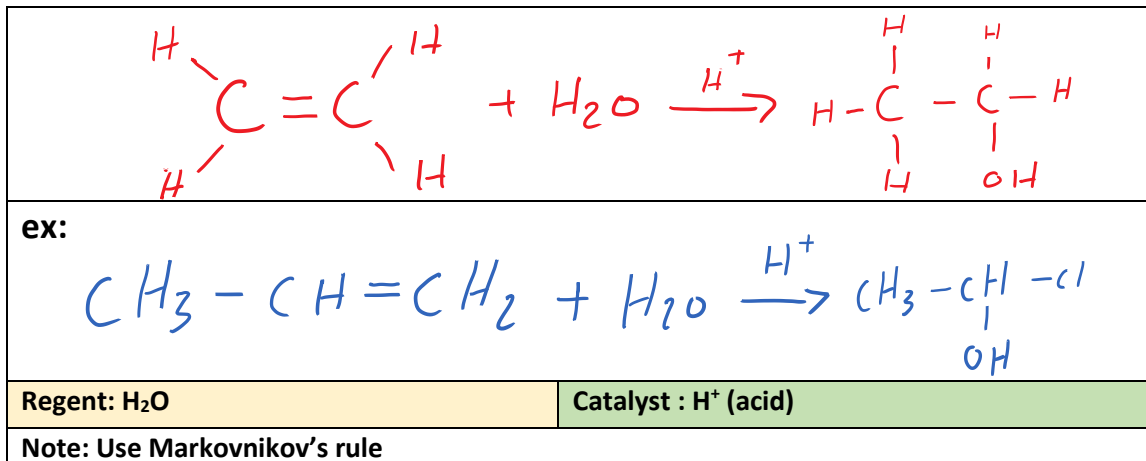


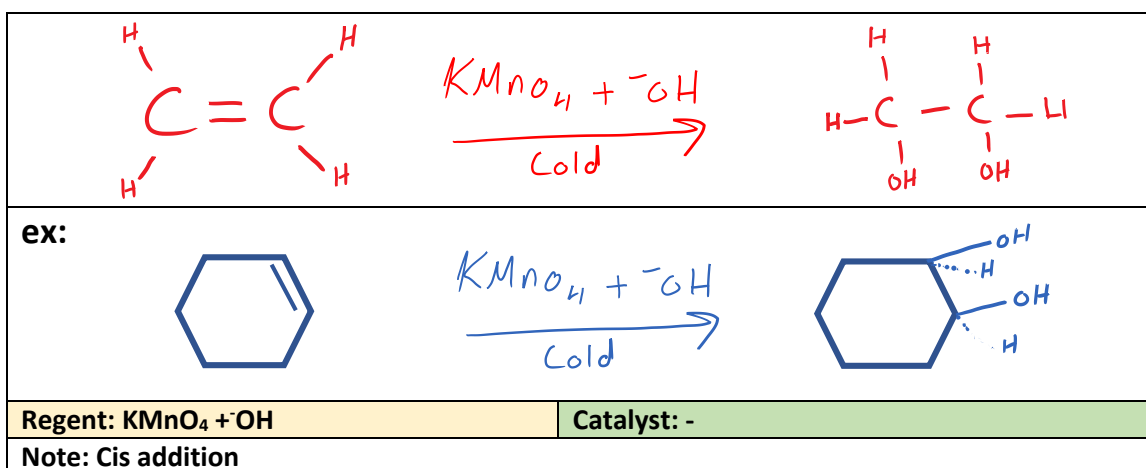
SUMMARY OF REACTIONS CHAPTER 4

Preparation of alcohol

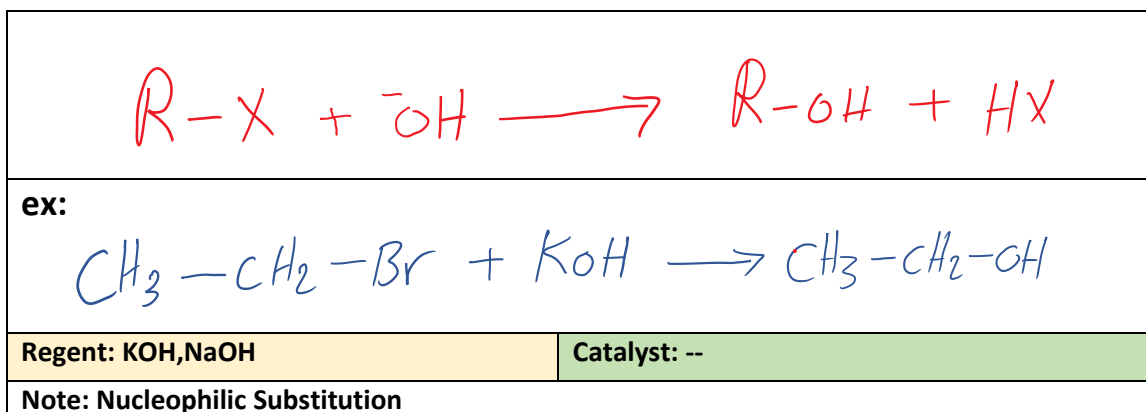
1. Form alkene (Hydrolysis):



2. From alkene (Oxidation):

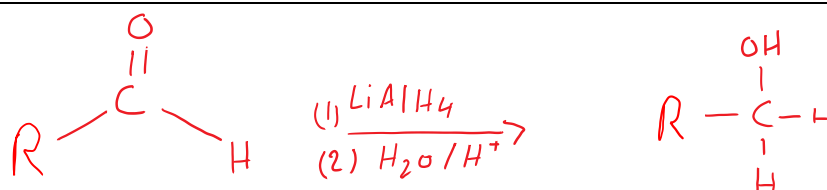


3. From Alkyl Halide (Nucleophilic Substitution):

