

HALOALKANES & HALOARENES

1.

Lecture-13

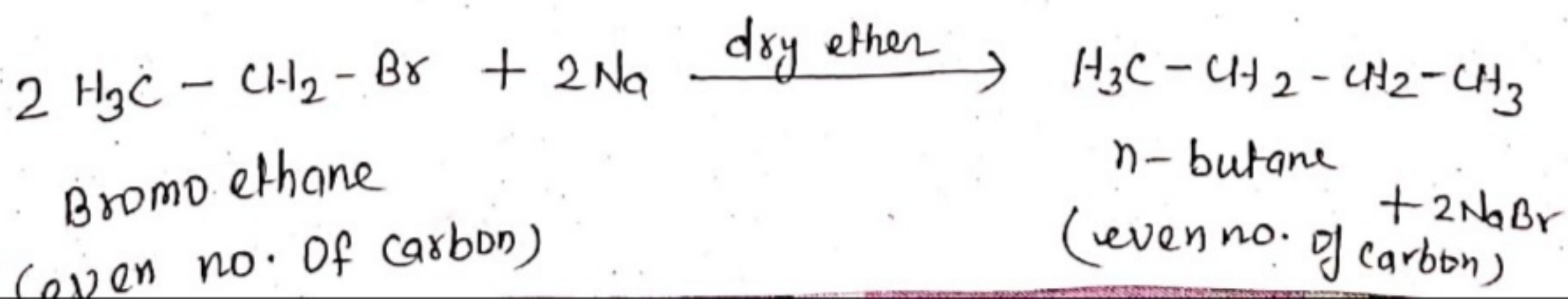
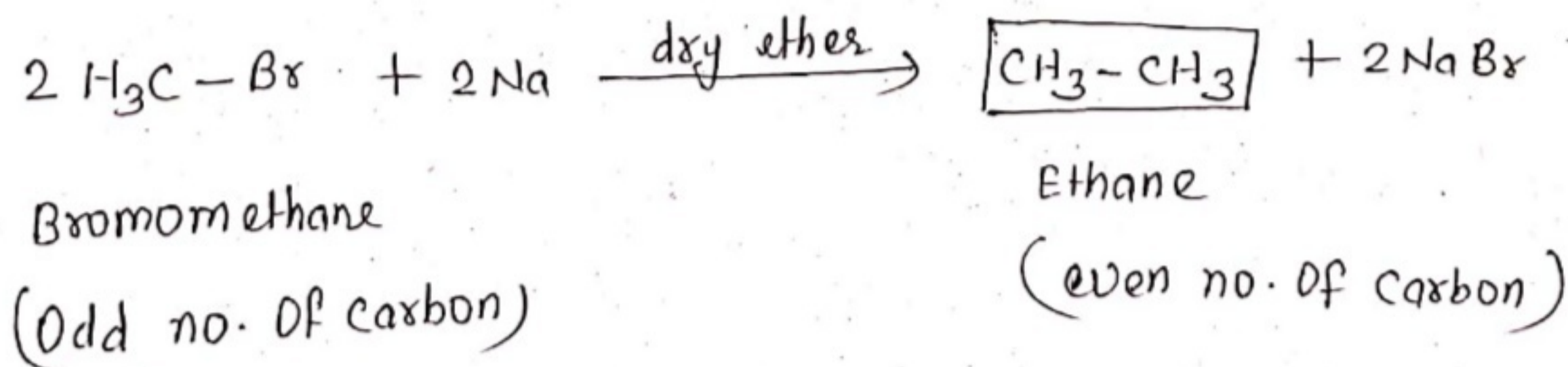
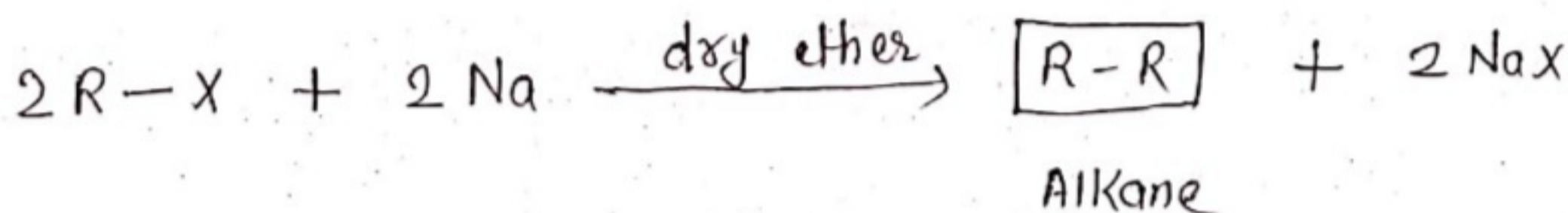
Topic - Reaction with Metal

