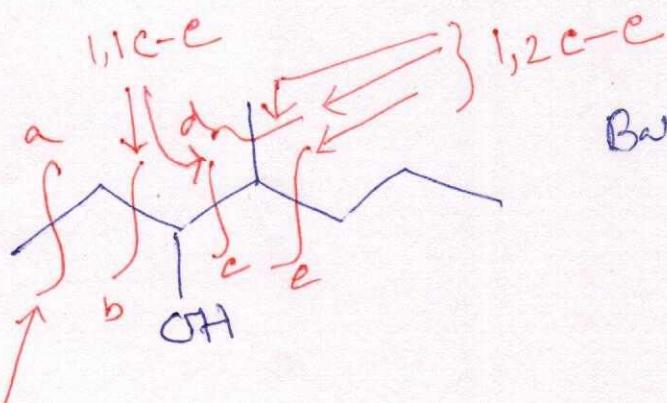


Some General Guidelines:

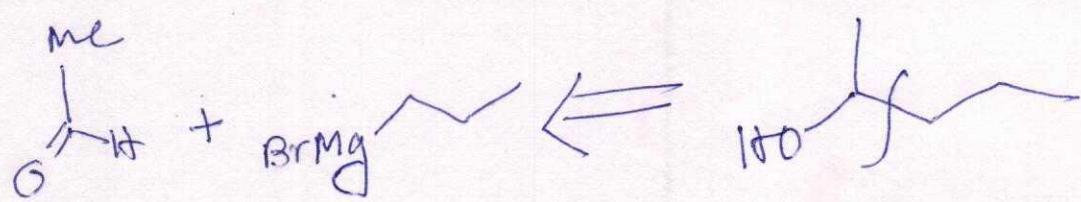
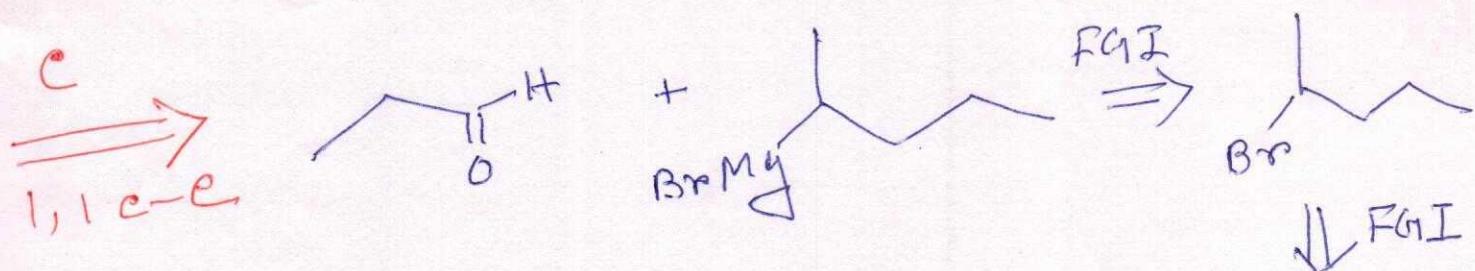


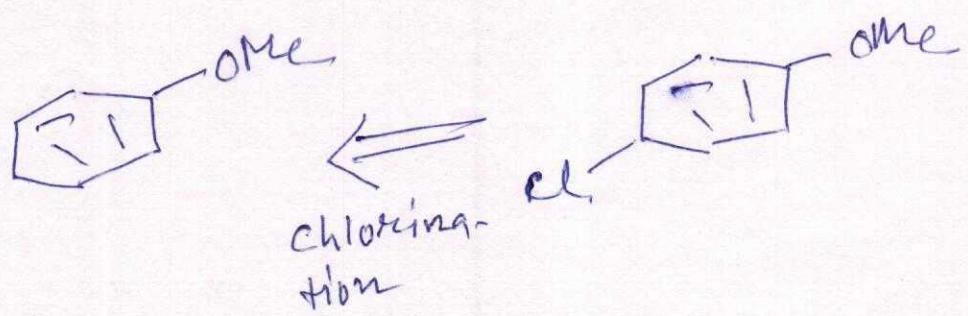
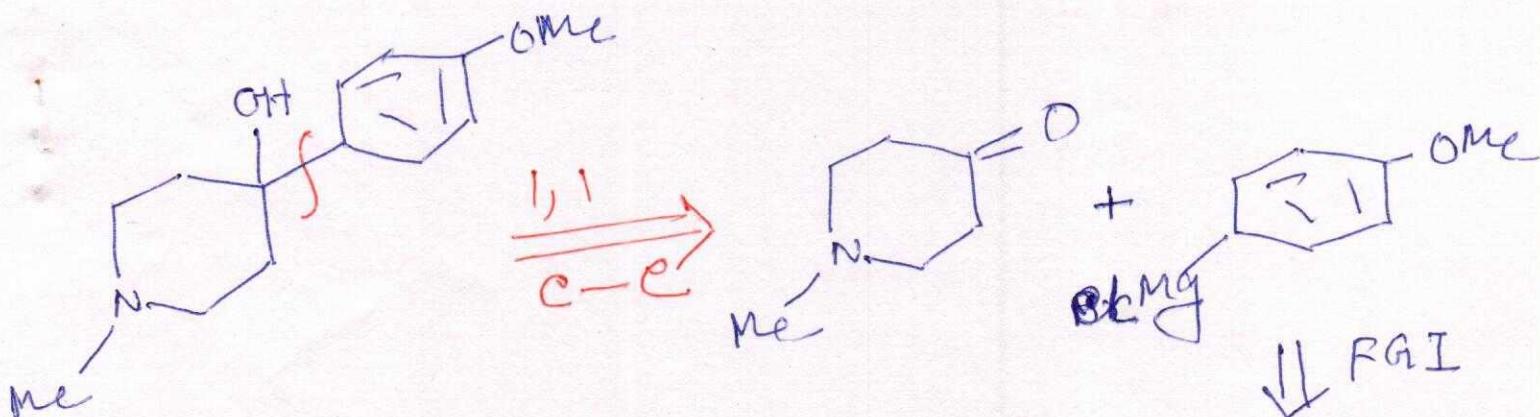
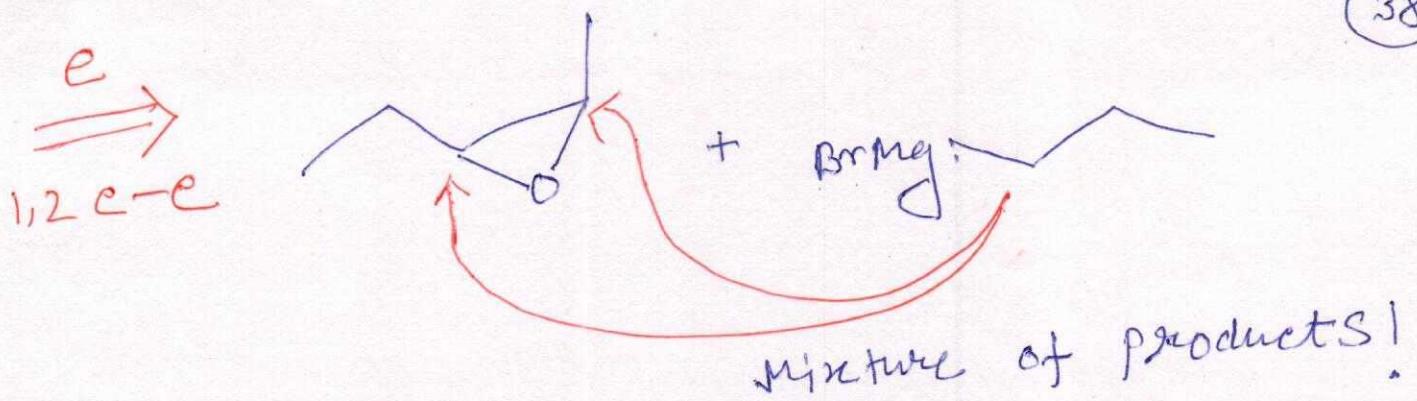
Bark beetle pheromone

Guideline:

⇒ Disconnect toward the middle of the molecule. This breaks the molecule into two reasonably equal parts.