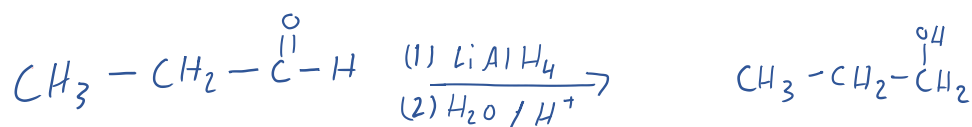


4. Reduction of Ketones and Aldehydes

aldehydes:



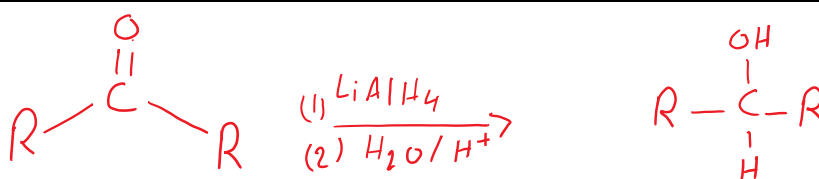
ex:



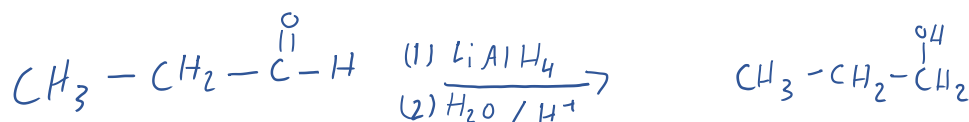
Reagent: **1) LiAlH₄ 2) H₂O/H⁺** Or **1) NaBH₄ 2) H₂O/H⁺** Catalyst: --

Note: Reduction of aldehydes gives primary alcohol (1°)

ketones:



