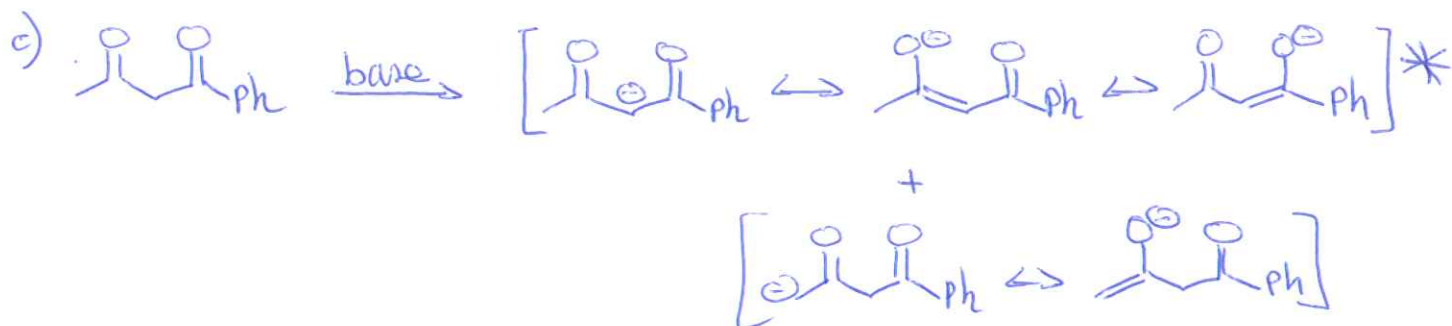
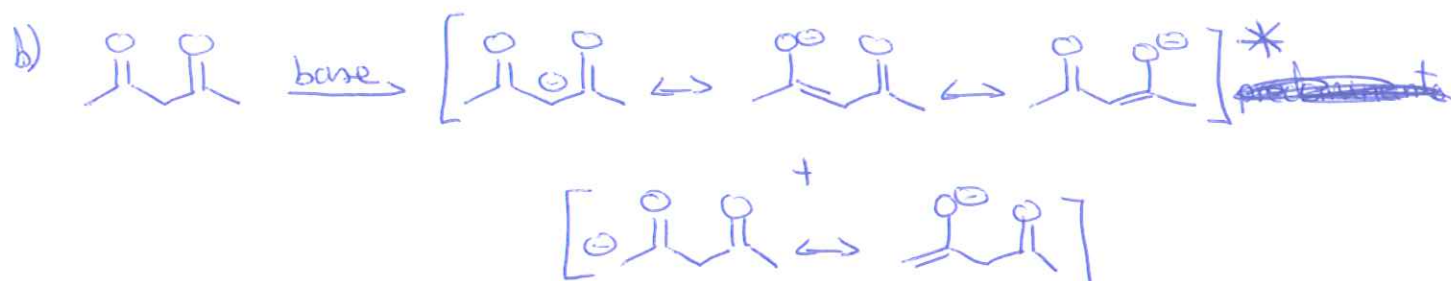
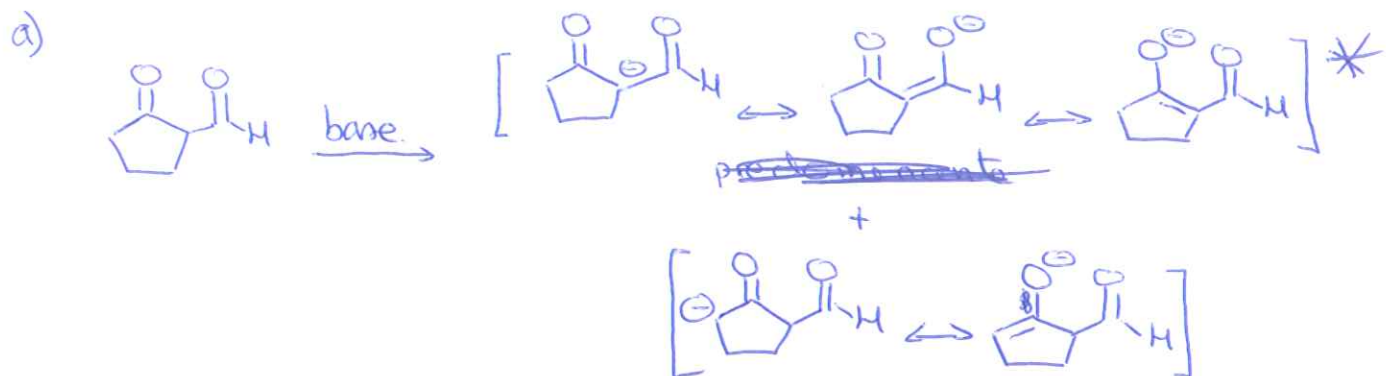
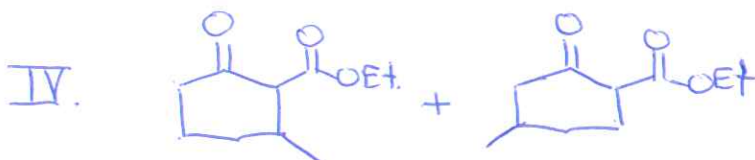
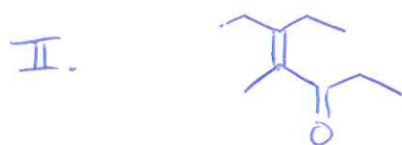
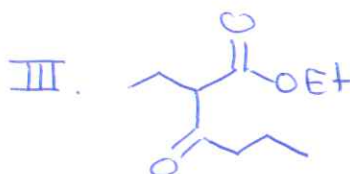
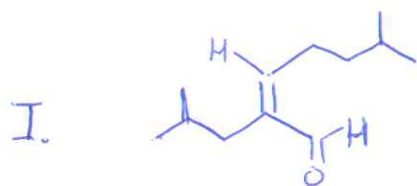


