NAME: OKEDARE ADESEWA JULIET

MATRIC NUMBER: 19/MHS02/091

DEPARTMENT: NURSING

COURSE CODE: CHM102

1. Give the IUPAC names of the following organic compounds.
* $CH\_{3}OCH\_{3}$ Methoxymethane
* $CH\_{3}CH\_{2}OCH\_{2}CH\_{3}$ Ethoxyethane
* (C$H\_{3}$C$H\_{2}$C$H\_{2}$C$H\_{2})\_{2}$0 Butoxymethane
* $CH\_{3}CH\_{2}OCH\_{3}$ Methoxyethane
* $CH\_{3}CH\_{2}CH\_{2}OCH\_{2}CH\_{3}$ Ethoxypropane.
1. Properties of Ethers
* Solubility: Ethers are less soluble in water than the corresponding alcohols. The lower molecular weight ethers such as methoxymethane and methoxyethane are fairly soluble in water due to the molecule are able to form hydrogen bond with the water molecules but when the hydrocarbons content of the molecules increase , there is a rapid decline in solubility.
* Physical states: Ethers are colourless, neutral liquids with pleasant odours at room temperature. The lower aliphatic ethers are volatile liquids or highly flammable gases.
* Boiling point: The ethers with lower molecular mass have a lower boiling point than the corresponding alcohols but those ethers containing alkyl radicals larger than four carbon atoms, the reverse is true.
* Density: 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.
* Reactivity: Ethers are inert at moderate temperature and their inertness leads to their wide use as reaction media.
1. The methods of preparing ethers and the equations.
* Controlled catalytic hydration of olefins

$2CH\_{3}CH=CH\_{2}$ + $H\_{2}$O $\rightarrow $ $(CH\_{3})\_{2}CH-O-CH(CH\_{3})\_{2}$

 2-Isopropoxypropane

* From Haloalkanes and dry silver (1) oxide

 warm

$ 2RX+Ag\_{2}$ $\rightarrow $ $R-O-R+2AgX$

 warm

$2CH\_{3}CH\_{2}CH\_{2}Cl+Ag\_{2}O\rightarrow CH\_{3}CH\_{2}CH\_{2}OCH\_{2}CH\_{2}CH\_{3}+2AgCl$

 Propoxypropane

1. Uses of Ethylene oxide
* Ethylene oxide is used as a gaseous sterilizing agent.
* Ethylene oxide is used in the preparation of nonionic emulsifying agents, plastics, plasticizers and several synthetic textiles.
* Ethylene oxide used as an immediate in the hydrolytic manufacture of ethylene glycol.