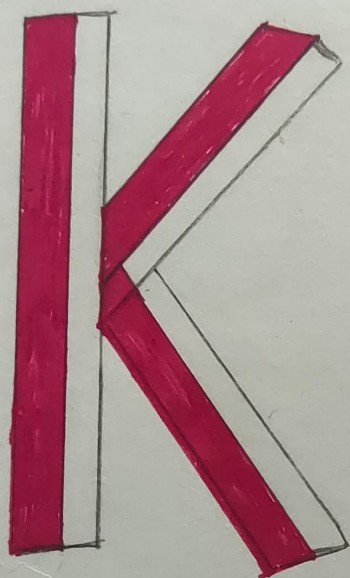


ORGANIC NAMED REACTIONS
STARTING WITH LETTER



K. MEGHANADH

II BSc [MPC]

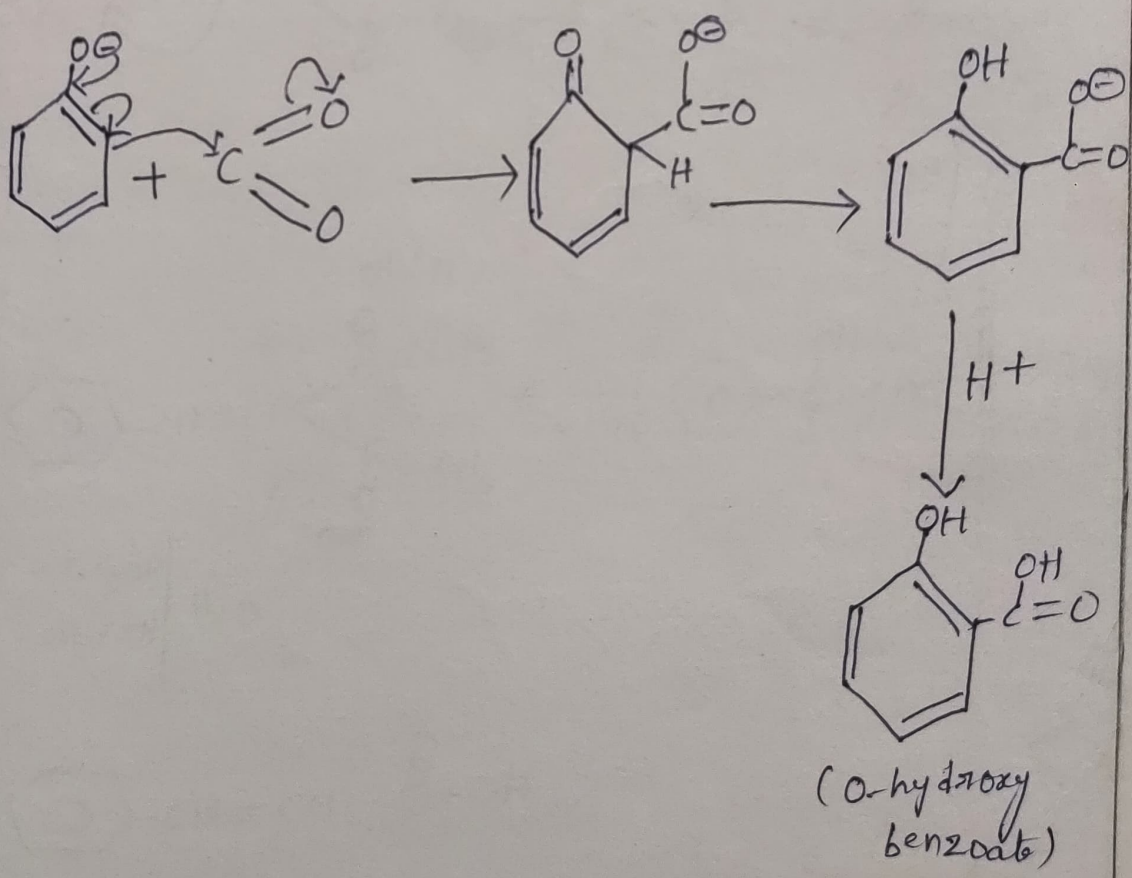
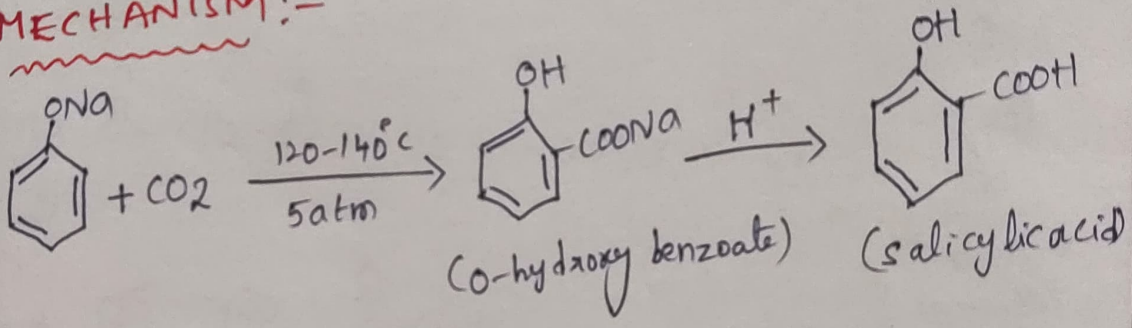
S.V.C.R Govt Degree college

- Palamaner

KOLBE SCHMIDT REACTION:-

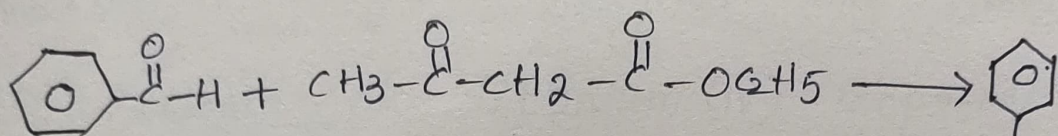
When sodium phenoxide is heated at $120-140^{\circ}\text{C}$ under pressure with a carboxyl group is introduced in the ortho position with respect to phenol to form o-hydroxy benzoates. This reaction is known as Kolbe-Schmidt reaction.