Esercizio 1.



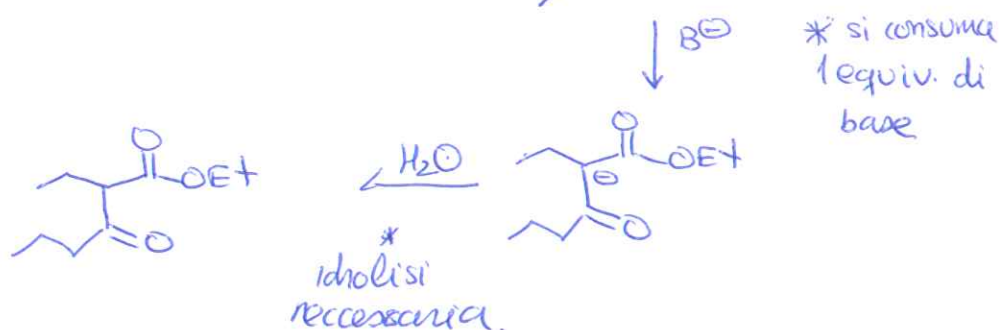
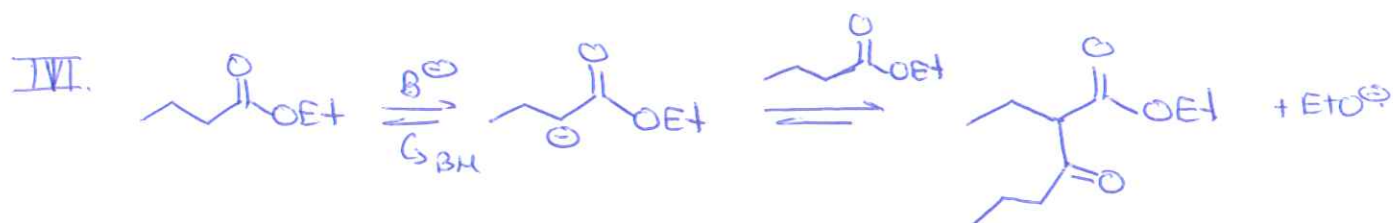
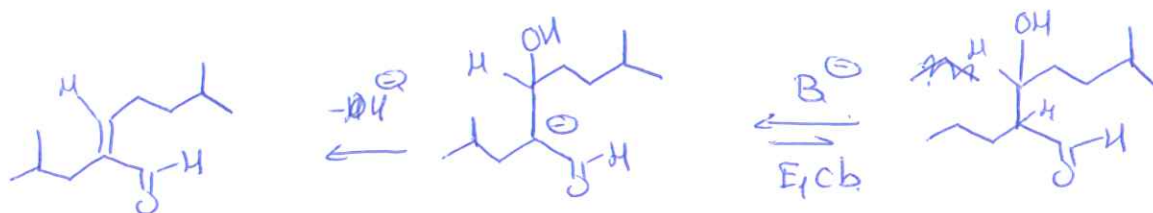
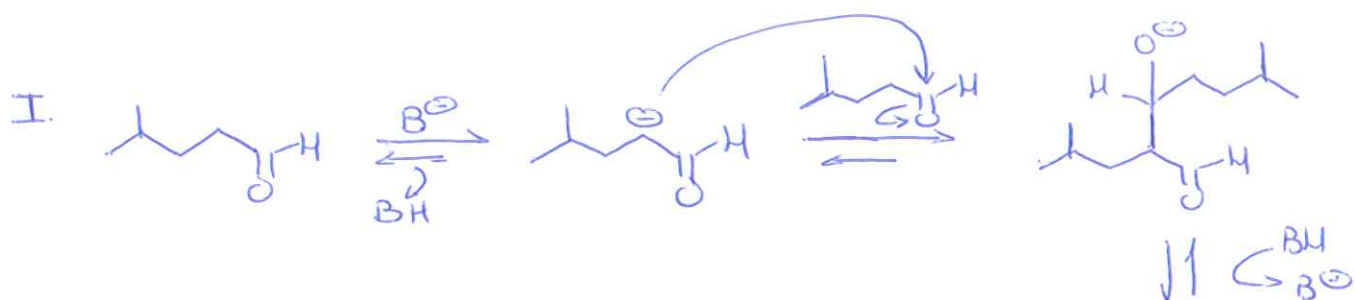
Esercizio II



