

ADEBIYI ADEOLUWA EMMANUEL.
19/MTHS01/021 MTHS - MEDICINE.
CHM 102 ASSIGNMENT

1. Give the IUPAC names of the following organic compounds.
 - a. CH_3OCH_3 - dimethoxymethane.
 - b. $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ - ethoxyethane.
 - c. $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$ - butoxybutane.
 - d. $\text{CH}_3\text{CH}_2\text{OCH}_3$ - ethoxymethane.
 - e. $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$ - propoxyethane.

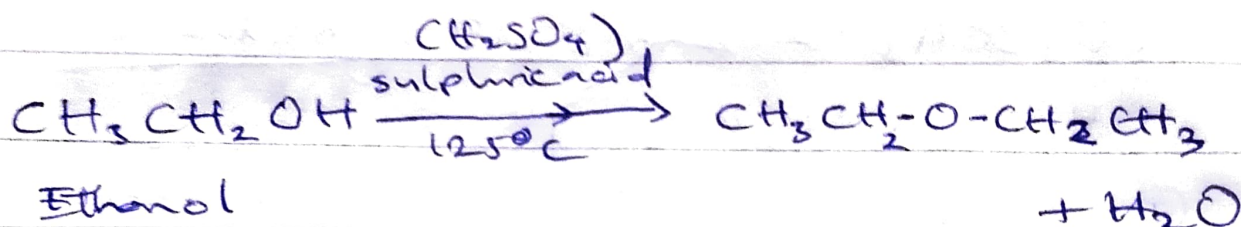
2. Discuss the properties of ethers.

- a. They have low boiling points due to their inability to form hydrogen bonds with each other.
- b. Ethers are slightly polar.
- c. Lower ethers are highly volatile and flammable.
- d. They are good organic solvents.
- e. Simple or symmetric ethers are tasteless.
- f. Lower ethers act as anaesthetics.

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

a. Dehydration of ethers.

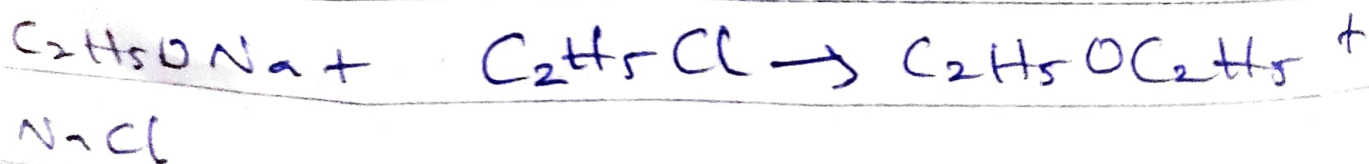
This direct substitution reaction requires higher temperatures of about 125°C and is catalyzed by acids, usually sulphuric acid.



b. Williamson ether synthesis.

This involves the treatment of an alcohol with a strong base to form an alkoxide followed by the addition of an alkyl halide (iodide, bromide) and this method works best for primary halides.

An example of this is the reaction of sodium ethoxide with chloroethane.



4. State three uses of ethylene oxide.

a. Used in production of ethylene glycol.

b. Used in the production of glycol eth.

c. Used in the production of ethanolamine.