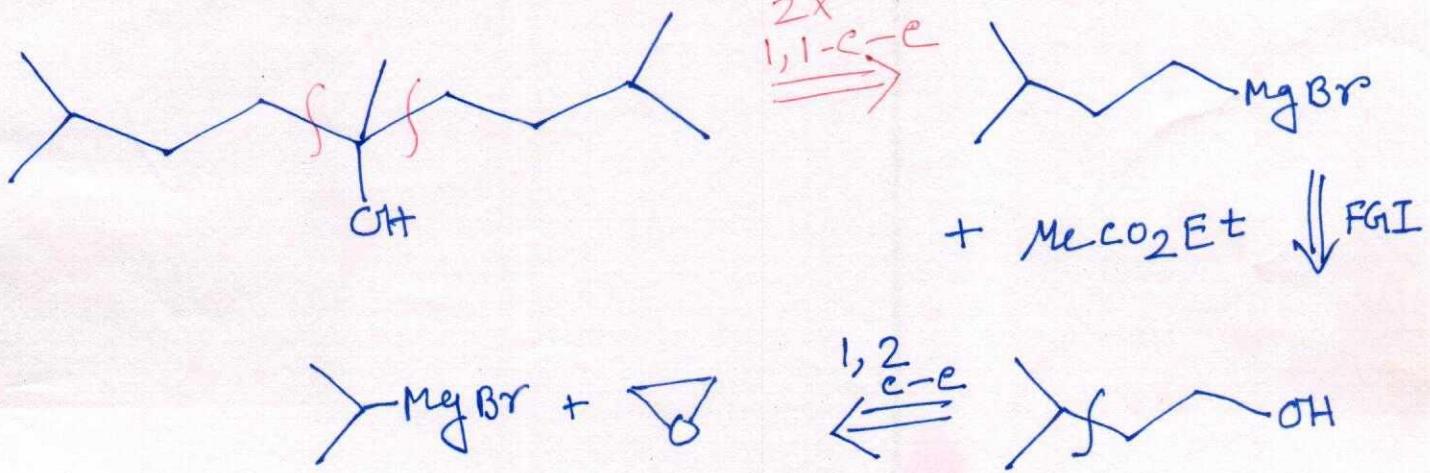
⇒ Disconnect at a branch point in the molecule. This is more likely to give simple straight chain SM.





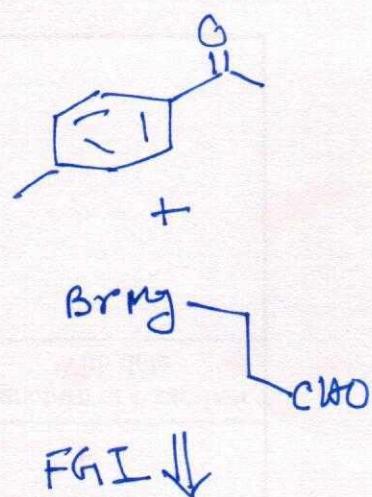
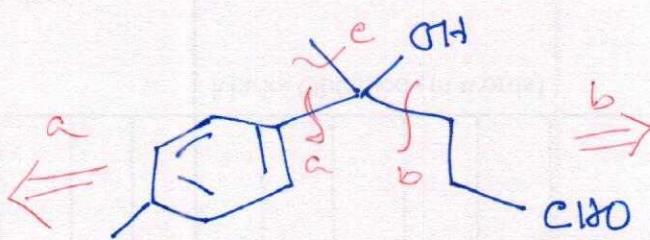
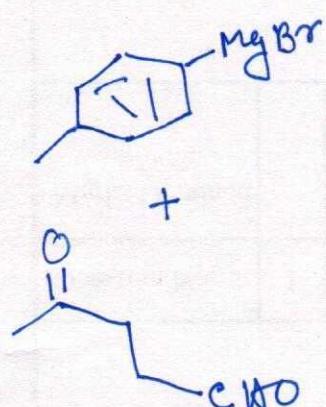
Symmetry:

\Rightarrow Use symmetry (if any) to perform two identical disconnections at once.

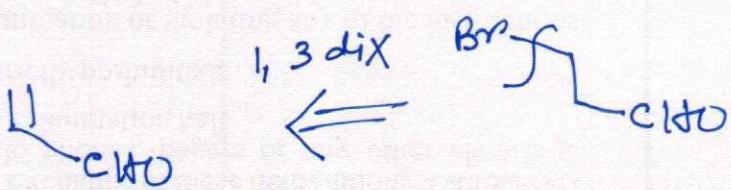


(39)

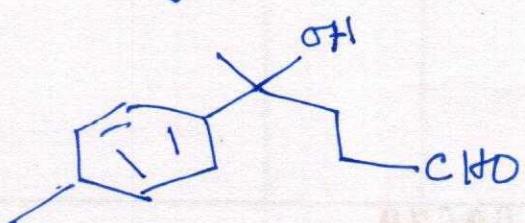
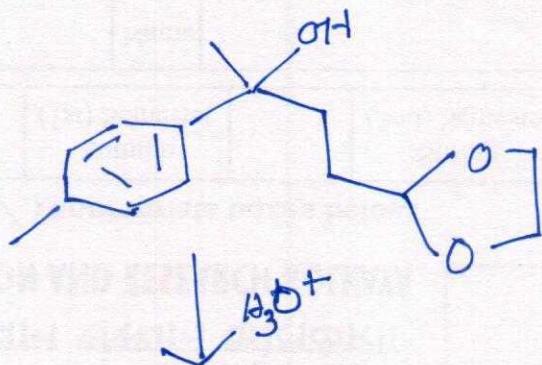
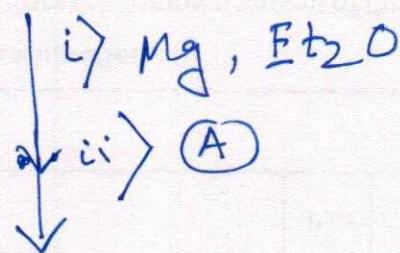
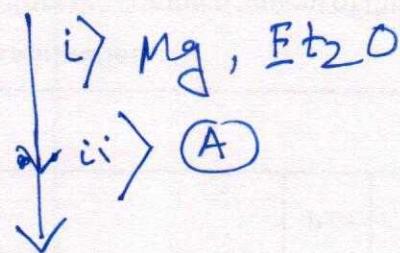
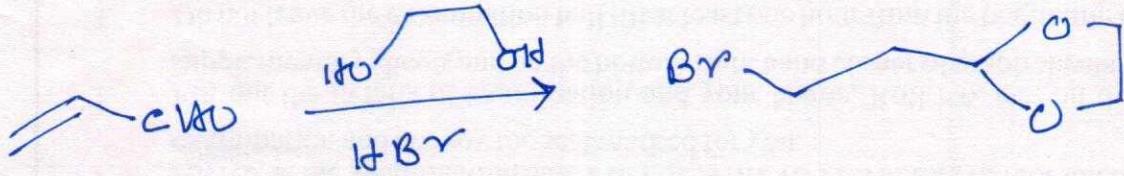
Recognisable Starting Material :



Comparatively difficult to synthesize

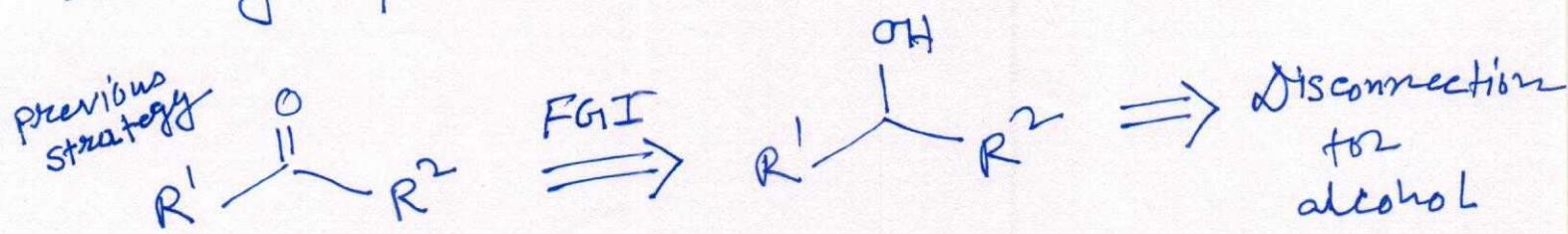


Forward Synthesis :