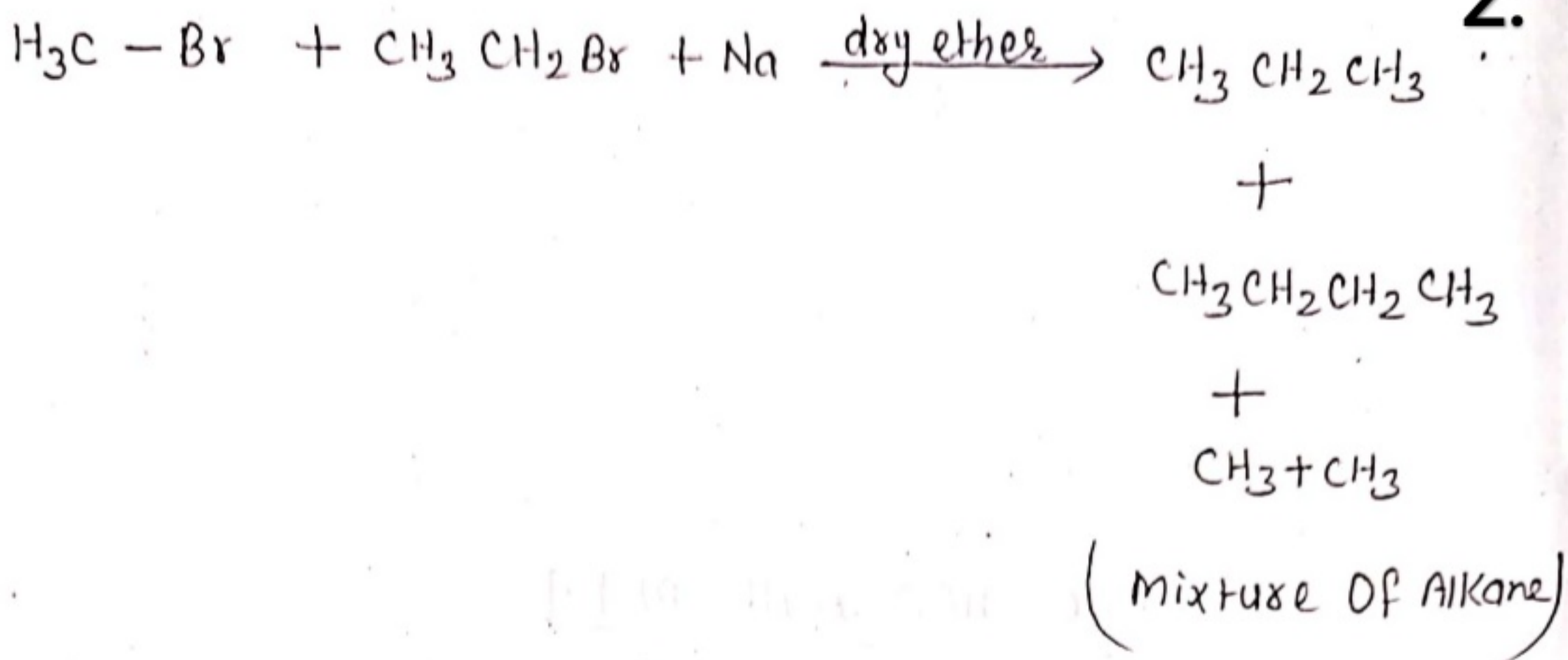
CHEMISTRY, CLASS-XII, UNIT-10, 07-07-2020

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~ WURTZ REACTION ~

Alkyl halides react with sodium in dry ether to give hydrocarbons containing double the number of carbon atoms present in the halide. This reaction is called Wurtz Reaction.





