

ANUGWU FRANKLIN CHEMELLE

19/MHS01097

MBBS

CHEM 102

1] Give the IUPAC names of the following organic compounds

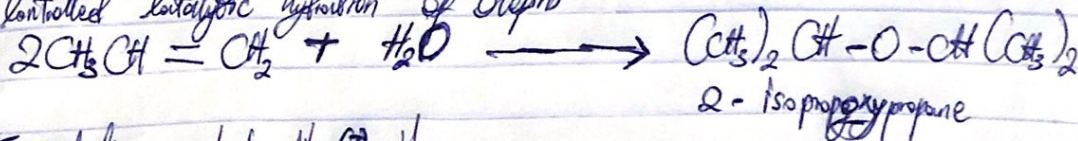
- i] CH_3OCH_3 - Methoxy methane
- ii] $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ - Ethoxy ethane
- iii] $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$ - Butoxy methane
- iv] $\text{CH}_3\text{CH}_2\text{OCH}_3$ - Methoxy ethane
- v] $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$ - Ethoxy propane

2] Discuss the properties of ethers

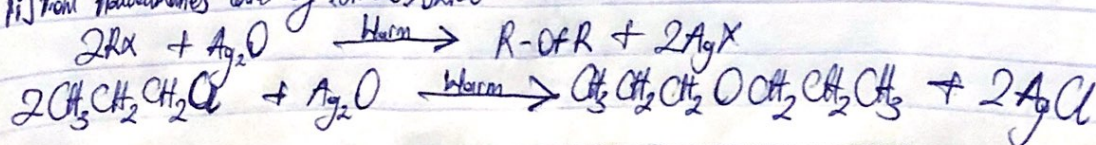
- i] Physical States: Ethers are colorless, neutral liquids with pleasant odours at ATP. The lower ones are highly flammable gases or volatile liquids.
- ii] Solubility: Ethers are less soluble in water than the corresponding alcohols. Lower molecular weight ethers are fairly soluble in water but as the hydrocarbon content of molecules increases, there is a rapid decline in solubility. Ethers are miscible with most organic solvents.
- iii] Density: Most of the simple ethers are less dense than water, although the density increases with increasing relative molecular mass and some of the aromatic ethers are in fact denser than water.
- iv] Boiling Point: Low molecular mass ethers have a lower boiling point than the corresponding alcohol but those ethers containing alkyl radicals larger than four carbon atoms, the reverse is true.
- v] Reactivity: Ethers are inert at moderate temperature and this leads to their wide use as reaction media.

3] Discuss explicitly two methods of preparing ethers and show equations of reaction

i] Controlled catalytic hydration of olefins



ii] From Haloalkanes and dry Silver(I) oxide



4] State three uses of ethylene oxide.

- Used as an intermediate in the hydrolytic manufacture of ethylene glycol.
- Used in the preparation of nonionic emulsifying agents, plasticizers, plasticizers and dyestuff.
- Used as a gaseous sterilizing agent.