethers are less soluble in water than the corresponding alcohols. Lower molecular weight ethers such as methoxyethane and methoxy methane are fairly soluble in water.

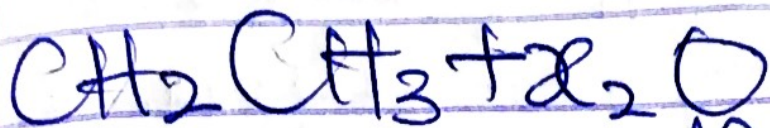
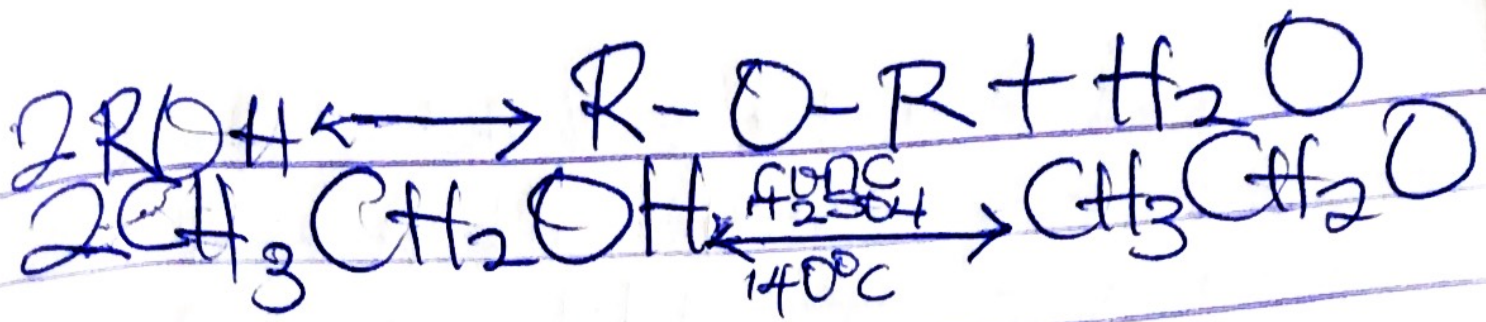
3. From haloalkanes and dry silver chloride

$$2RX + Ag_2O \rightarrow 2R-O-R + 2AgCl$$

~~chloro propane~~ X



4 Partial dehydration of alcohols



ethoxy ethane

Ethylene oxide sterilization processes can sanitize medical and pharmaceutical products.

ii ~~It is~~ Ethylene glycol, derived from ethylene oxide, is used to manufacture fibre glass.

iii It is used in the production of chemicals used for making cosmetics and shampoos.