MECHANISM:-

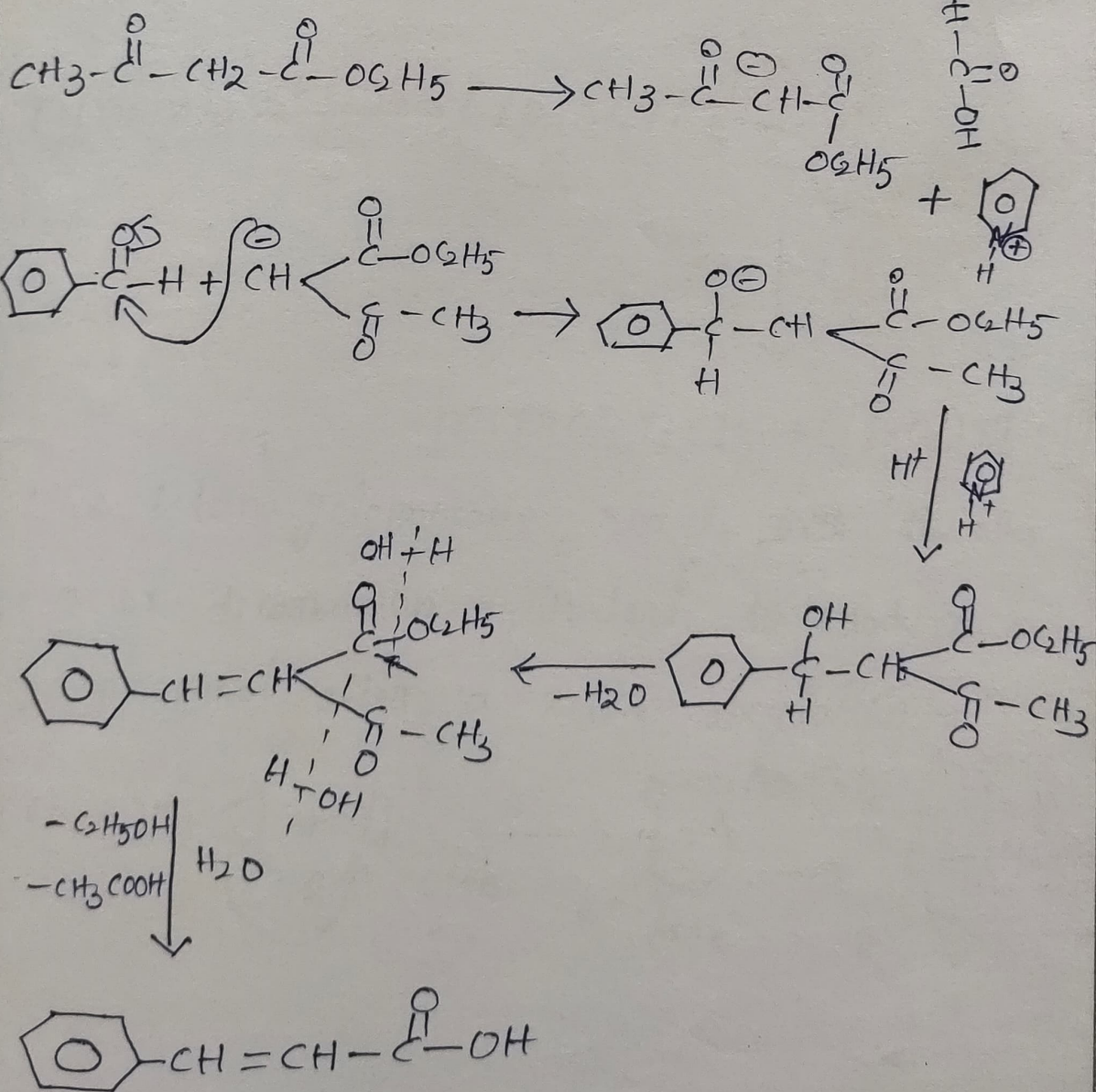


KNOEVENAGEL REACTION:-

The condensation between aldehyde or ketone and an active methylene compound in the presence of a base to form α, β -unsaturated acids is called Knoevenagel reaction.

