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DEPARTMENT: PHARMACY

LEVEL: 100

MATRIC NO: 19/MHS11/108

## Chemistry assignment on Ethers

1 IUPAC names of

- i  $\text{CH}_3\text{OCH}_3$  - Dimethyl ether
- ii  $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$  - Diethyl ether
- iii  $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$  - Ethoxy propane
- iv  $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$  - methyl ethyl ether
- v  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$  - ethyl propyl ether

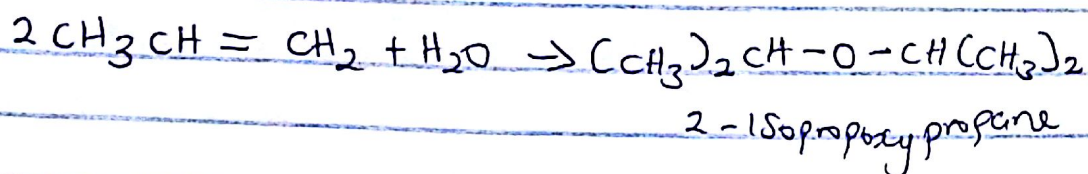
2 Properties of Ethers

- i Physical state: At room temperature, ethers are colourless, neutral liquids with pleasant odours. The lower aliphatic ethers are highly flammable gases or volatile liquids.
- ii Solubility: ethers are less soluble in water than are the corresponding alcohols. Lower molecular weight ethers are fairly soluble in water since the molecules are able to form hydrogen bonds with water molecules but as the hydrocarbon content of the molecules increases, there is rapid decline in solubility.
- iii Density: most simple ethers are less dense than water
- iv Boiling point: low molecular mass ethers have a lower boiling point than the corresponding alcohols.
- v Reactivity: Ethers are inert at normal temperature. Simple ethers are not commonly found in nature but ether linkage is present in such natural products as sugars, starches and cellulose.

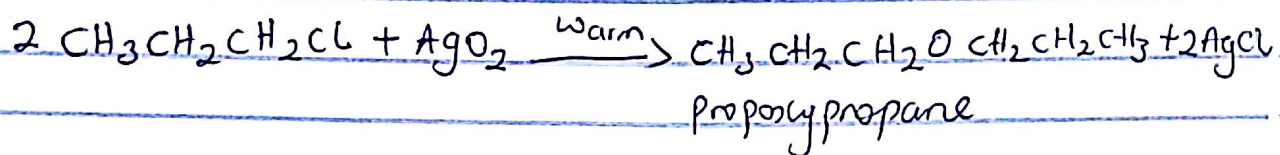
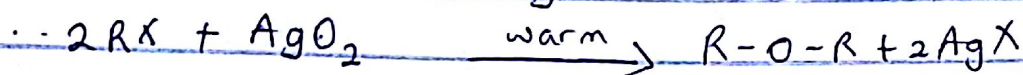


### 3) Method of preparing ethers.

i) Controlled catalytic hydration of olefins



ii) From haloalkanes and dry silver(I) oxide



### 4) Uses of Ethylene Oxide

i) Ethylene oxide is used as an intermediate in the hydrolytic manufacture of ethylene glycol

ii) It is used in preparation of emulsifying agents or plastics

iii) It is used as a gaseous sterilizing agent.