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$(C_4H_9)_2CO$

- 1) Give the IUPAC names of the following organic compounds
- CH_3OCH_3 - Methoxymethane
 - $CH_3CH_2OCH_2CH_3$ - Ethoxyethane
 - $(CH_3CH_2CH_2CH_2)_2O$ - Dodecylmethane
 - $CH_3CH_2OCH_3$ - methoxyethane
 - $CH_3CH_2CH_2OCH_2CH_3$ - Ethoxypropane

2) Discuss the properties of ethers

a) Physical properties

- An ether molecule has a net dipole moment due to the polarity of C-O bond that of alcohols of comparable molecular weight but much lower than that of alcohols of comparable molecular weight despite the polarity of C-O bond.
- Ethers are miscible in water as the oxygen atom of ether can also form hydrogen bonds with a water molecule.

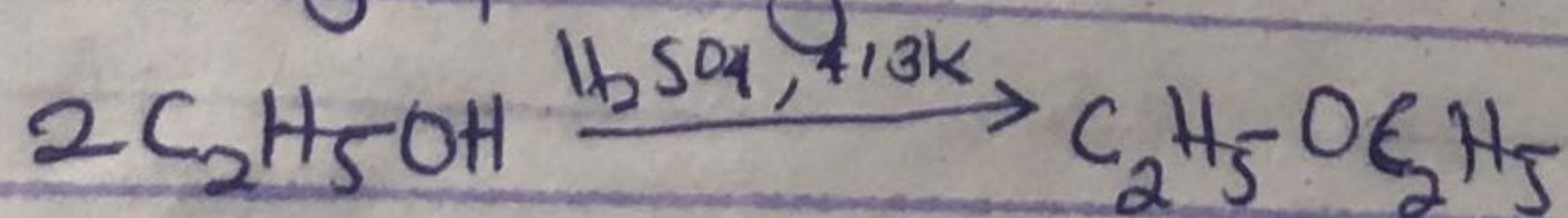
b) Chemical properties

- Halogenation of ethers: Aromatic ethers undergo hydrogenation e.g. bromination

3)

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

- Dehydration of alcohols: In the presence of sulphuric acid, dehydration of ethanol yields ethoxyethane at 413K. This is an ideal method of preparation through primary alcohols



Uses of ethylene oxide

It is used as a gaseous sterilizing agent

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

It is used in the preparation of plastics