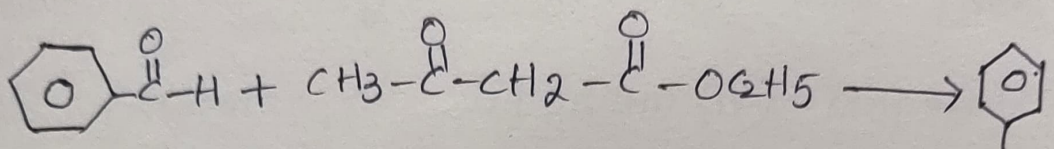


MECHANISM:-

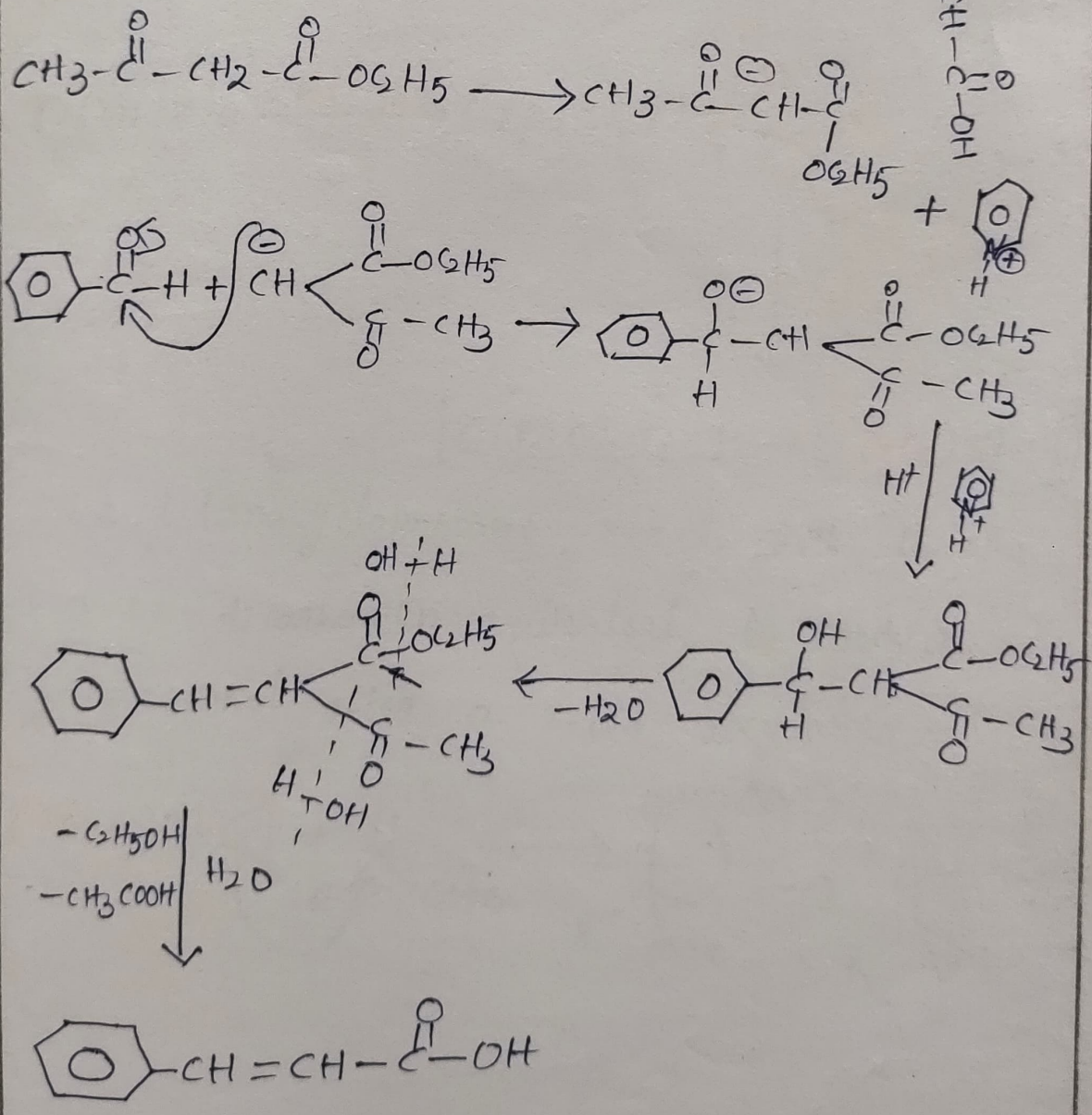


KNOEVENAGEL REACTION:-

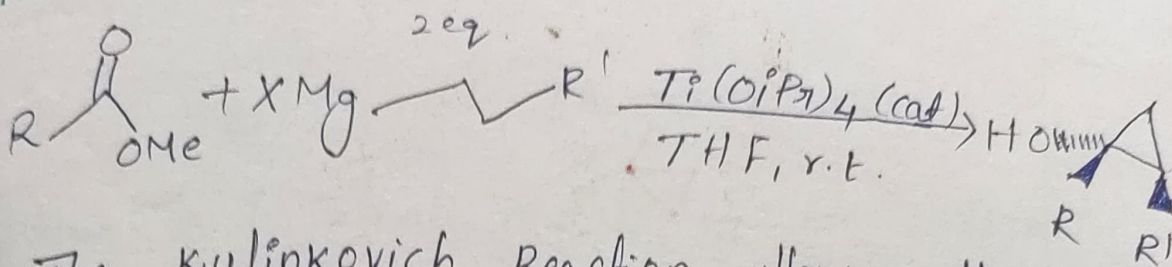
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MECHANISM:-

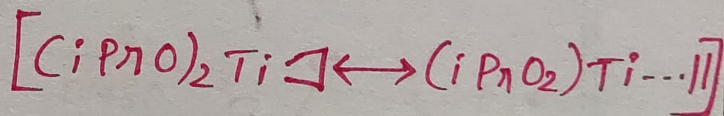
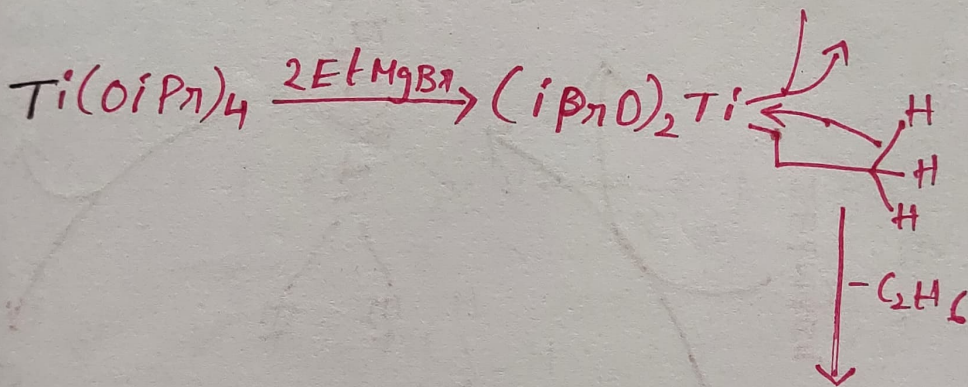


KULINKOVICH REACTION:-

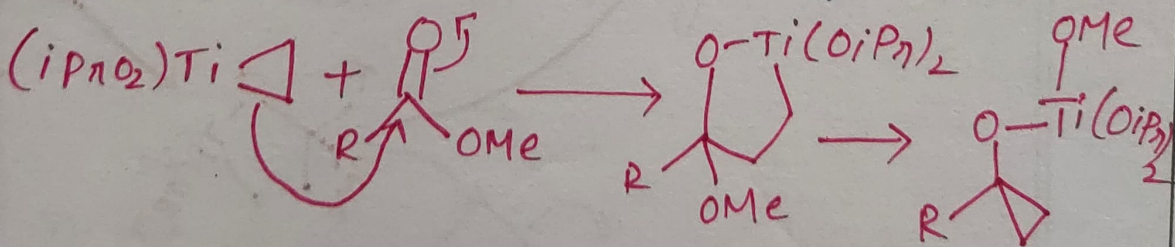


The Kulinkovich Reaction allows the preparation of cyclopropanol derivatives by the reaction of Grignard reagents with esters in the presence of titanium (iv) isopropoxide as catalyst.

