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**COLLEGE:** MHS

**DEPARTMENT:** NURSING

**ASSIGNMENT TITLE:** ASSIGNMENT ON ETHERS

**COURSE TITLE:** GENERAL CHEMISTRY II

**COURSE CODE:** CHM102

**QUESTIONS**

1. **Give the IUPAC names of the following organic compounds:**

* CH₃OCH₃
* CH₃CH₂OCH₂CH₃
* (CH₃CH₂CH₂OCH₂CH₃)₂O
* CH₃CH₂OCH₃
* CH₃CH₂CH₂OCH₂CH₃

1. **Discuss the properties of ethers.**

* Ethers are colorless, neutral liquids with pleasant smell at room temperature.
* Lower ethers that contain 1 or2 carbon atoms are fairly soluble in water while higher ethers are less soluble in water.
* Density of ethers increases with their relative molecular mass.
* The boiling point of ethers especially the ones with lower relative molecular mass have lower boiling point but the ethers containing alkyl radicals larger than 4 carbon atoms is the opposite
* Ethers are unreactive(inert) at room or normal temperature

1. **Discuss explicitly two methods of preparing ethers and show their equations of reaction.**

* BY DEHYDRATION OF ALCOHOLS:

In the presence of sulphuric acid, alcohols undergo dehydration to produce alkenes or ethers but using conc sulphuric acid that is heated at constant temperature of 140◦C will yield ether.

2CH₃CH₂OH concH₂SO₄/140◦C CH₃CH₂-O-CH₂CH₃ + H₂O

* BY WILLIAMSON SYNTHESIS:

This method involves the reaction between an alkyl halide and sodium alkoxide to lead to the formation of ether

R-X + R’-O⁻Na⁺ R-O-R’ + NaX

1. **State three uses of ethylene oxide.**

* It is used as an intermediate in the hydrolytic manufacture of ethylene glycol.
* It is used as a gaseous sterilizing agent.
* It is used in the preparation of non-ionic emulsifying agents, plastics and several synthetic textiles.