I, II. condensazione aldolica

III. condensazione di Claisen

IV. condensazione di Dieckmann.

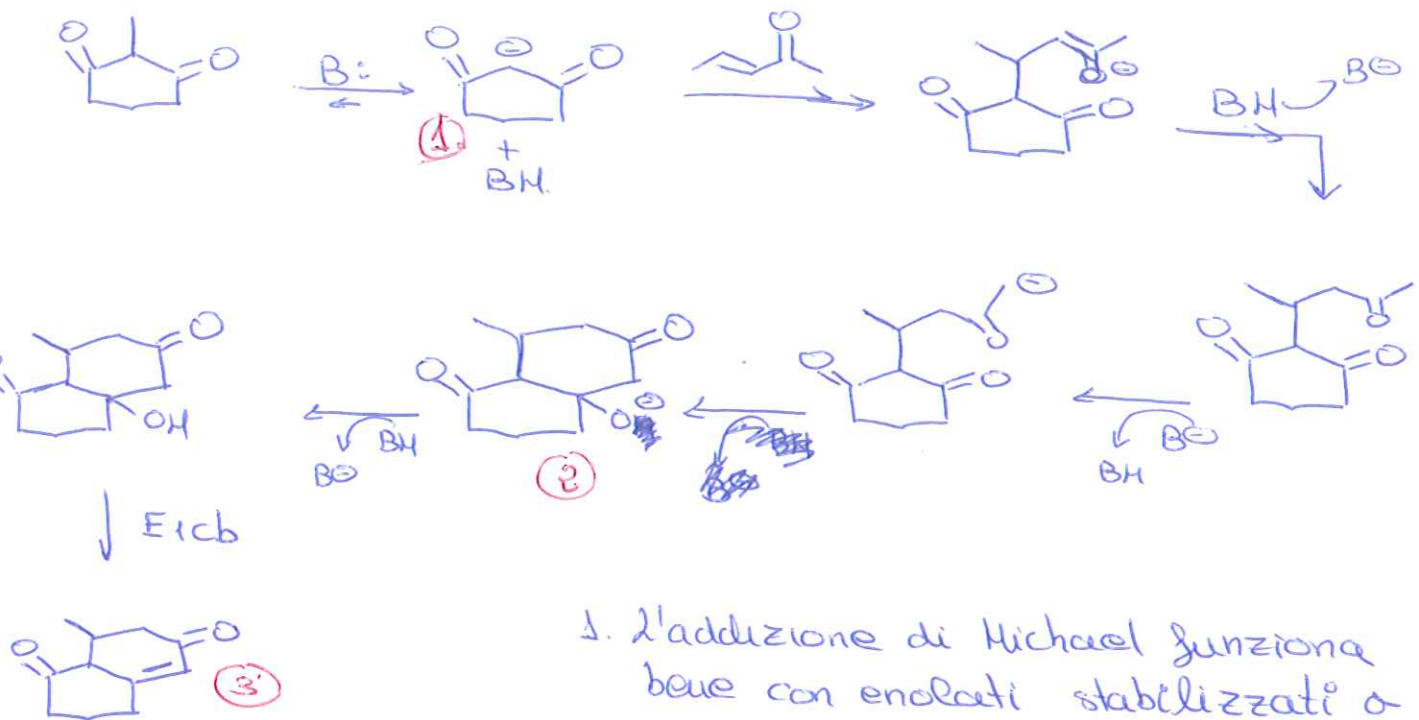


estere asimmetrico, due posizioni acide non equivalenti.



Esercizio 3.