MECHANISM :-

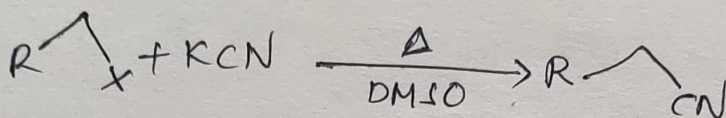


The titanacyclopropane reacts with the ester as a 1,2-dicarbocation equivalent to produce a cyclopropanol after a 2-fold alkylation.



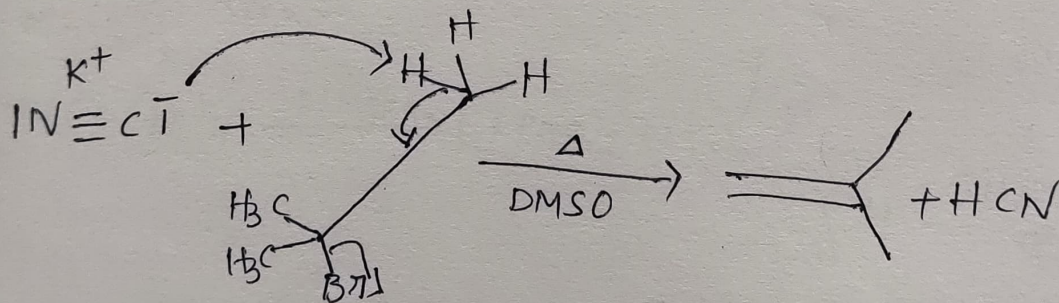
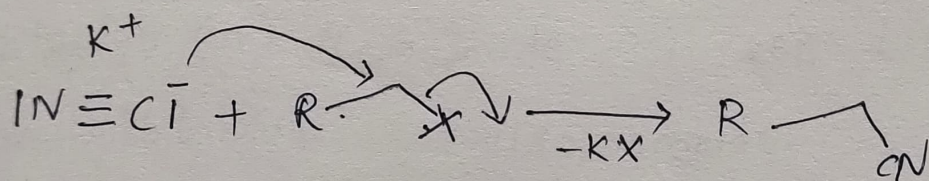
KOLBE NITRILE SYNTHESIS:-

The reaction of primary aliphatic halides and alkali metal cyanides - the Kolbe nitrile synthesis - gives nitriles in good yields.

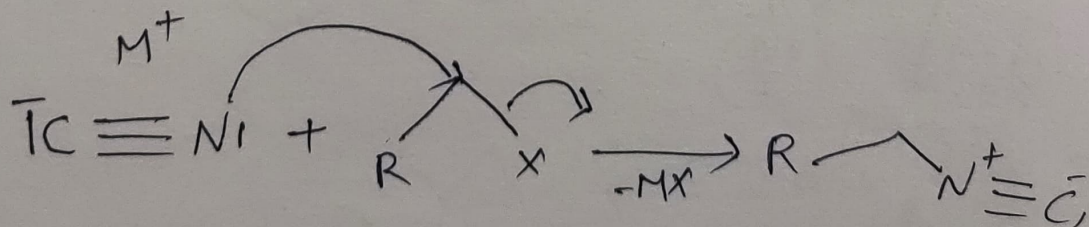


Mechanism:-

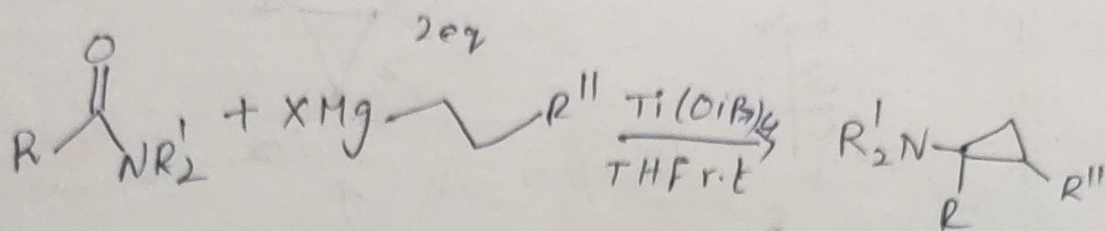
The Kolbe nitrile synthesis is a typical S_N2 reaction, which runs best in polar aprotic solvents.



Cyanide is an ambident nucleophile, and can also react on nitrogen to yield isonitriles.

