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MATRIC NO: 19/174501/20

COURSE: CHM 102

DEPARTMENT: MEDICINE AND SURGERY

DATE: MONDAY 13TH APRIL 2020

ANSWERS

- 1) CH_3OCH_3 : Methoxymethane
- 2) $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$: Ethoxyethane
- 3) $\text{CH}_3\text{CH}_2\text{OCH}_3$: Ethoxymethane
- 4) $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$: Ethoxypropane
- 5) $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$: Butoxymethane

PROPERTIES OF ETHERS

- 1) Physical states: ethers are colourless, neutral liquid with pleasant odours at room temperature, lower aliphatic ethers are highly flammable gas or volatile liquids.
- 2) Solubility: Ethers are less soluble in water than corresponding alcohols. Lower molecular ethers are fairly soluble in water.
- 3) Boiling point: lower molecular mass ethers have a higher boiling point than corresponding alcohols while ethers containing alkyl radicals larger than four carbon atoms have a higher boiling point.
- 4) Reactivity: ethers are relatively ^{at} moderate temperature and such leads to their wide use as ~~reactive~~ reactive media.

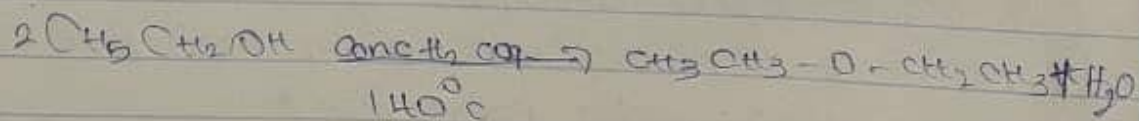
Density: Increases with increasing relative molecular mass. Simple ethers are less than water.

4) uses of ethylene oxide

- ① As a gaseous sterilizing agent
- ② As an intermediate in the hydrolytic manufacture of ethylene glycols.
- ③ Used in the manufacture of products like polyethylene glycol.

3) 100 methods of preparing ethers and their equations of reactions.

1) Partial dehydrogenation of alcohols: Simple ethers are prepared by catalytic dehydration of manufactured alcohols by a process called esterification in excess alcohols or high temperature as high as $170-180^{\circ}\text{C}$.



2) From haloalkanes and dry silver oxide: Ethers can be prepared by heating haloalkanes with dry silver oxide.