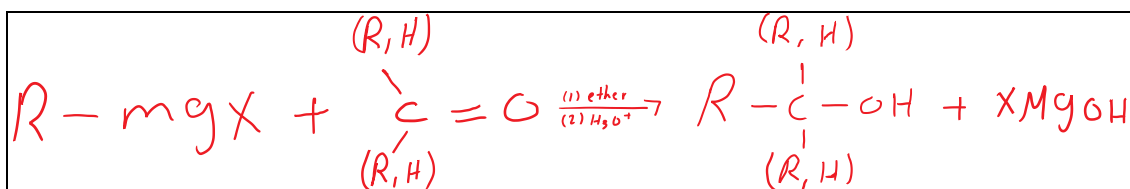
ex:



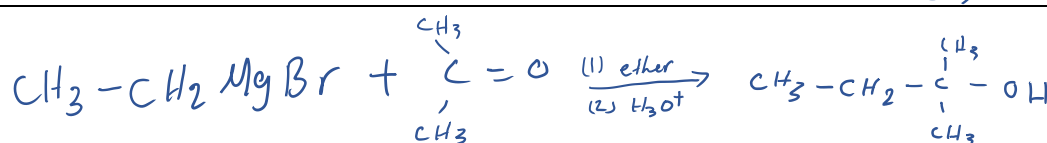
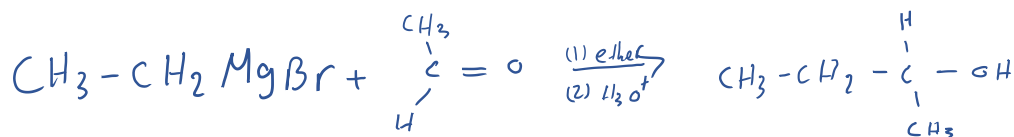
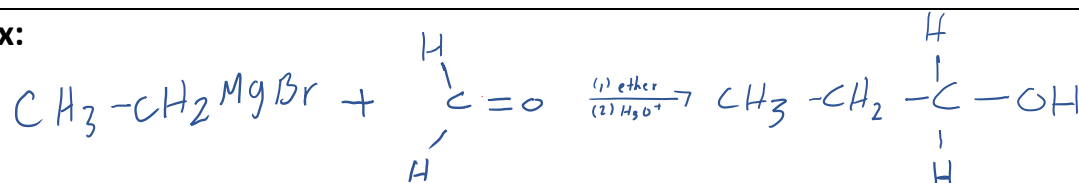
Reagent: **1) LiAlH₄ 2) H₂O/H⁺** Or **1) NaBH₄ 2) H₂O/H⁺** Catalyst: --

Note: Reduction of ketones gives secondary alcohol (2°)

5. Addition of Grignard's Reagent to Aldehydes and Ketones



ex:

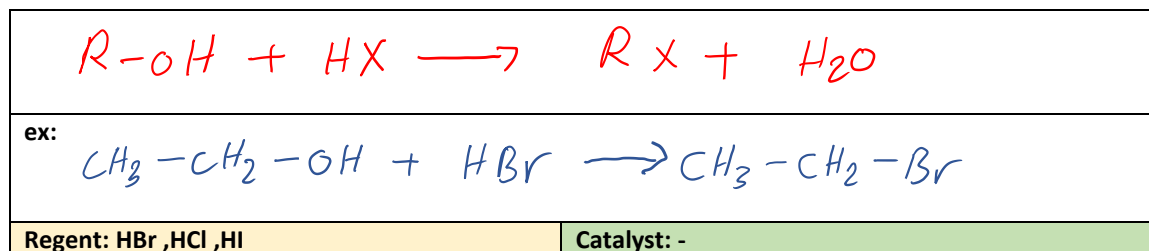


Reagent: **1) formaldehyde, aldehydes, ketones 2) H₃O⁺** Catalyst: ether solvent

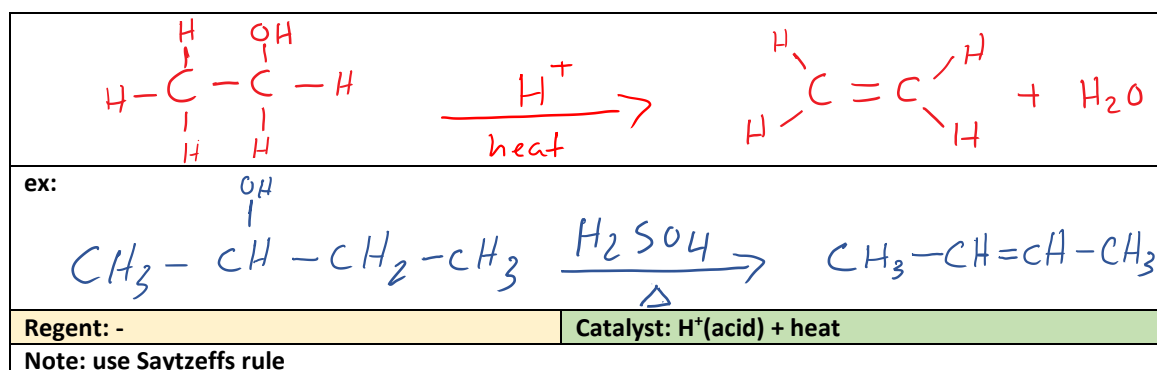
Note: formaldehyde gives 1° alcohol, aldehydes gives 2° alcohol, ketones gives 3° alcohol

Reaction of alcohol

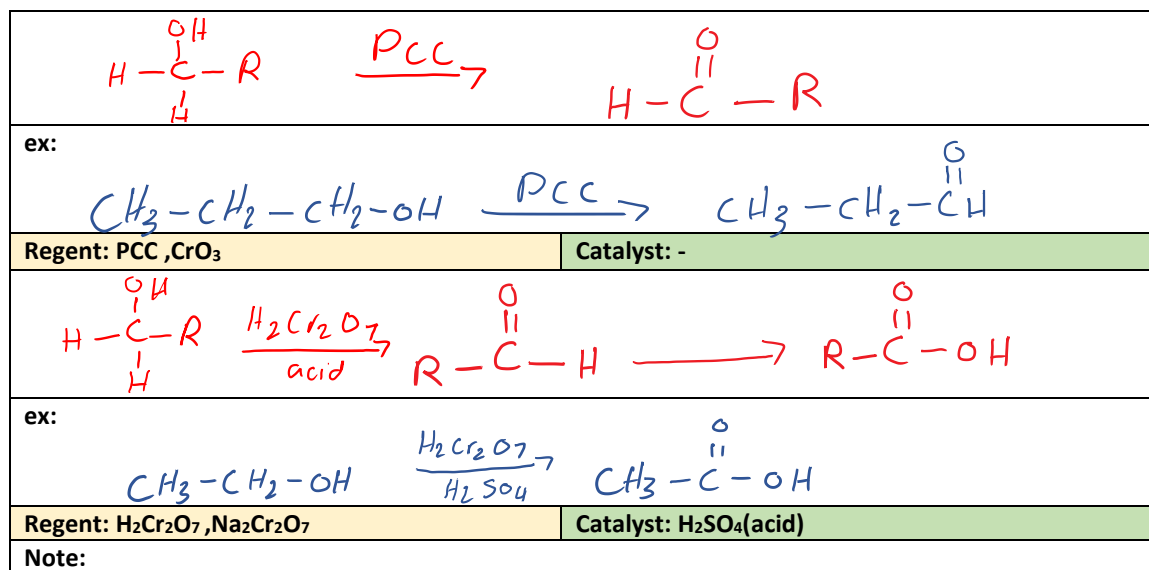
1. Reactions of Alcohols with Hydrogen Halides