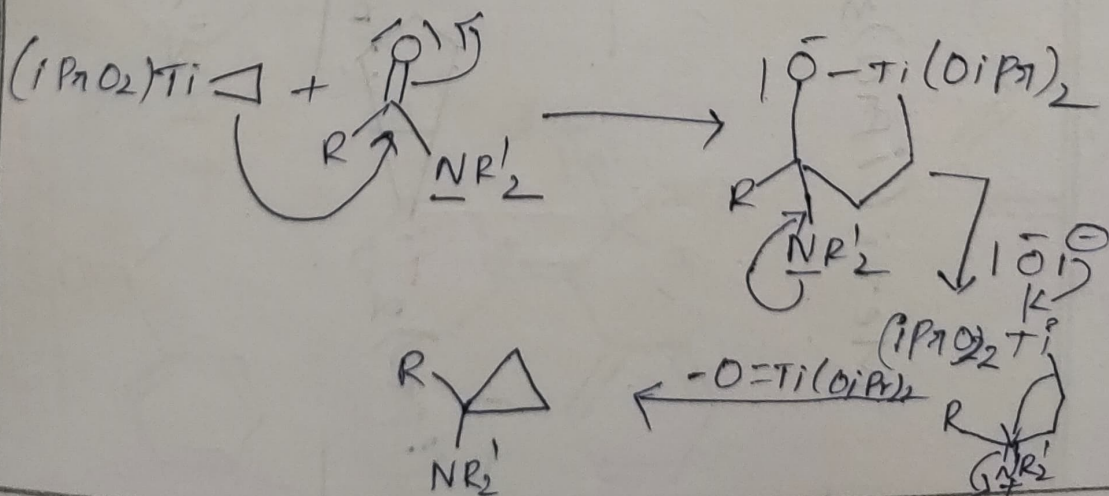
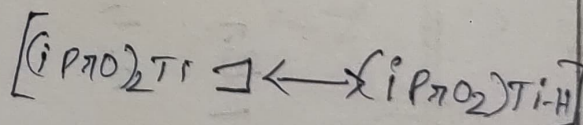
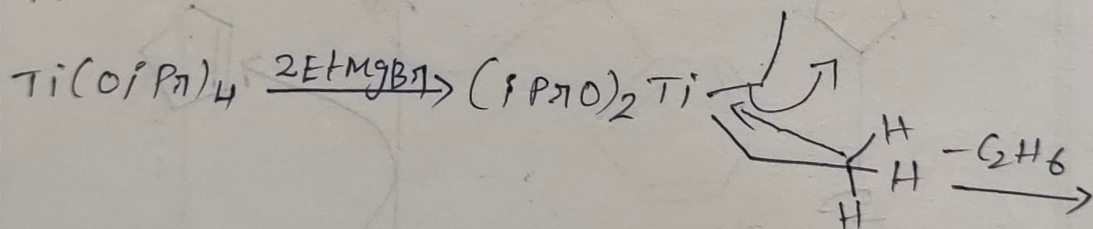


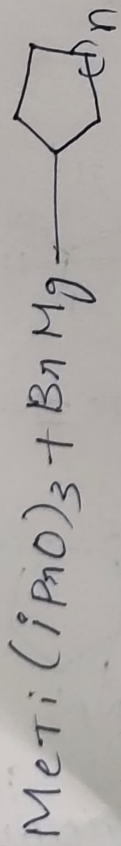
KULINKOVICH - DE - MEIJERE REACTION:-



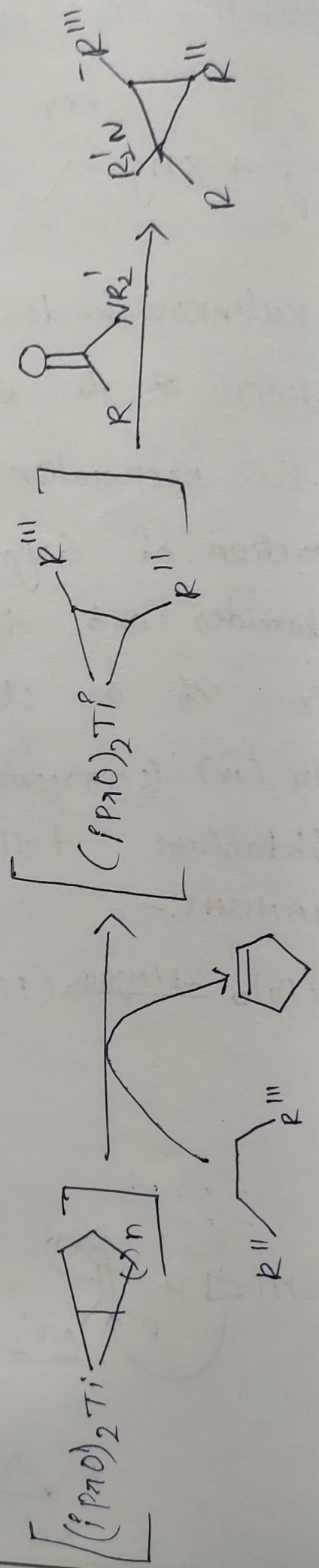
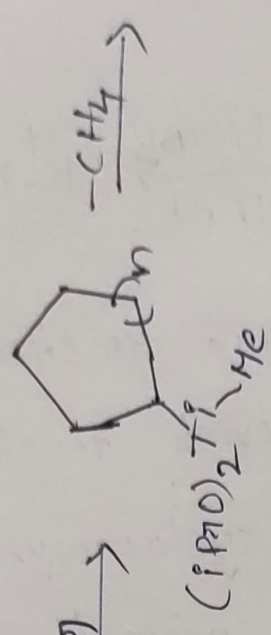
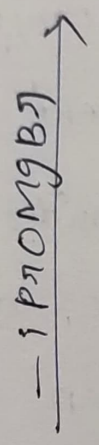
The Kulinkovich-de-Meijere Reaction is a modification of the Kulinkovich Reaction that allows the preparation of cyclopropylamines by the reaction of Grignard reagent with, *N,N*-dialkylamides and dialkylformamides. In the presence of a stoichiometric amount of titanium (iv) isopropoxide or, even better, methyltitanium triisopropoxide.