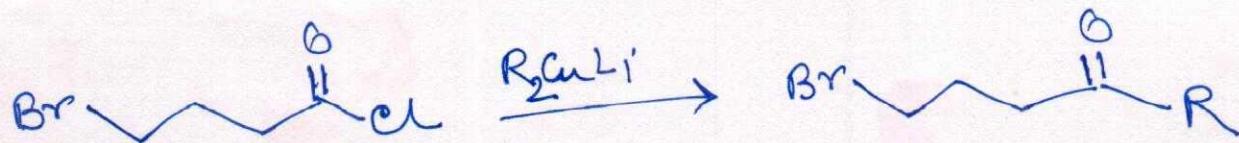
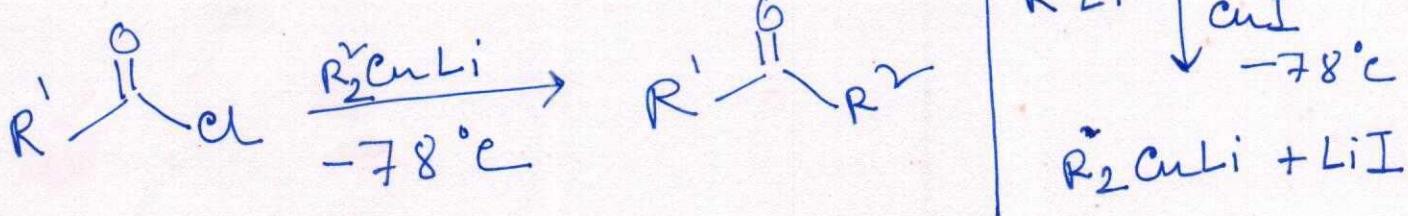
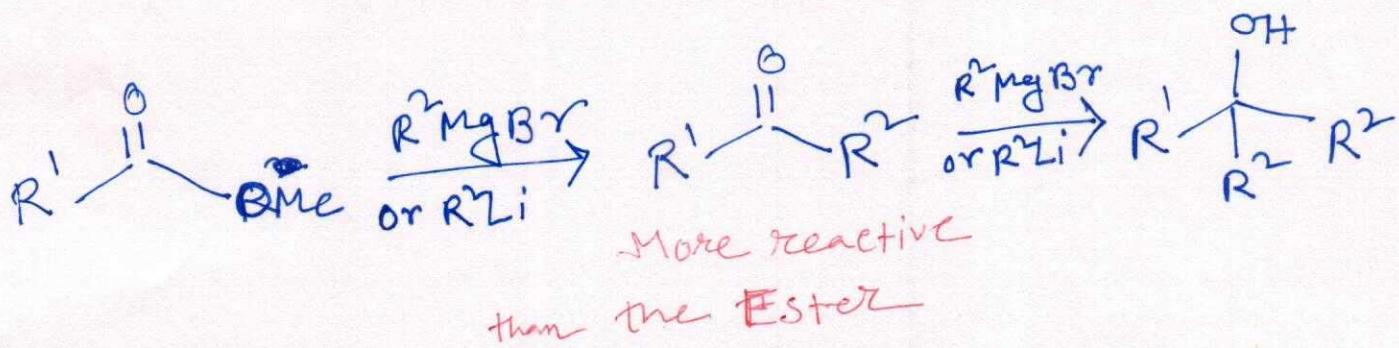
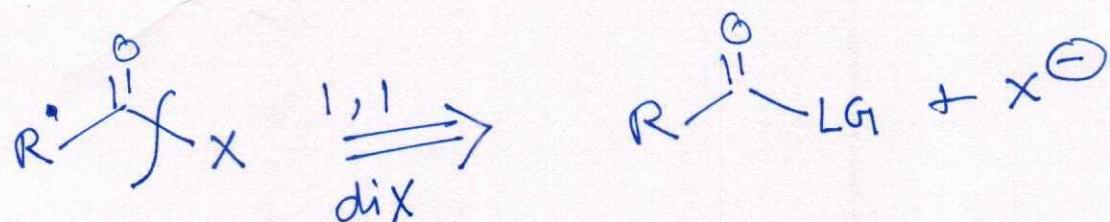
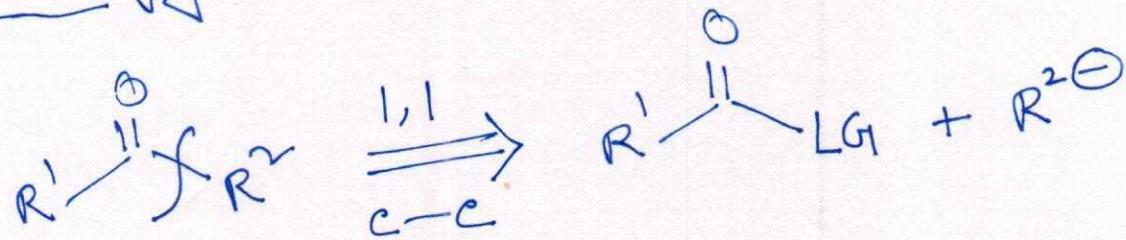


Synthesis of Carbonyl Compounds through ⁴⁰

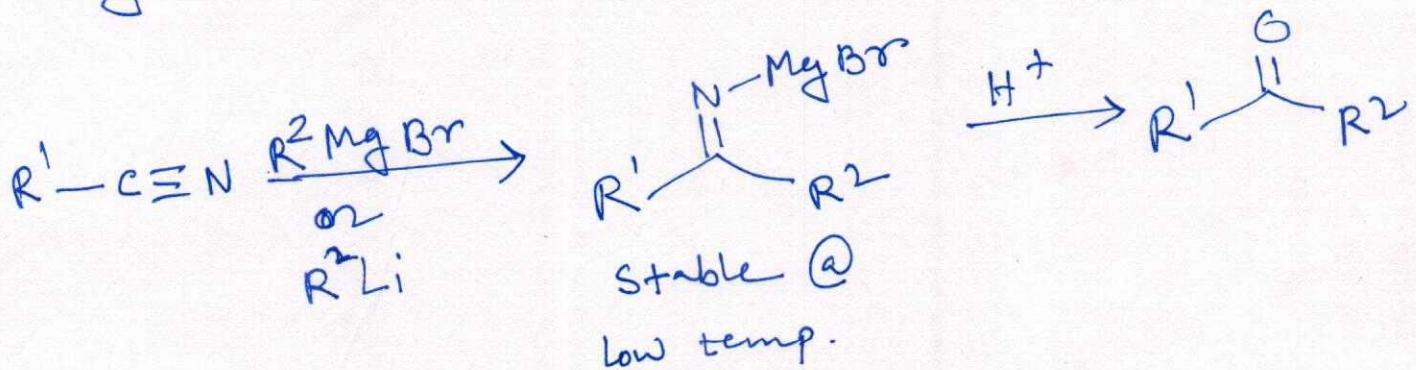
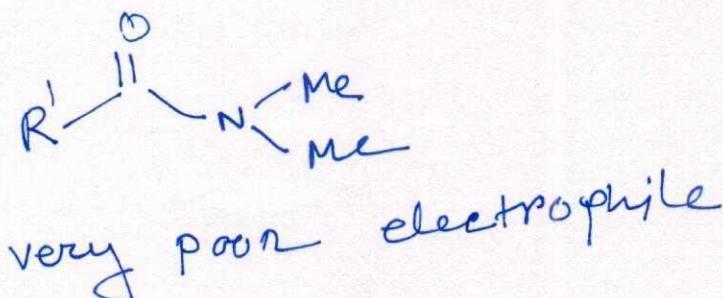
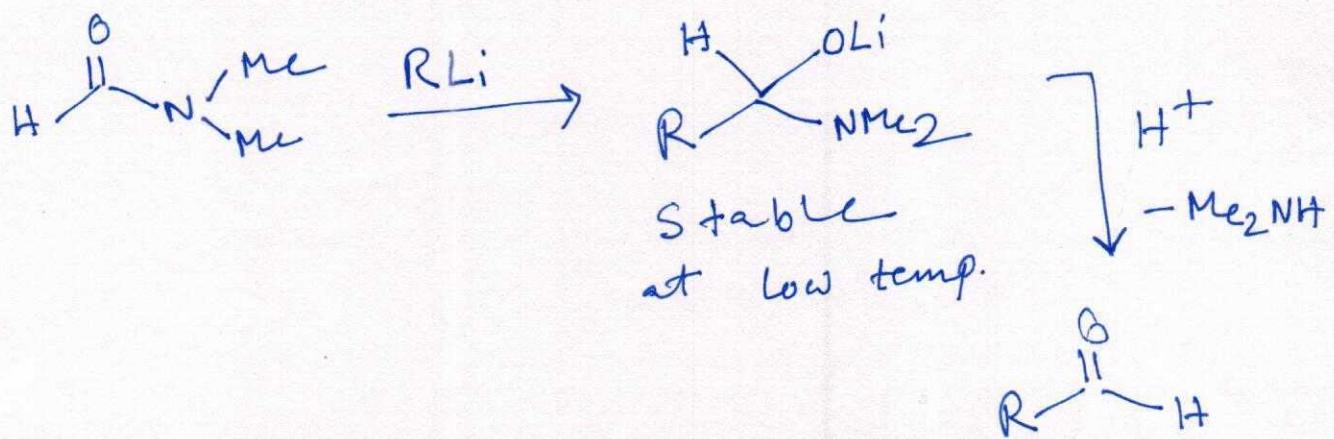
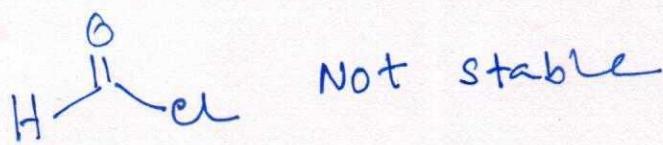
One group C-C disconnections:



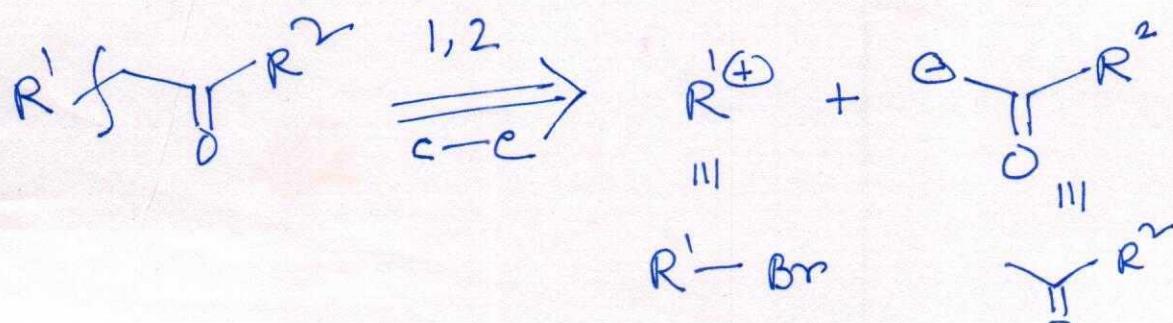
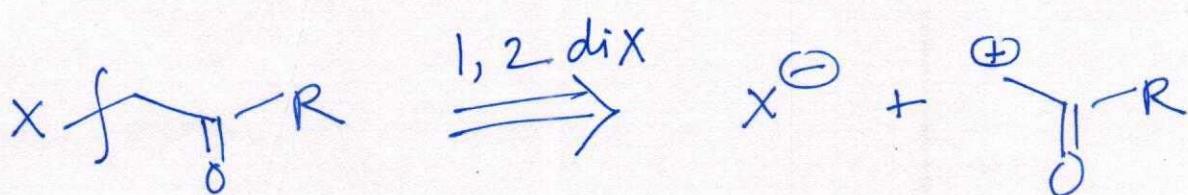
New strategy:

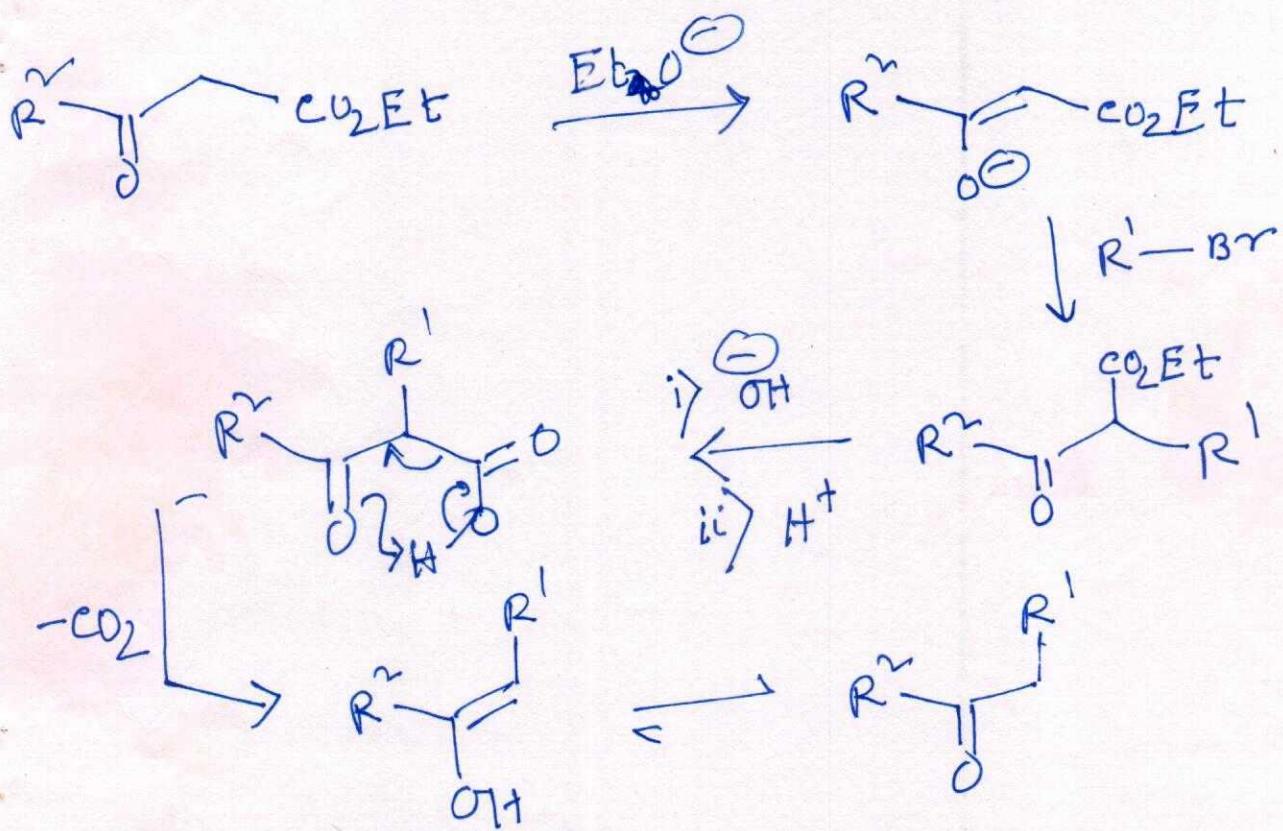
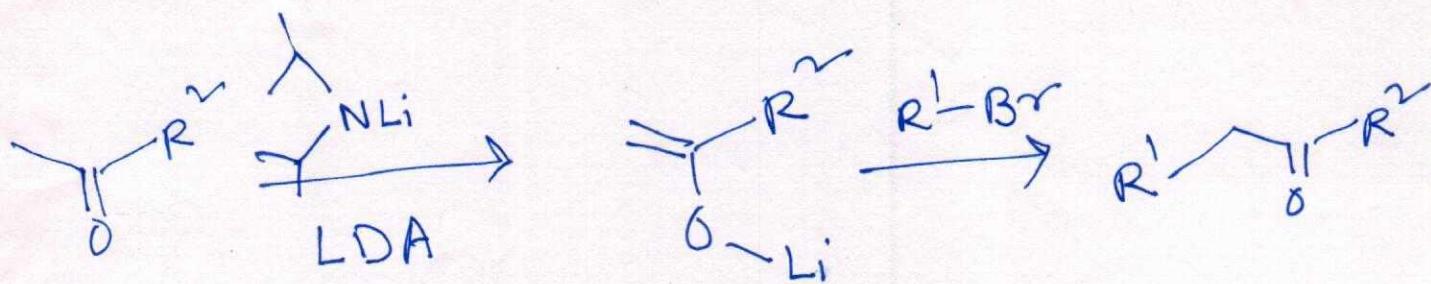
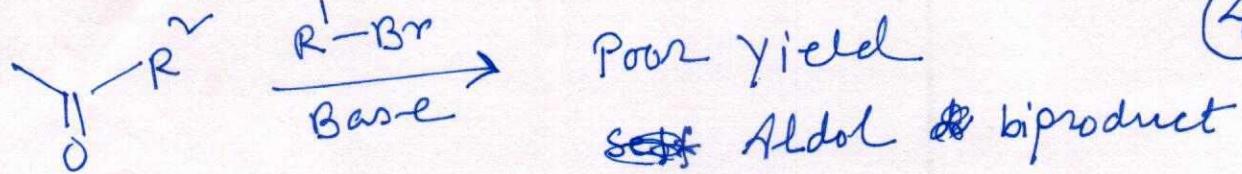


Aldehyde Synthesis:

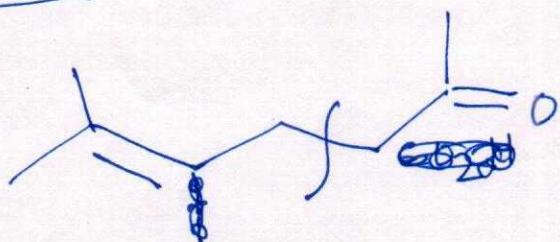


Carbonyl Synthesis by Alkylation of Enols:

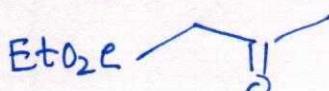
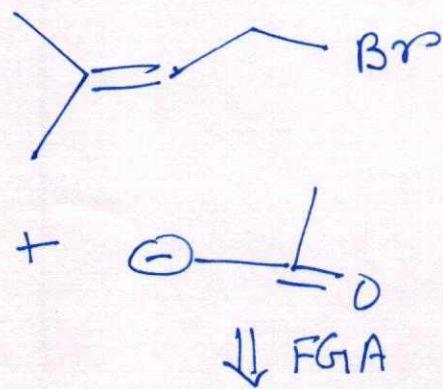