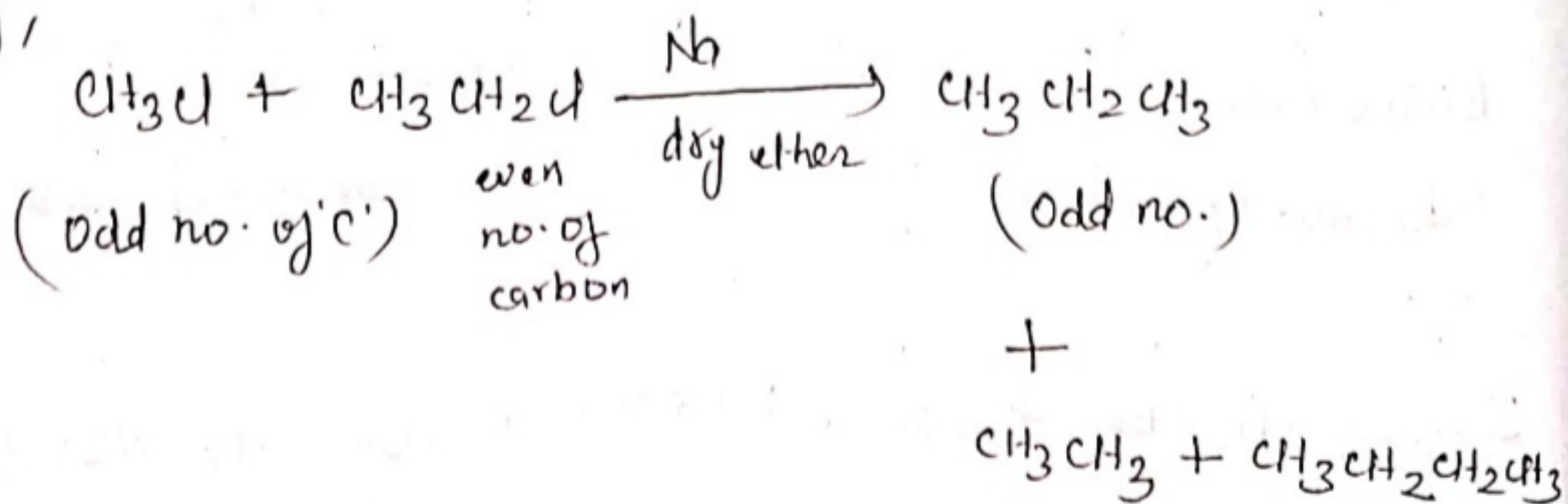
Q Wurtz reaction is not preferred for the preparation of alkane with odd no. of carbon. why?

Answer

For the preparation of alkane with odd no. of carbon we have to take two types of alkyl halide. One having odd no. of carbon and other having even no. of carbon.

Thus mixture of alkane will formed and it is different difficult to separate them.

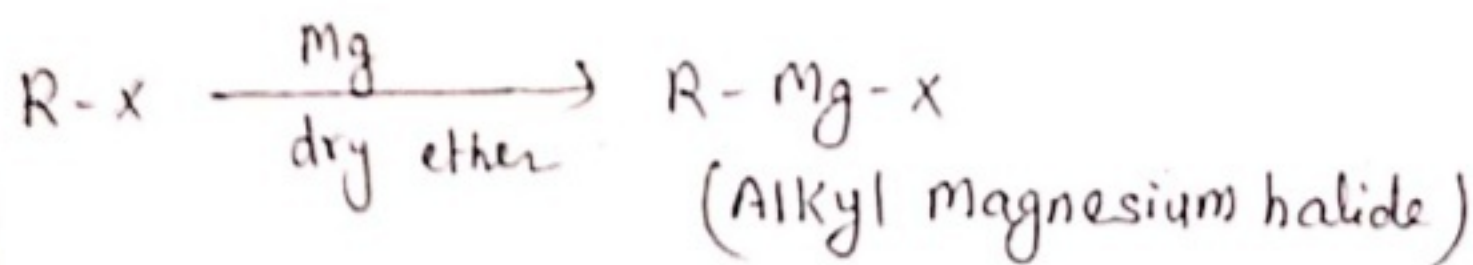
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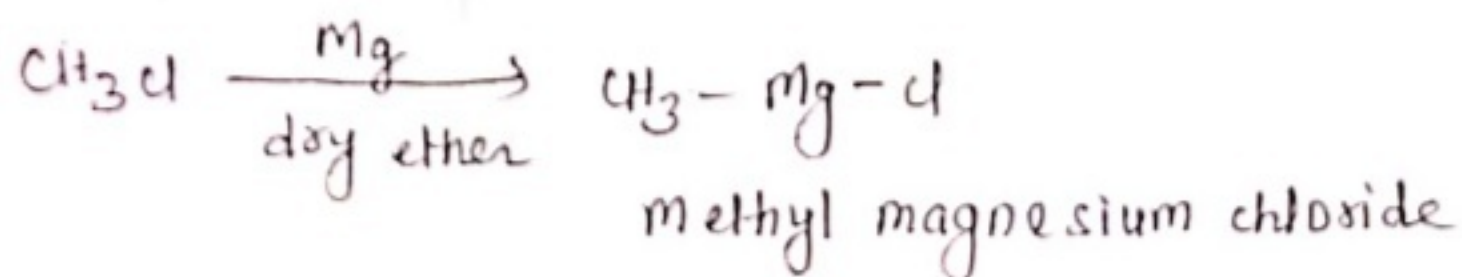
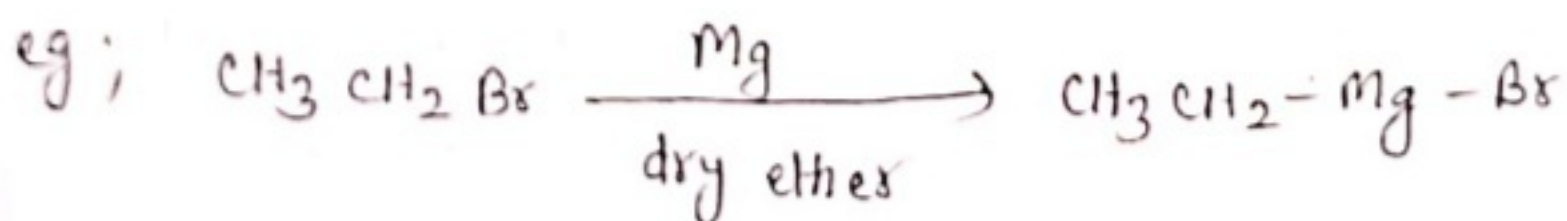
GRIGNARD REACTION