MECHANISM:-

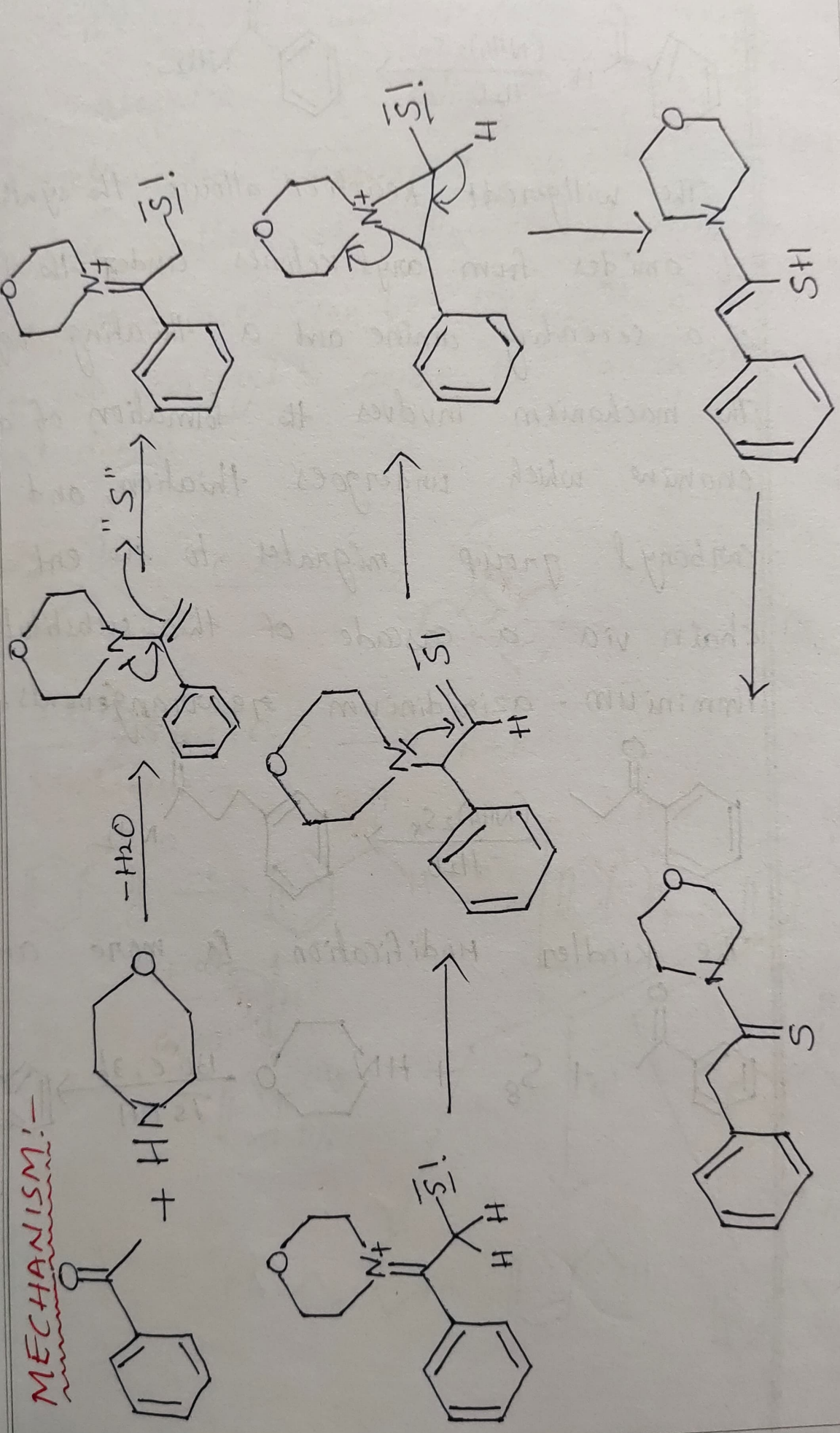




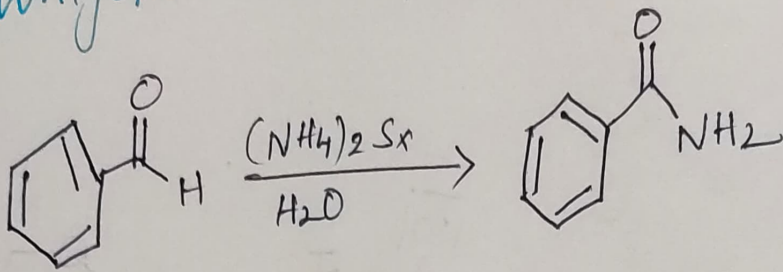
$n: 1, 2$



MECHANISM:-

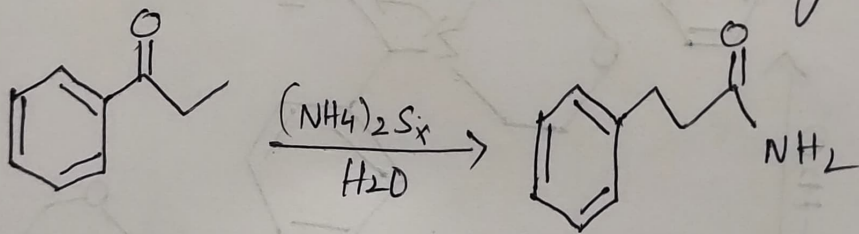


Willgerodt-Kindler Reaction:-

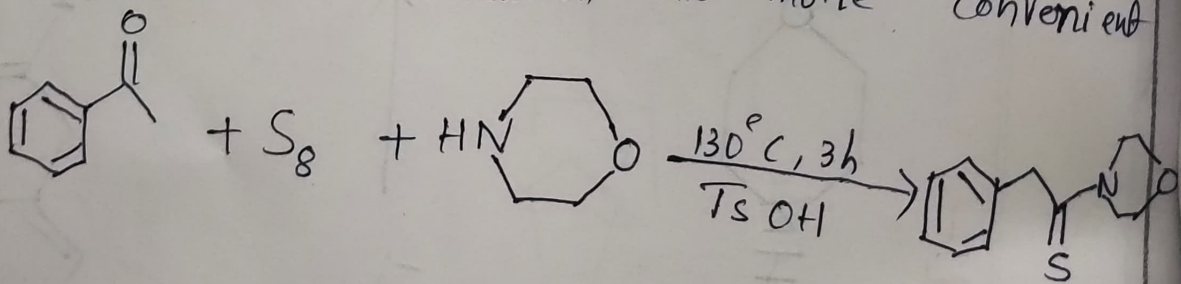


The Willgerodt reaction allows the synthesis of amides from aryl ketones under the influence of a secondary amine and a thiating agent.

The mechanism involves the formation of an enamine which undergoes thiation, and the carbonyl group migrates to the end of the chain via a cascade of thio-substituted imminium-aziridinium rearrangements.

