EKpoLO-EkLOMAZNO-ESTHER.

19/MIB 02/045

NURSING

MEDICINE AND HEALTH SCIENCES

CHEM 102.

Give the IUPAC name of the following organic compounds

(a) CH_3OCH_3 ⇒ Methoxy methane.

(b) $CH_3CH_2OCH_2CH_3$ ⇒ ethoxy ethane.

(c) $[CH_3CH_2CH_2CH_2]_2O$ ⇒ But oxy methane.

(d) $CH_3CH_2CH_2OCH_2CH_3$ ⇒ ~~Eth~~ oxy propane.

~~(e) $CH_3CH_2OCH_2CH_3$ ⇒~~

(e) $CH_3CH_2OCH_3$ ⇒ methoxy ethane.

(2) Discuss the properties of ethers.

(1) Physical states: Simple ethers are colourless, neutral liquid with pleasant odours while the Aliphatic ethers are flamable gases of volatile liquids.

(2) Solubility: Ethers are less soluble than other alcohols. The lower ethers such as methyoxmethane (CH_3OCH) and methyoxethane ($CH_3CH_2OCH_3$) are fairly soluble.

(3) Density: Ethes are less dense than water.

(4) Boiling points: low molecular mass ethers have a lower boiling points than the corresponding alcohols. the molecules are not in the liquid phase as thee are no suitably available hydrogen for association through hydrogen bonds.

(5) Reactivity: ethers are inerts at moderate temperature which lead to their used as reaction media.

3) Discuss Explicitly two method of preparing ethers and show equation of reaction

Answer.

Partial dehydration of Alcohols & ethers are produce from Alcohols by Catalytic dehydration. Alcohols when ~~heated~~ heated in excess Concentrated tetraoxosulphate(VI) acids ~~produces~~ [H_2SO_4] At a temperature of 140°C produced ethers. this process is known as etherification But when the Conc. tetraoxosulphate(VI) is not used then the temperature must be raised to 170°C - 180°C

$$CH_3CH_2OH \xleftarrow{140^\circ C / Conc.\ H_2SO_4} CH_3CH_2-O-CH_2CH_3 + H_2O$$

ethanol — ethoxyethane — water

(2) From Haloalkanes and dry silver(I) oxides.

$$2CH_3CH_2CH_2Cl + Ag_2O \xleftrightarrow{warm} CH_3CH_2CH_2-O-CH_2CH_2CH_3 + 2AgCl$$

(1) State three uses of ethylene oxides.

(1) Ethylene oxides is used as an intermediate in the hydrolytic manufacture of ethylene glycol.

(2) Ethylene oxides is used as a gaseous sterilizing agents.

(3) ethylene oxide is used in the preparation of Nonionic emulsifying agents, plastic, synthetic textiles and plasticizers.