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Dept: Pharmacy

Matric No: 19/MHS11/028

Chemistry 102 Assignment

Answers

- a. CH_3OCH_3 - Methoxymethane
- b. $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ - Ethoxyethane
- c. $(\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$ - Butoxymethane
- d. $\text{CH}_3\text{CH}_2\text{OCH}_3$ - Methoxyethane
- e. $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$ - Ethoxypropane.

2. Properties of Ethers

a. Density:

Simpler ethers are less denser than water, Some aromatic ethers are denser than water.

b. Ether molecules are miscible in water. This is attributed to the fact that like alcohol, the oxygen atom of ether can also form hydrogen bonds with a water molecule.

c. The boiling point of ethers is comparable to the alkanes but much lower than that of alcohols of comparable molecular mass despite the polarity of the C-O bond. The miscibility of ethers with water resembles those of alcohols.

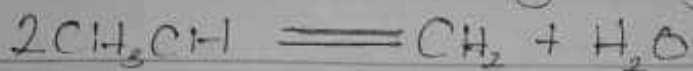
d. An ether molecules has a net dipole moment due to the polarity of C-O bonds.

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3b Controlled Catalytic hydration of olefins.



2-Isopropoxypropane.

4. Uses of Ethylene Oxide

- i. Ethylene Oxide is used as a Sterilization agent for medical equipments
- ii. Ethylene Oxide is used to make pesticides.
- iii. Ethylene Oxide is used to make detergents.

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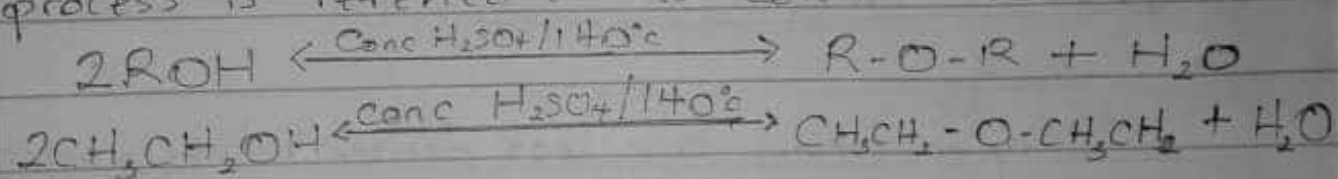
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f. Ethers are inert at moderate temperature which leads to their wide use as a reaction media.

3. Preparation of Ethers

a. Ethers can be manufactured from alcohols by catalytic dehydration. The remaining tetraoxosulphate(VI) acid and excess alcohol is heated at a temperature of 140°C . This process is referred to as continuous esterification.



b. Ethers can also be prepared by a method called the Williamson ether synthesis. In this reaction a halide ion is displaced from an alkyl halide by an alkoxide ion in an $\text{S}_{\text{N}}2$ reaction. The alkoxide ion is prepared by the reaction of an alcohol with a strong base such as Sodium hydride