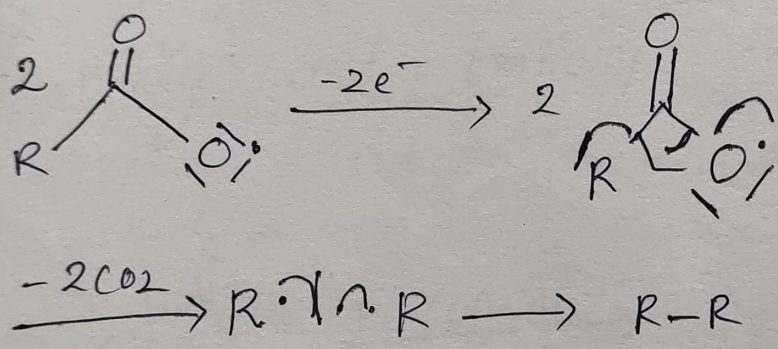


The Kindler modification is more convenient

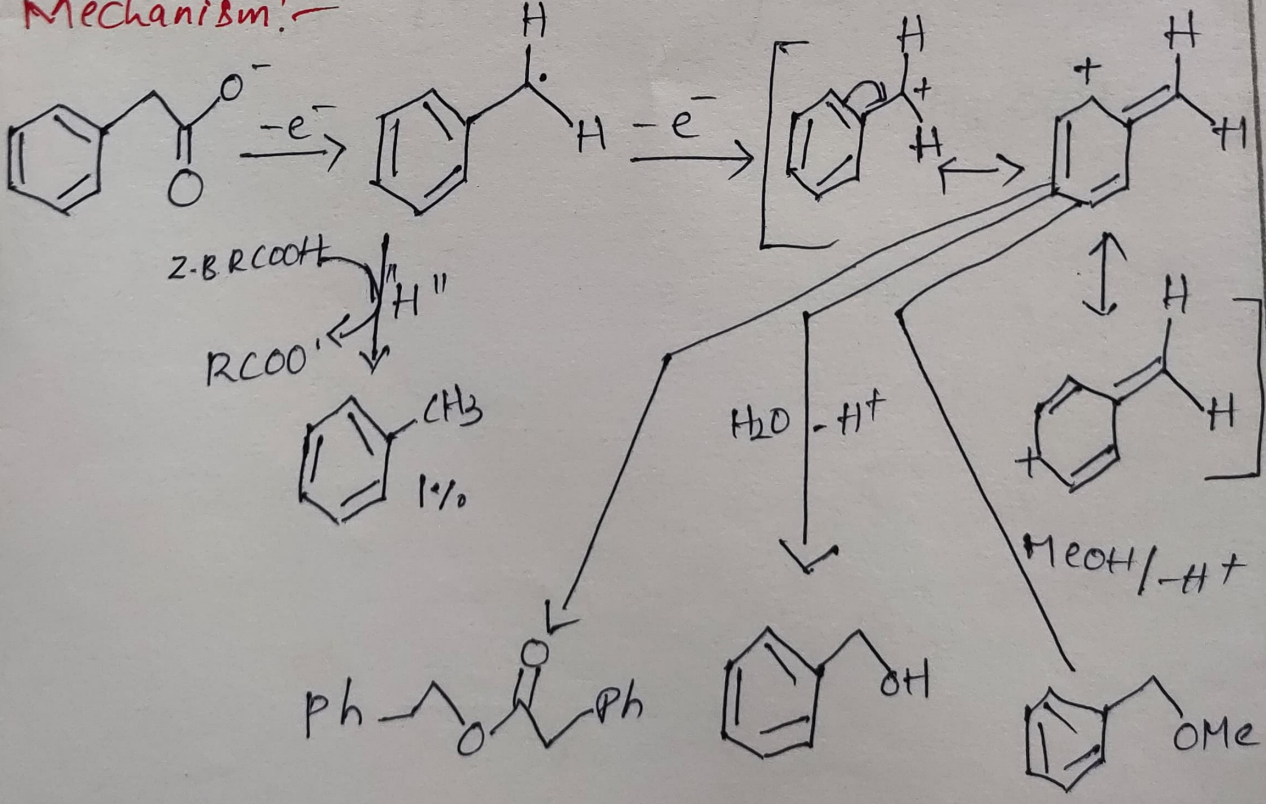


KOLBE ELECTROLYSIS:-

The electrochemical oxidative decarboxylation of carboxylic acid salts that leads to radicals, which dimerize. It is best applied to the synthesis of symmetrical dimers, but in some cases can be used with a mixture of two carboxylic acids to furnish unsymmetrical dimers.

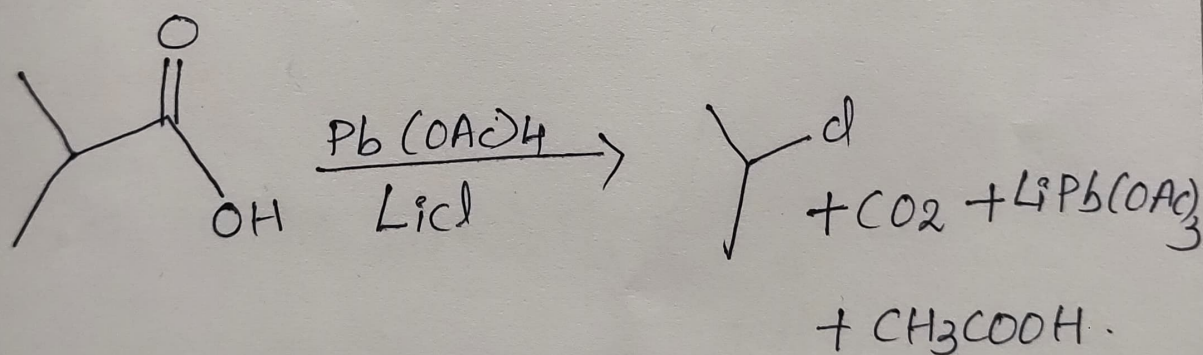


Mechanism:-



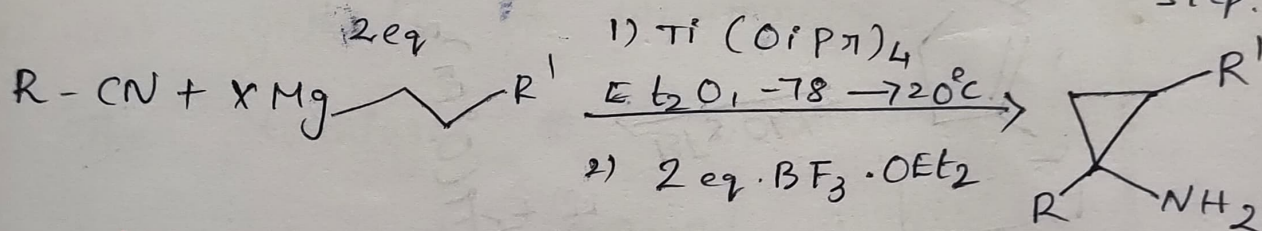
KOCHI REACTION:-

The Kochi Reaction is a one-carbon is a one-carbon oxidative degradation of carboxylic acids, and is a valuable alternative to the Hunsdiecker Reaction. A Pb(IV) reagent is the oxidant, and this reaction is suitable for synthesis of secondary and tertiary chlorides.