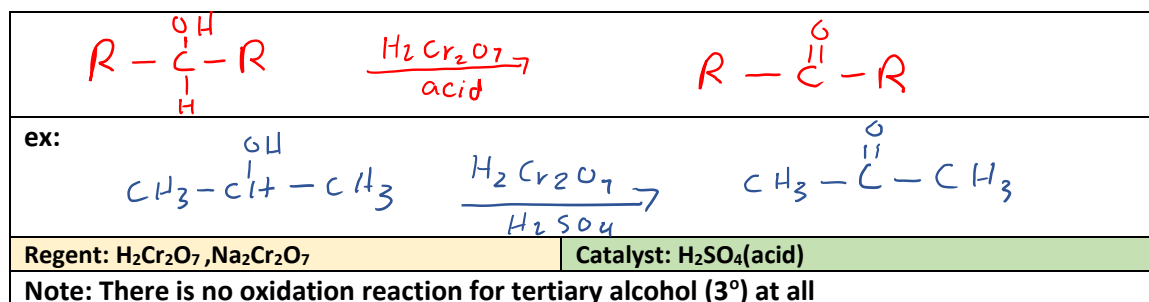
2. Dehydration of Alcohols to form Alkenes



3. Oxidation Reaction of Primary alcohol (1°)

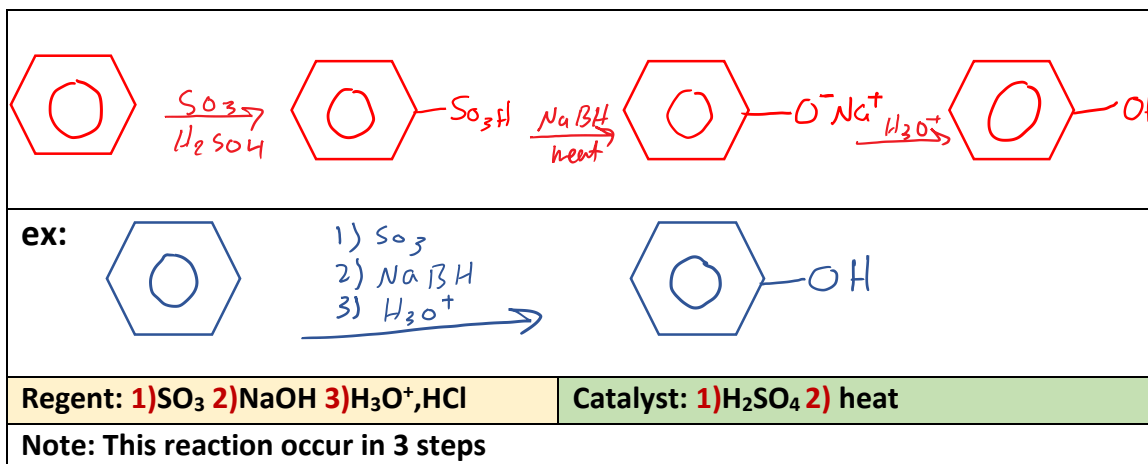


4. Oxidation Reaction of secondary alcohol (2°)



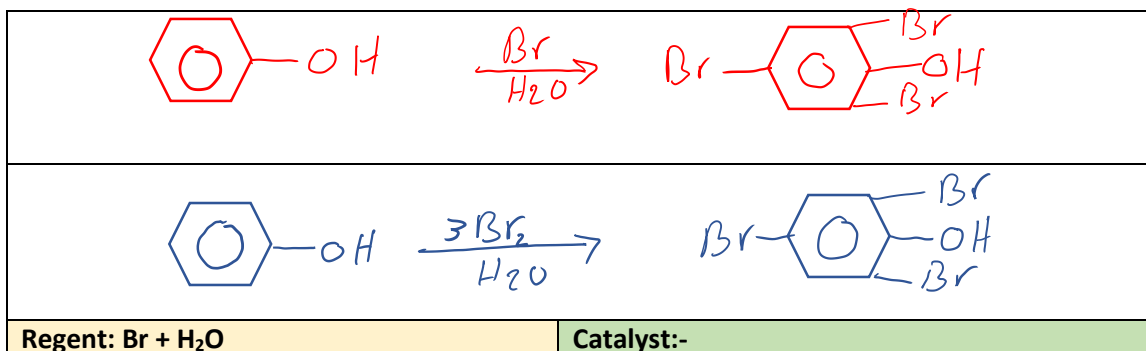
Preparation of Phenol