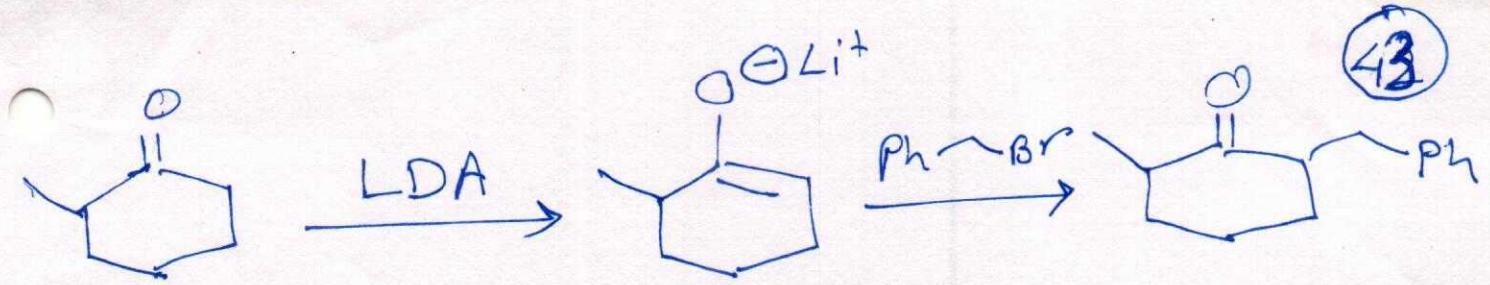


Few examples :

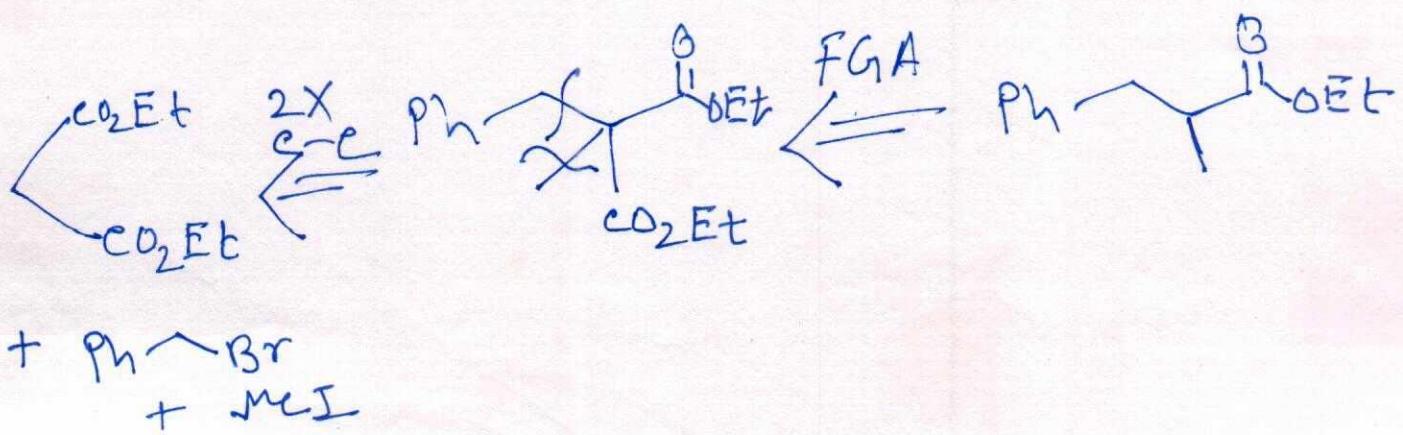
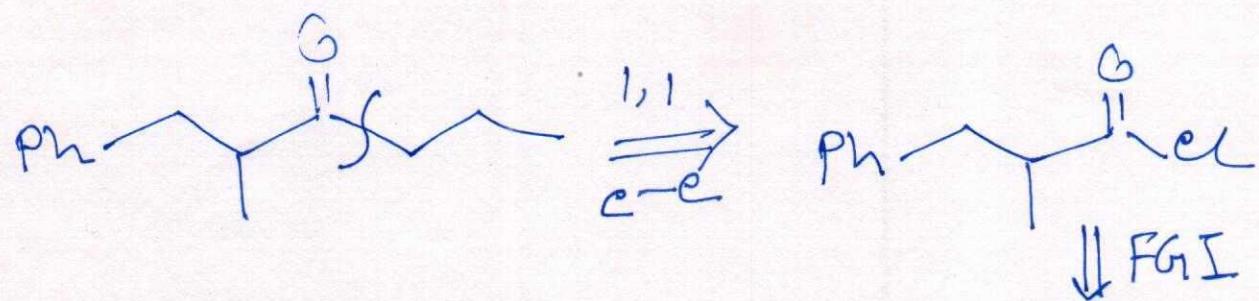
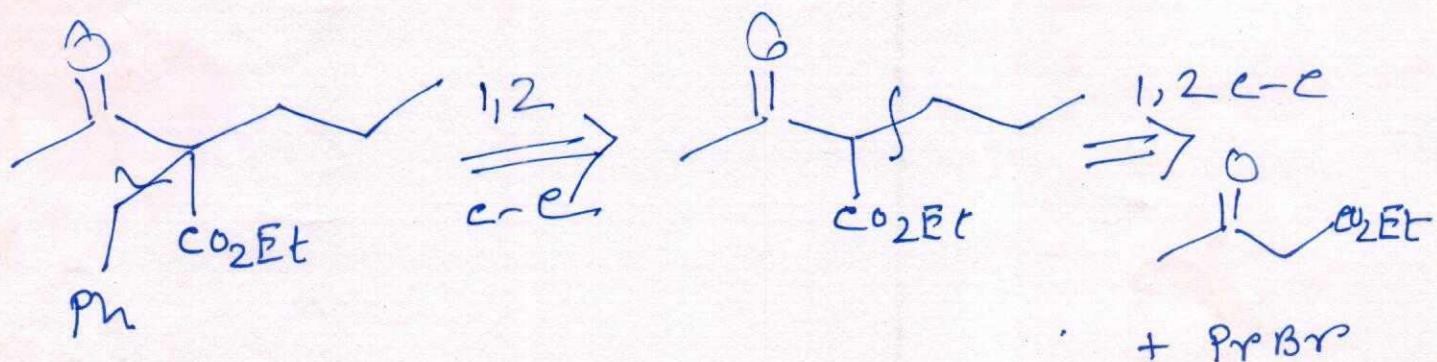
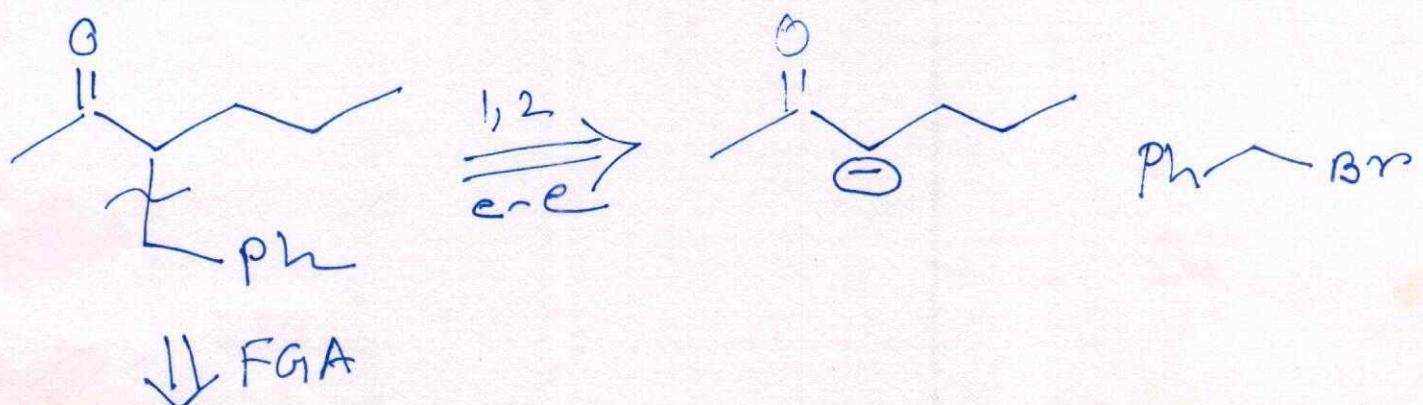


