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MATRIC NO: 191MHS011079

COURSE: CHEMISTRY 102

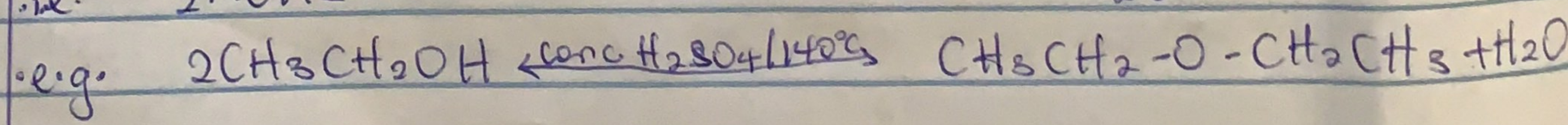
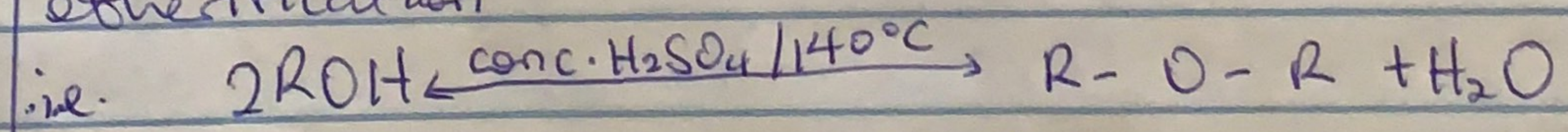
DEPT: MBBS; 100L

- 1
  - i]  $\text{CH}_3\text{OCH}_3$  - methoxymethane
  - ii]  $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$  - ethoxyethane
  - iii]  $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$  - diboxymethane
  - iv]  $\text{CH}_3\text{CH}_2\text{OCH}_3$  - methoxyethane
  - v]  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$  - ethoxypropane

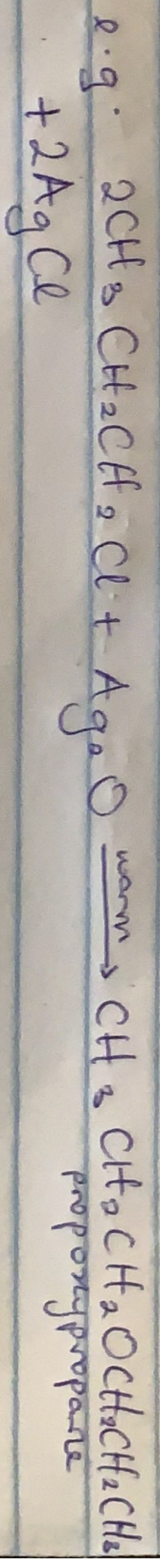
- 2
  - i) Physical state; At room temperature, ethers are colourless, neutral liquids with pleasant odours
  - ii) Solubility; Ethers are less soluble in water than are the corresponding alcohols.
  - iii) Density; Most simple ethers are less dense than water, although the density increases with increasing relative molecular mass.
  - iv) Boiling point; Low molecular mass ethers have a lower boiling point than the corresponding alcohols.
  - v) Reactivity; Ethers are inert at moderate temperature

3 i) PARTIAL DEHYDRATION OF ALCOHOLS

- Simple ethers are manufactured from alcohols by catalytic dehydration. The alcohol in excess and concentrated hexafluorosulphate (vi) acid is heated at a carefully maintained temperature of  $140^\circ\text{C}$ . This process is known as 'continuous etherification'



ii) To prepare ethers from haloalkanes, this includes Williamson's synthesis and heating haloalkanes with dry silver (I) oxide. Williamson's synthesis is an organic reaction, forming an ether from an organohalide and a deprotonated alcohol (alkoxide). It typically involves the reaction of an alkoxide ion with a primary alkyl halide. via an  
 i.e.  $2RX + Ag_2O \xrightarrow{\text{warm}} R-O-R + 2AgX$



4) Ethylene oxide is used as an intermediate in the production of several industrial chemicals, the most notable of which is ethylene glycol.

- ii) It is used as a fumigant in certain agricultural products
- iii) It is used as a sterilant for medical equipment and supplies.