1. Alkali fusion of sulfonates

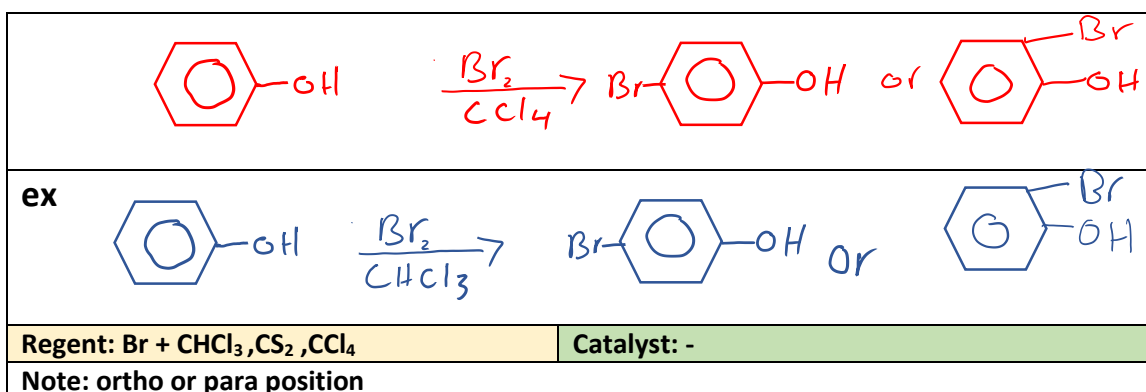


Reaction of Phenol

1. Halogenation with protic solvents (water)

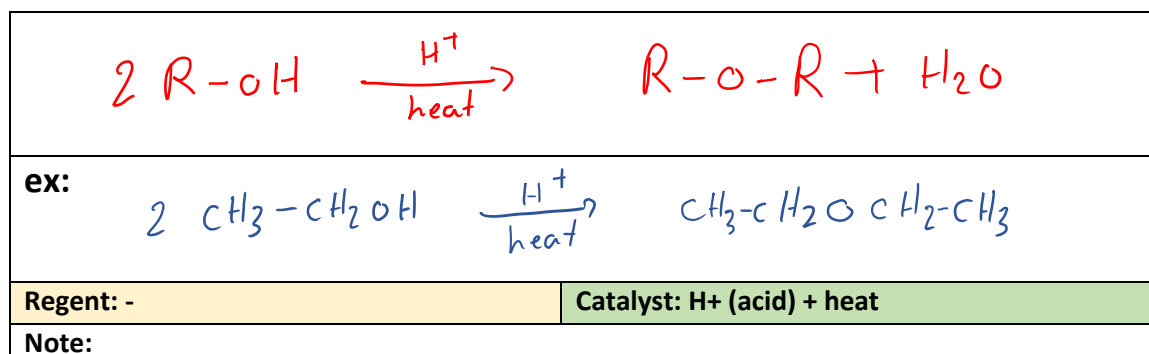


2. Halogenation with aprotic solvents

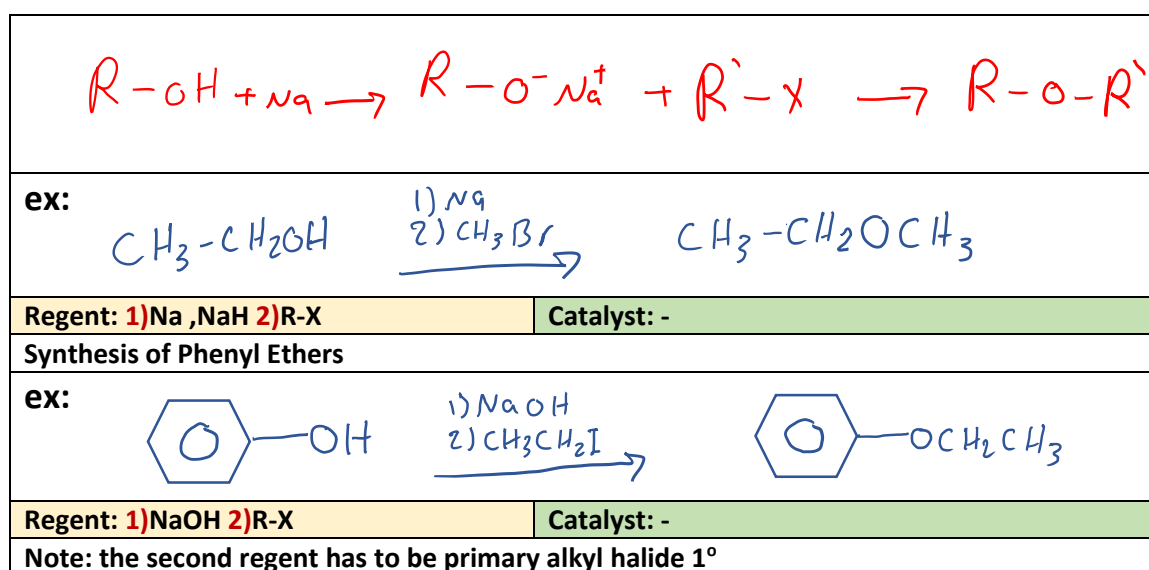


Preparation of Ether