1,2
C-C



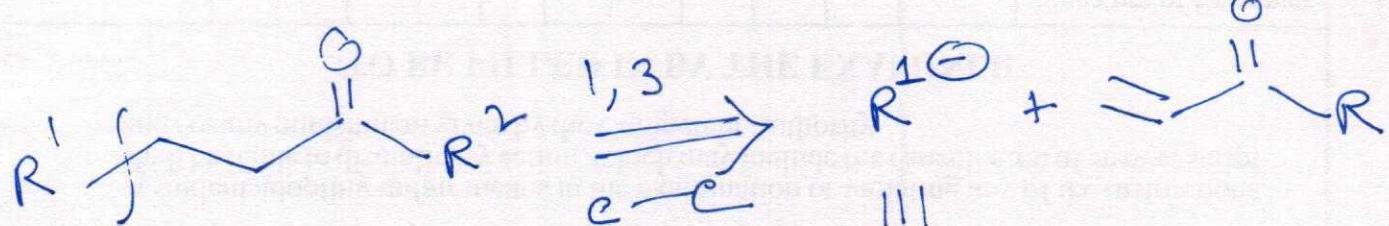
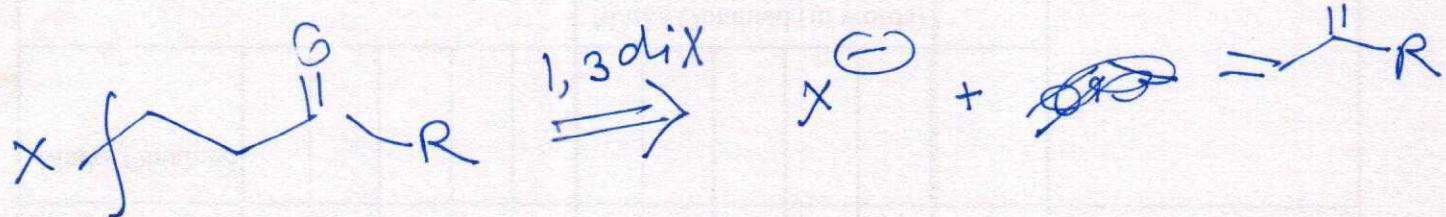


Deprotonation
from less substituted
position



Carbonyl synthesis by conjugate addⁿ

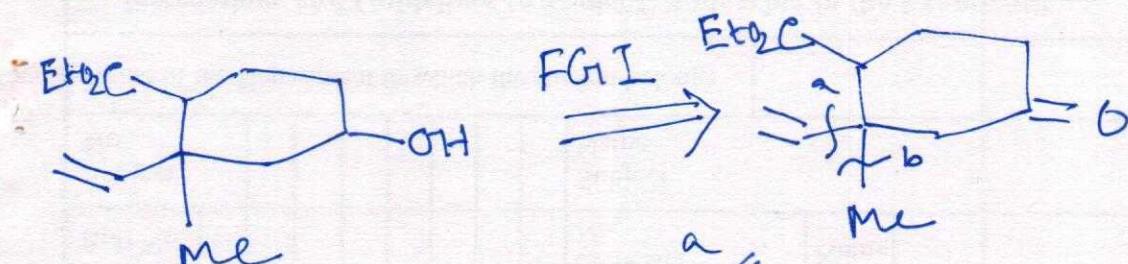
(44)



$\text{R}'\text{MgBr} + \text{Cu(I)cat.}$

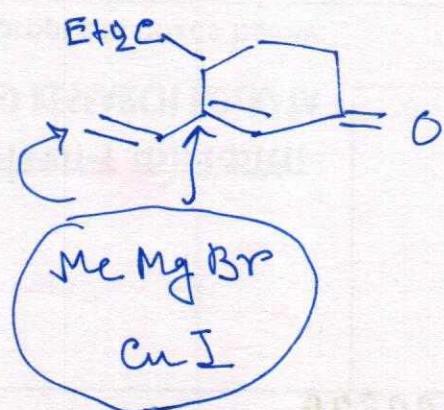
~~Mild~~ soft
nucleophile
or
for 1,4 addⁿ $\text{R}'\text{CuLi}$

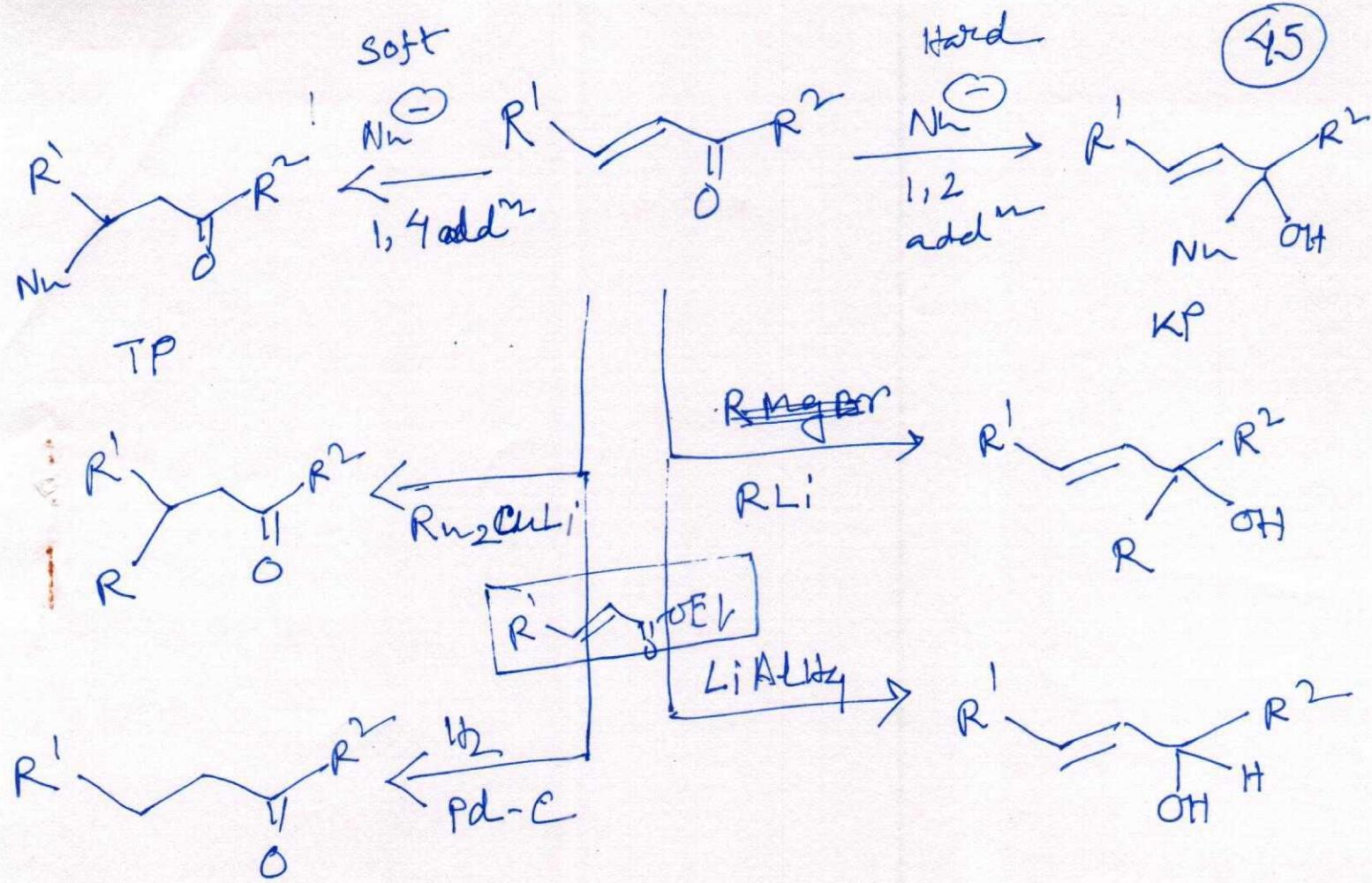
Synthesis:



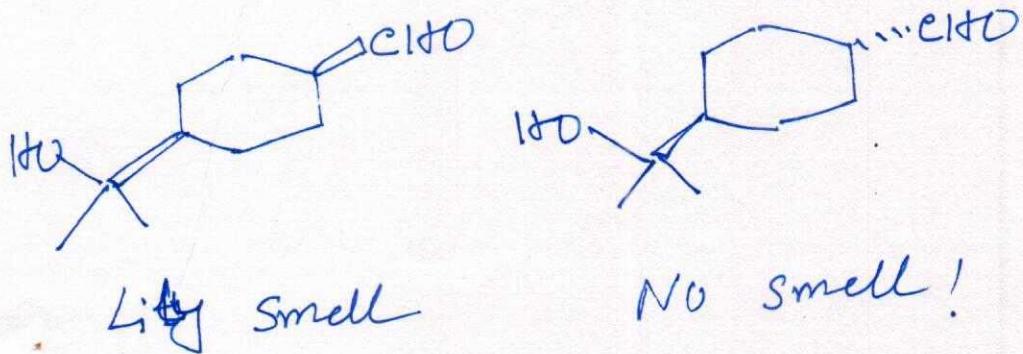
$+\text{MgBr}$
~~Cu(I)cat.~~
 CuI

Better option



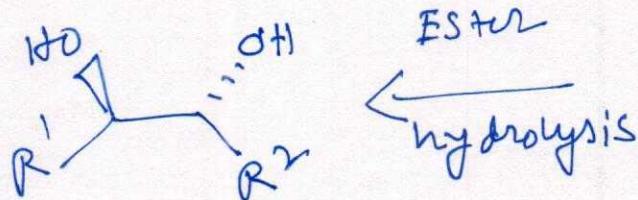
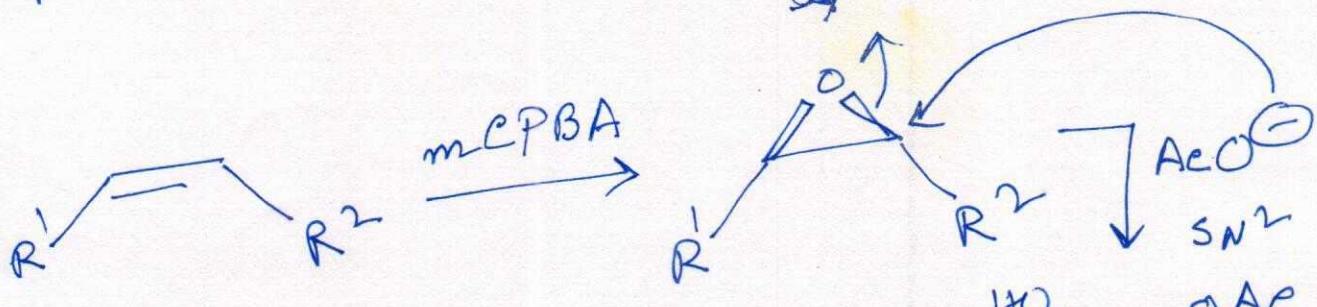
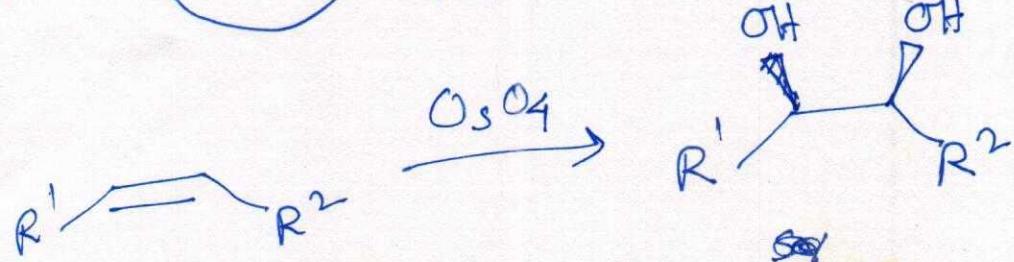
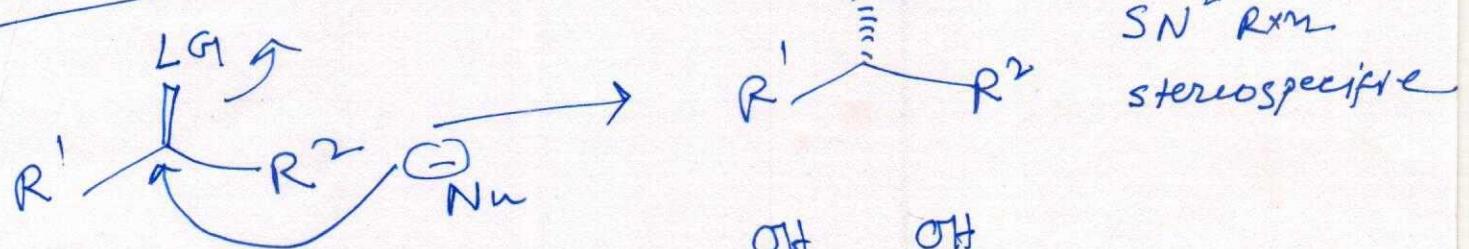


Stereochemistry:



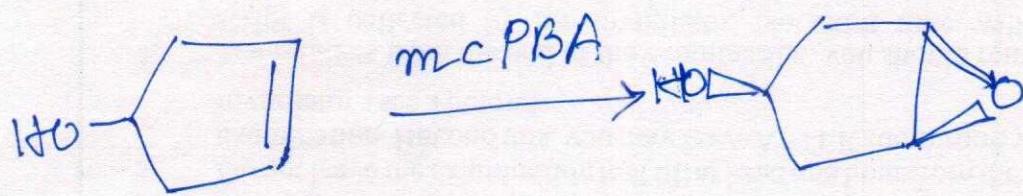
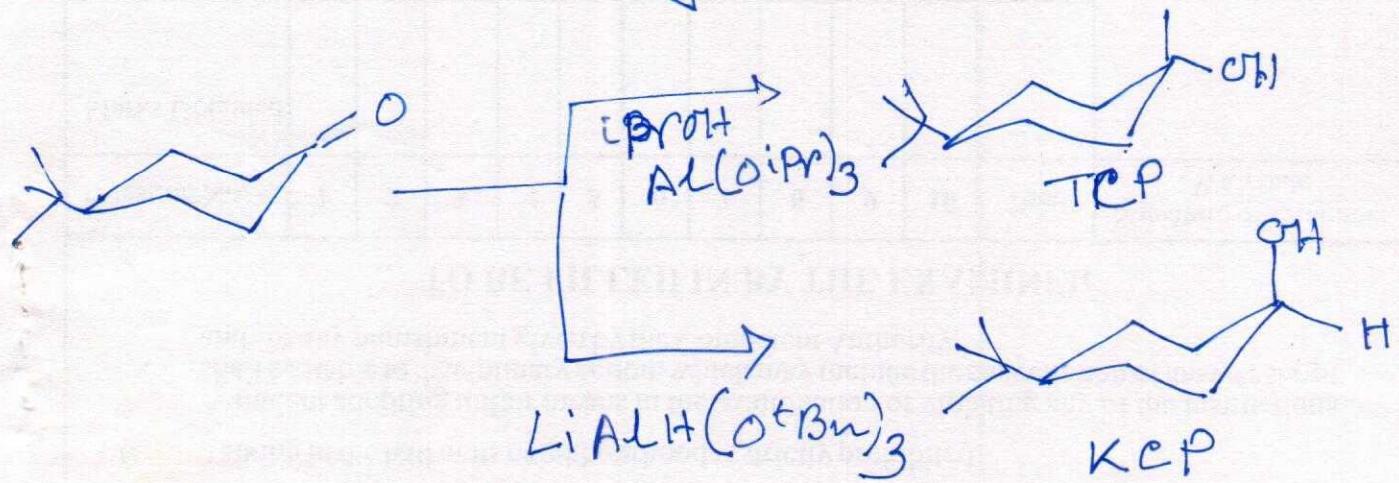
chiral building blocks: Natural amino acids
carbohydrates etc.

Stereospecific & stereoselective Reacⁿ:

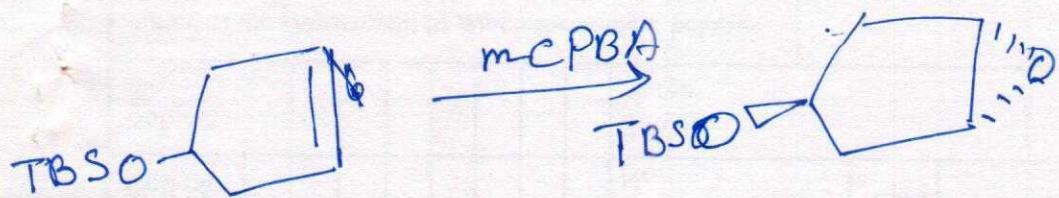


(47a)

Stereoselective Rxn: Mechanistically acceptable
but stereochemically different pathways.