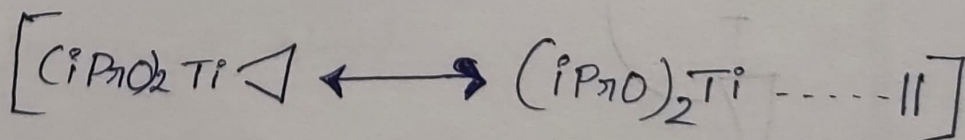
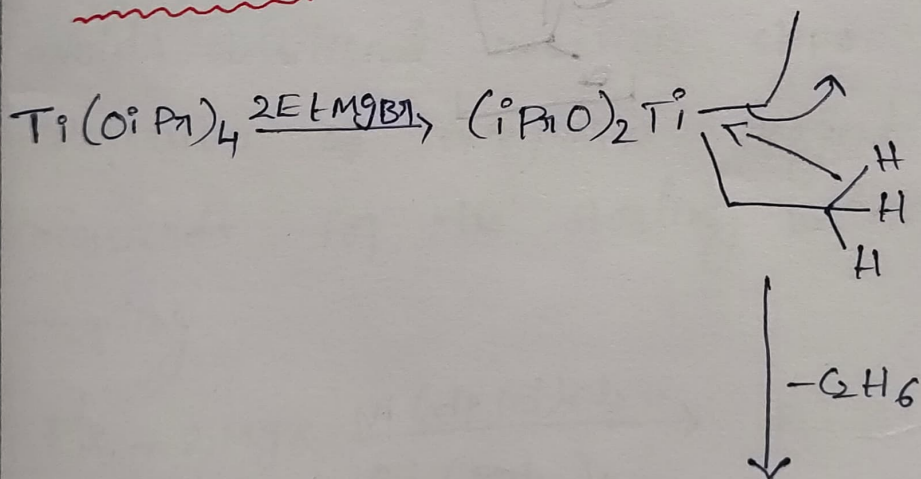


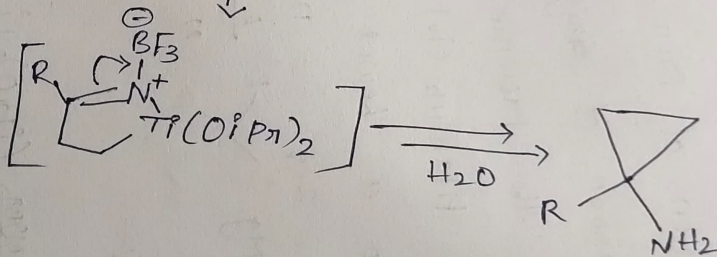
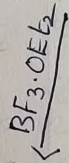
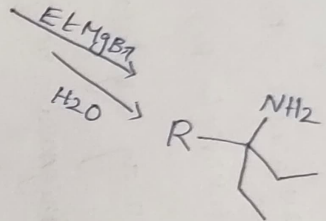
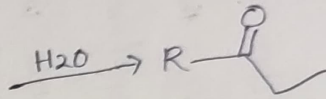
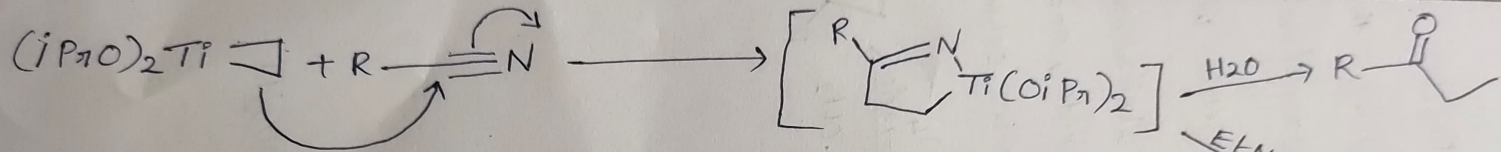
Kulinkovich - Szymoniak Reaction:-

The Kulinkovich - Szymoniak Reaction is a modification of the Kulinkovich Reaction that allows the preparation of primary cyclopropylamines by the reaction of Grignard reagents with nitriles in the presence of a stoichiometric amount of titanium (iv) isopropoxide, and exposure to a Lewis acid in a subsequent step.



Mechanism:-

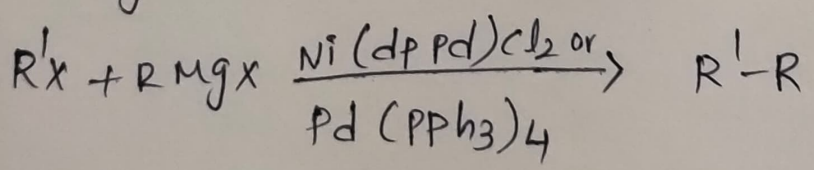




KUMADA COUPLING :-

The coupling of Grignard reagents with alkyl, vinyl or aryl halides under Ni-catalysis provides an economic transformation, but the reaction is limited to halide partners that do not react with organomagnesium compounds. One example is in the industrial-scale production of styrene derivatives, and the Kumada coupling is the method of choice for the low-cost synthesis of unsymmetrical biaryls.

The advantage of this reaction is the direct coupling of Grignard reagents, which avoids additional reaction steps such as the conversion of Grignard reagents to zinc compounds for the starting materials in the Negishi coupling.



R = Aryl, vinyl, Alkyl

R' = Aryl, vinyl

X = Cl > Br > I

Mechanism of the Kumada coupling! —