3.

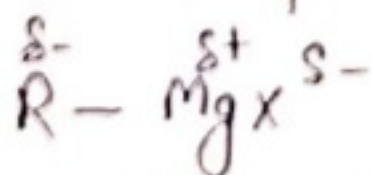
Reaction of Haloalkanes with magnesium metal in presence of dry ether to give alkyl magnesium halide. This reaction is known as Grignard reaction.



Alkyl magnesium halide is known as Grignard reagent.

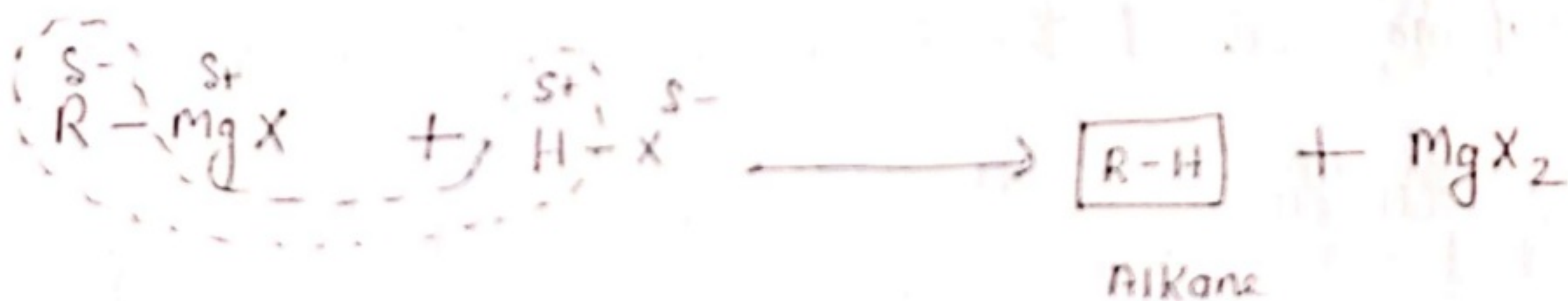
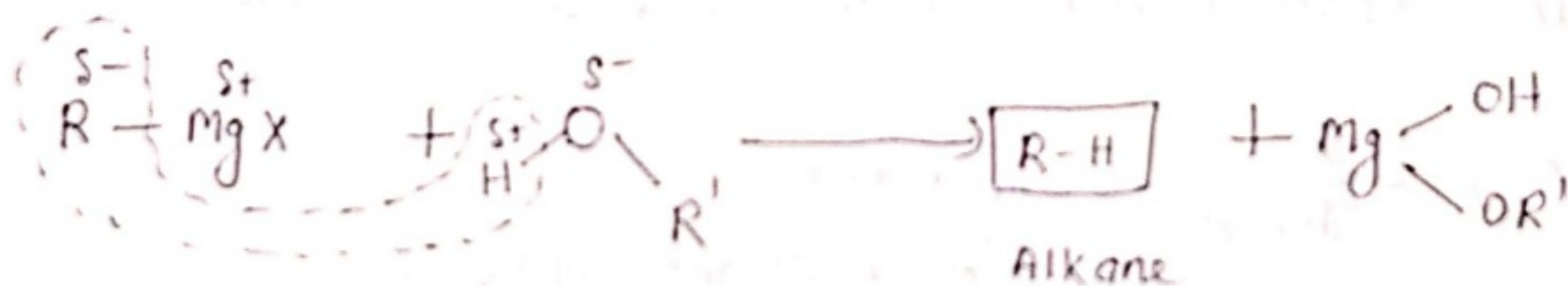
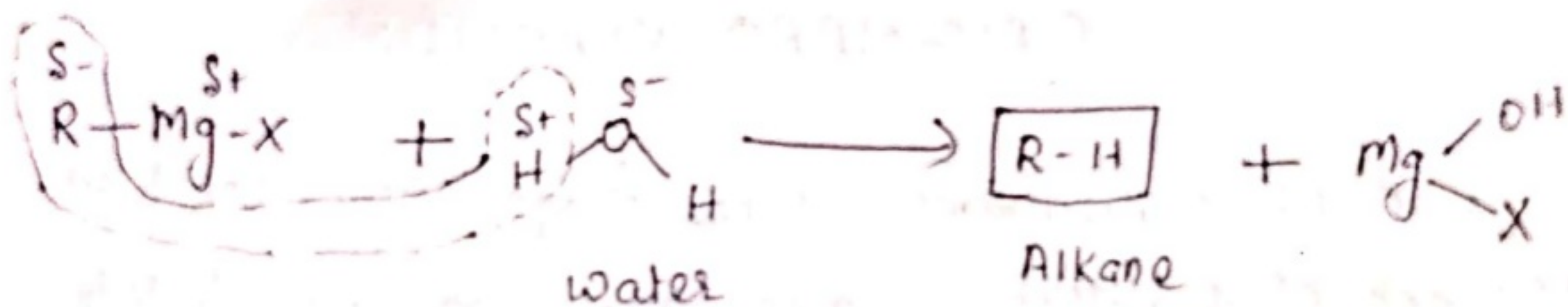


In Grignard reagent, the carbon-magnesium bond is covalent but highly polar, with carbon pulling electrons from electropositive magnesium. The magnesium-halogen bond is essentially ionic.



* The compounds containing carbon-metal bonds is known as organo-metallic compounds.