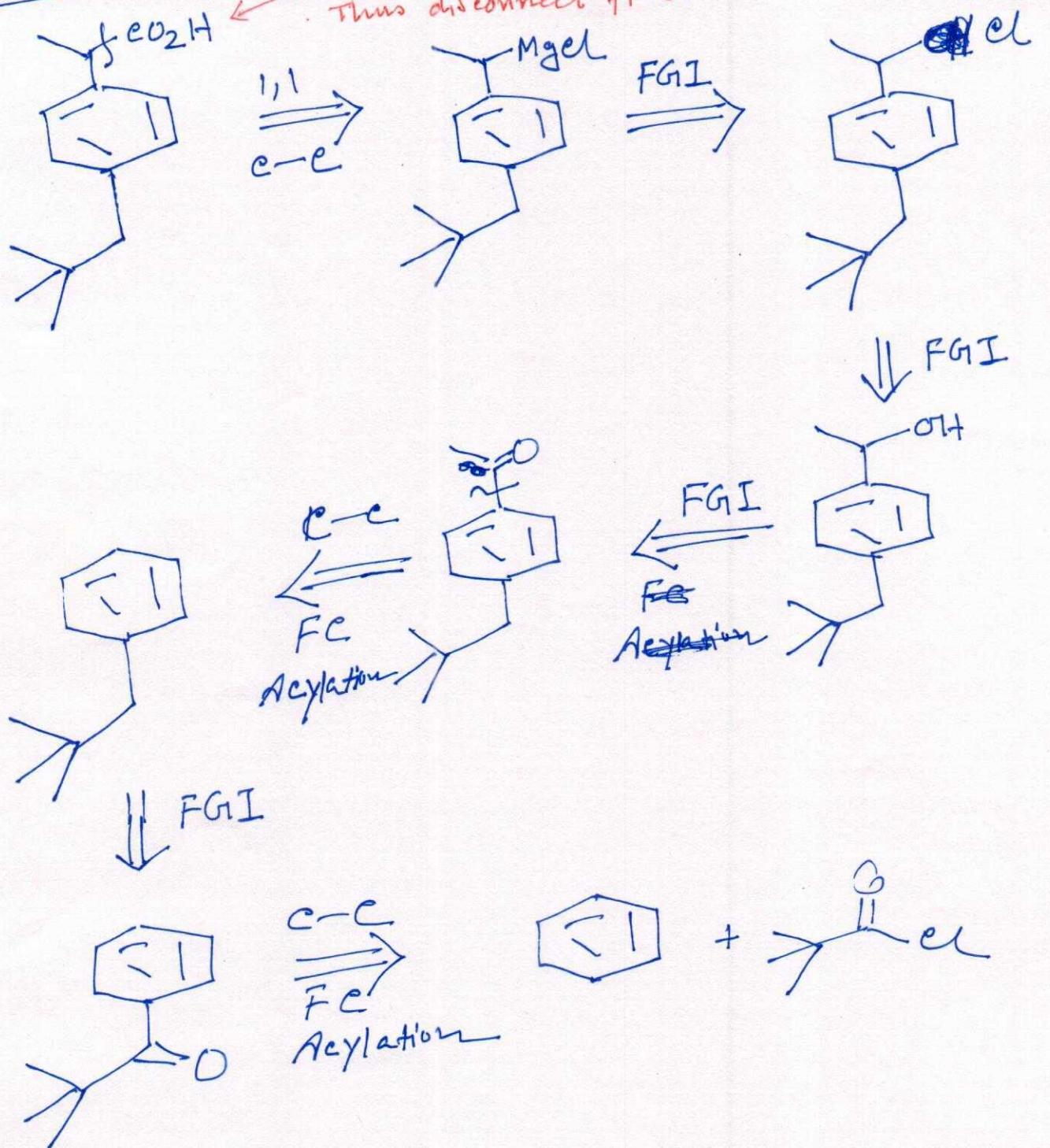
$\downarrow +\text{BnMe}_2\text{SiCl}$
 (TBS Cl)



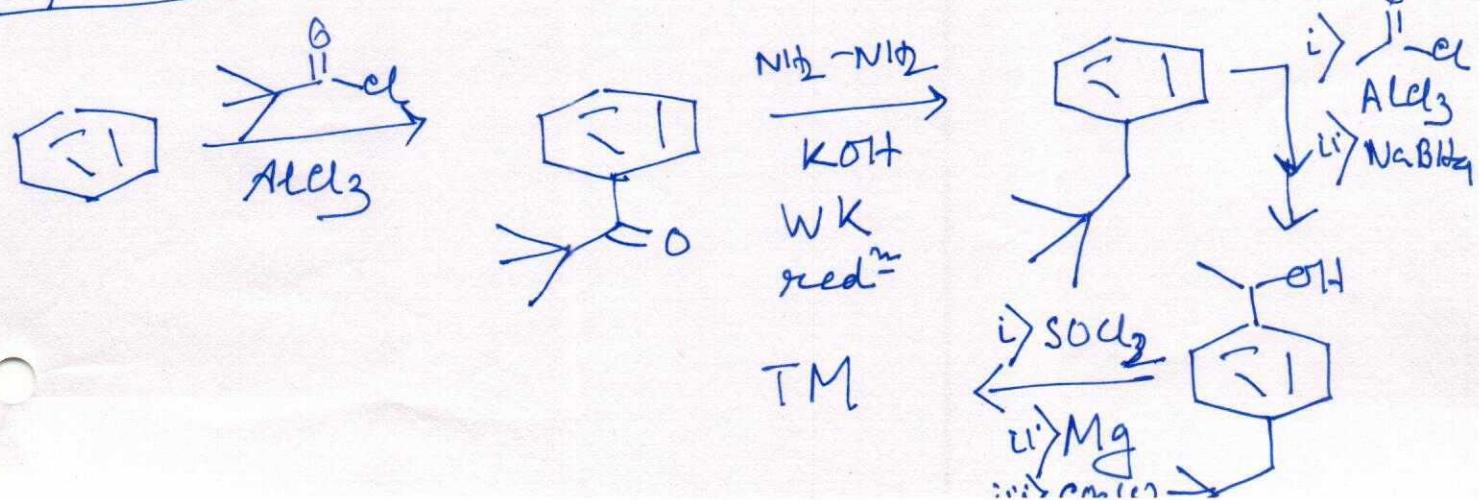
Examples:

Most reactive FG I
Thus disconnect first

(47b)

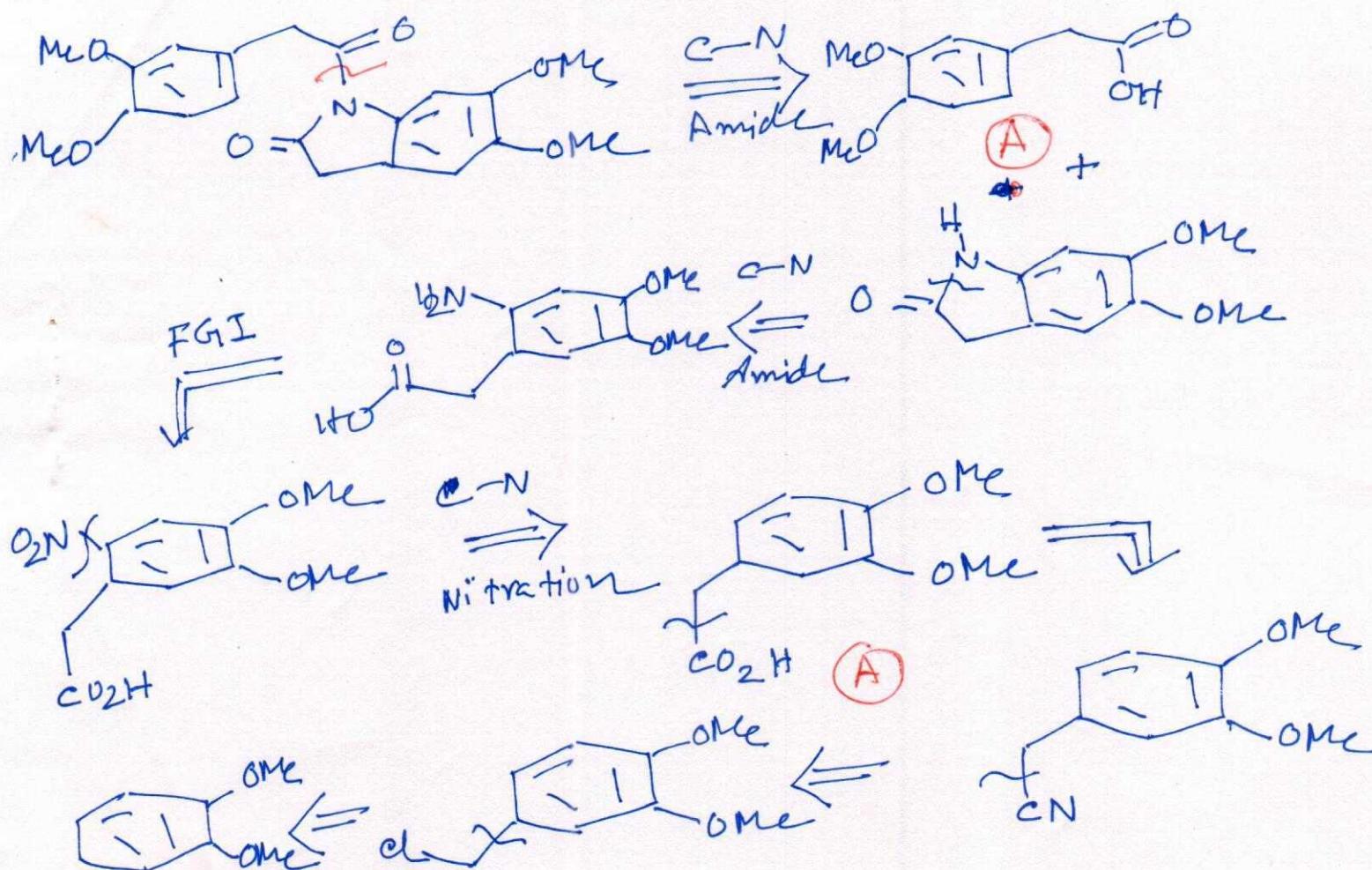


Synthesis:



Example:

(47C)



Synthesis:

