

CHM 102 ASSIGNMENT.

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COLLEGE:- MHS.

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MATRIC NO.:- 19/MHSD1/224

① IUPAC NAME:-

- (i) CH_3OCH_3 :- Methoxy methane.
- (ii) $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$:- Ethoxyethane.
- (iii) $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$:- Di-n-pentane.
- (iv) $\text{CH}_3\text{CH}_2\text{OCH}_3$:- Methoxy ethane.
- (v) $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$:- Alkoxy alkane.

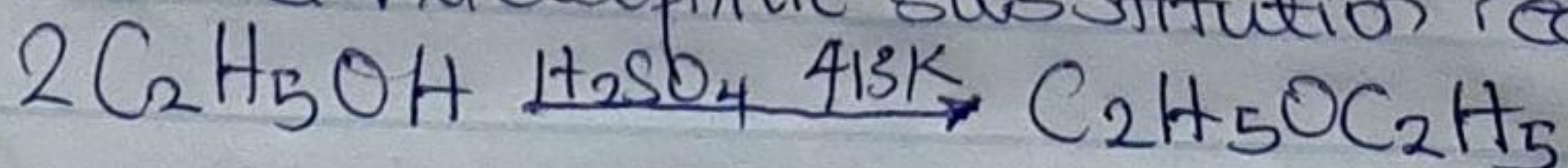
② (i) An ether molecule has a net dipole moment due to the polarity of C-O bonds.

(ii) The alkoxy group in ether activates the aromatic ring at the Ortho and para positions for electrophilic substitution.

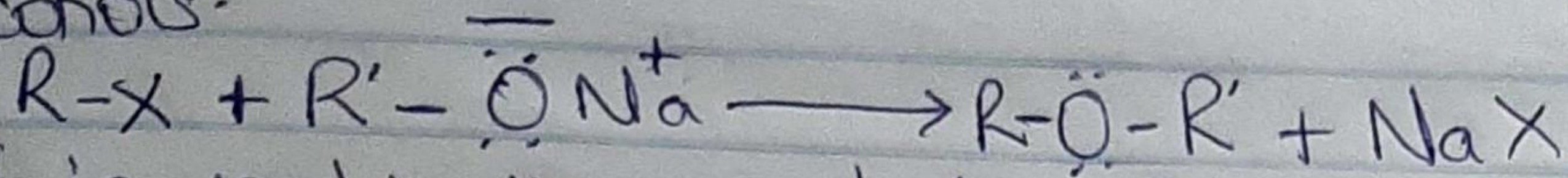
(iii) Ether molecules are miscible in water. This attribute is due to the fact that like alcohol, the oxygen atom of the ether can also form hydrogen bonds with a water molecule.

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

③ (i) Dehydration of alcohols :- In the presence of sulphuric acid, dehydration of ethanol yields ethoxyethane at 413K. This is an ideal method of preparation through primary alcohols. Preparations of ethers by dehydration of an alcohol is a nucleophilic substitution reaction.



(ii) Williamson's Synthesis :- When an alkyl halide reacts with sodium alkoxide, ether is formed. This reaction is known as Williamson's synthesis. The reaction generally follows the S_N2 mechanism for primary alcohols.



- ④ (i) It is used in the production of industrial chemicals.
- (ii) It is used as a fumigant.
- (iii) It is used as a sterilant for medical equipment and supplies.