* Grignard reagent is highly reactive and react with any source of proton (H^+) to give corresponding alkane.

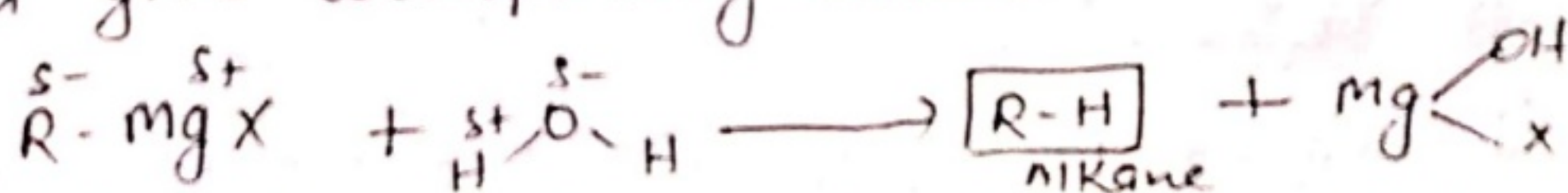


* It is therefore necessary to avoid even traces of moisture from a Grignard reagent.

NCERT Back question

10.12 (iii) Grignard reagent should be prepared under anhydrous conditions. Why?

Ans Grignard reagents are very reactive. They react with moisture present in the apparatus or the starting materials i.e; R-X, Mg and solvent (ether or THF), and give corresponding alkane.



Therefore, G.R must be prepared under anhydrous conditions.