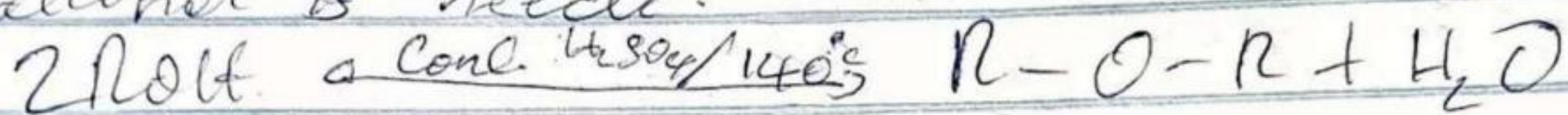


They are snactae at a moderate temperature.

③ Preparations of ethers:

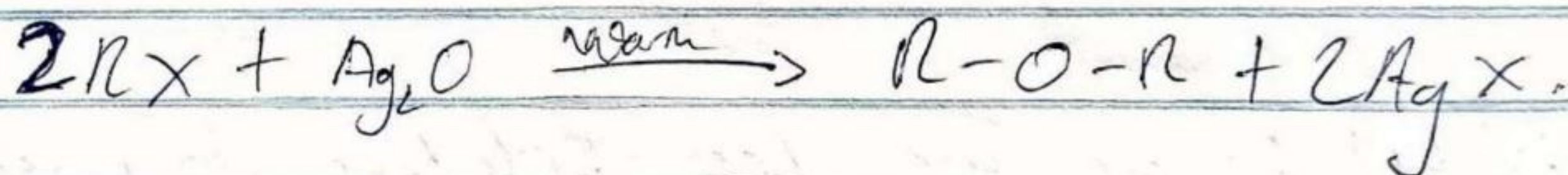
① Partial dehydration of alcohols:

Simple ethers are manufactured from alcohol by catalytic dehydration. The alcohol in excess and conc. H_2SO_4 is heated at a moderate temperature of $140^\circ C$. This is a process called "continuous etherification". Excess alcohol is needed.



② From Haloalkanes & Dry Silver Oxide:

Ethers can be manufactured from Haloalkanes. Dry Silver (I) oxide is being added to the Haloalkanes and the being warmed. This reaction leads to ether being formed.



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- Ans
- (i) CH_3OCH_3 - Methoxymethane
 - $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ - Ethoxyethane
 - $[\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2]_n\text{O}$ - Polyethoxymethane
 - $\text{CH}_3\text{CH}_2\text{OCH}_3$ - Methoxyethane
 - $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$ - Ethoxypropane.

(ii) Properties of ethers.

(i) Physical states: At room temperature, ethers are colourless, neutral liquids, that have pleasant odours. The lower ethers that are aliphatic are highly flammable gases / volatile liquids.

(ii) Solubility: Ethers are less soluble in water. Lower molecular weight ethers are fairly soluble in water because the molecules are able to form hydrogen bonds with the water molecules but as the hydrocarbon content of the molecule increases, there is a rapid decrease in solubility.

(iii) Density: Most of the simple ethers are less dense than water while some of the aromatic ethers are denser than water.

(iv) Boiling point: Low molecular mass ethers have a lower boiling point than the corresponding alcohols but those ethers which have alkyl radicals larger than four carbon atoms have a higher boiling point.

(v) Reactivity: Ethers are inert at moderate temperatures.

④ Use of ethylene oxide

① it is used in the preparation of non-ionic emulsifying agents -ics etc.

② it is used as an intermediate in the hydrolytic manufacture of ethylene glycol.

③ it is used as a gaseous sterilizing agent.