1. Ethers by dehydration of alcohols

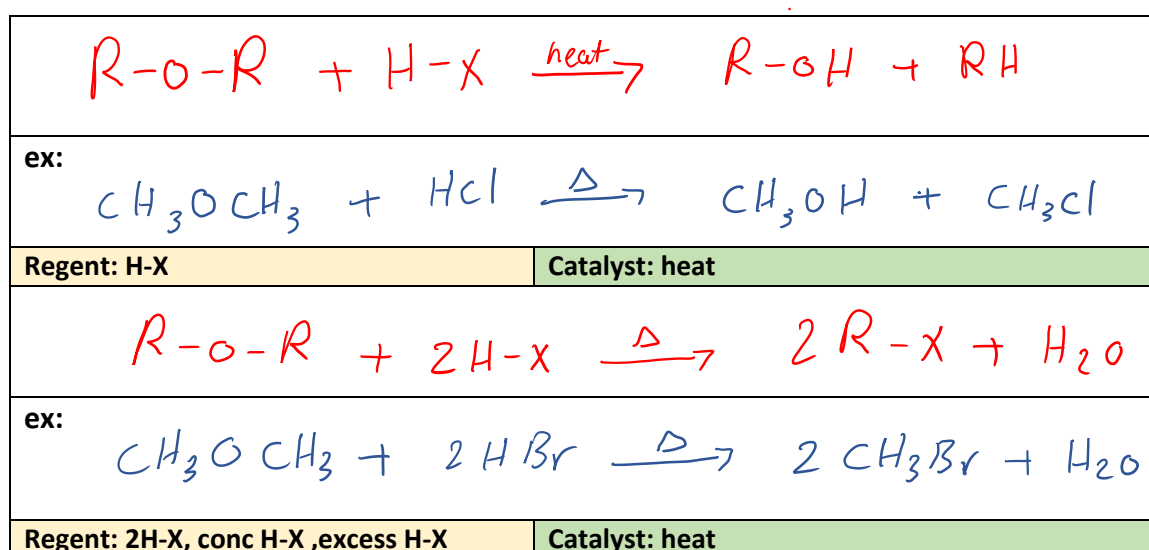


2. The Williamson synthesis of ethers



Reaction of ether

1. Cleavage of ethers by hot concentrated acids



نهاية التفاعلات ... عمل طلابي ان اصبنا فمن الله وان اخطانا فمن انفسنا والشيطان,,, لاتنسونا من دعائكم