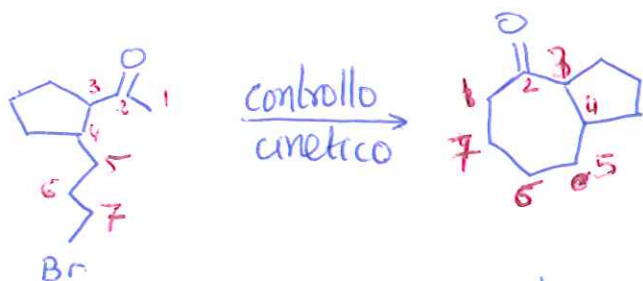
Anellazione di Robinson: addizione di Michael
+ condensazione aldolica intramolecolare



Base debole
OH⁻
EtO⁻

1. L'addizione di Michael funziona bene con enolati stabilizzati o enammine
2. Si forma il ciclo più stabile
3. Il prodotto è un cicloesanonone α, β -insaturato

Esercizio 4.



1) LDA / -78°C

o.

1) $\text{NH}_2-\text{N}^+ \text{H}^+$] QUESTO NON LO AVETE VISTO A LEZIONE

2) LDA.

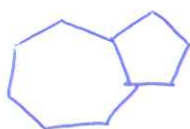
riduzione di Clemmensen. $\text{Zn(Hg)}, \text{H}^+, \Delta$

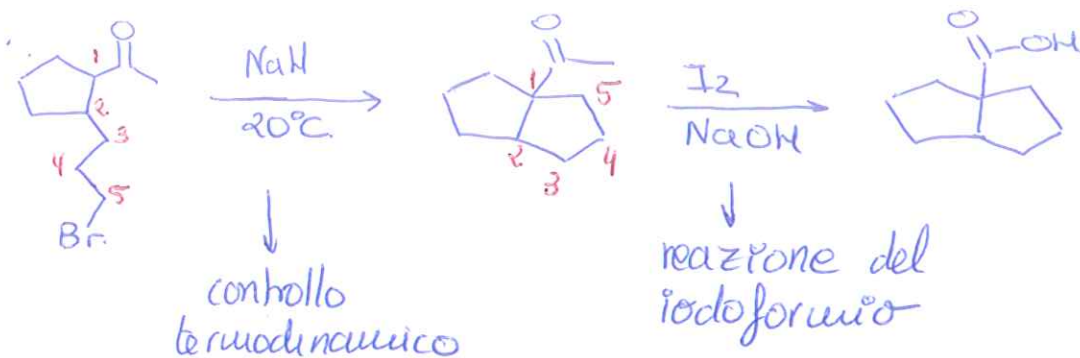
riduzione di Wolff-Kishner. $\text{NH}_2\text{NH}_2, \text{OH}^-$

o.

1. $\text{HS}-\text{CH}_2-\text{CH}_2-\text{SH}, \text{H}^+$

2. Ni Raney, H_2 .

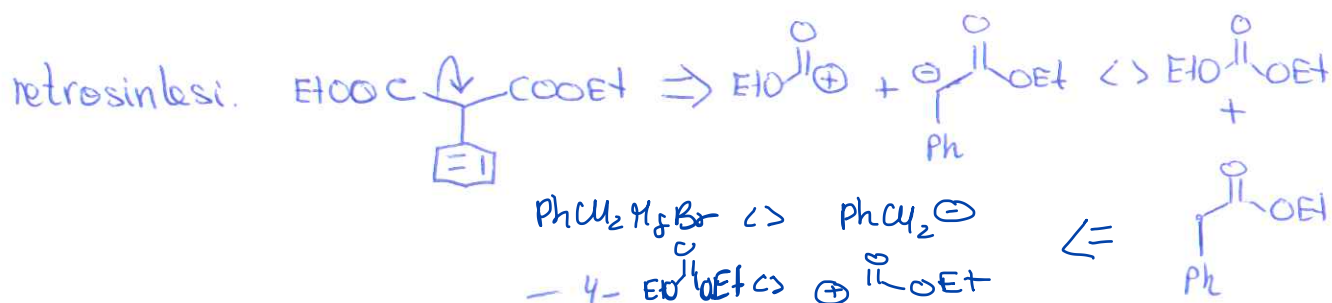
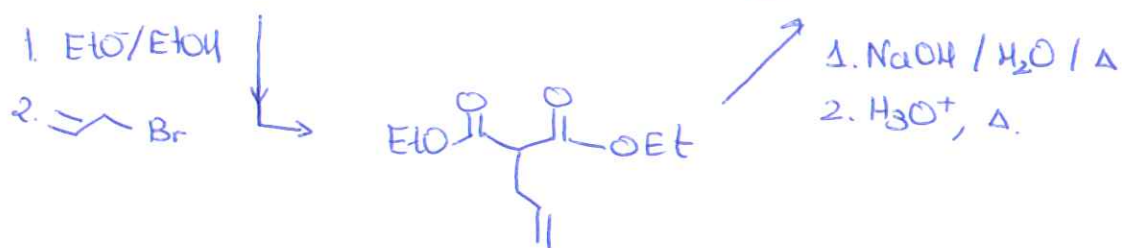




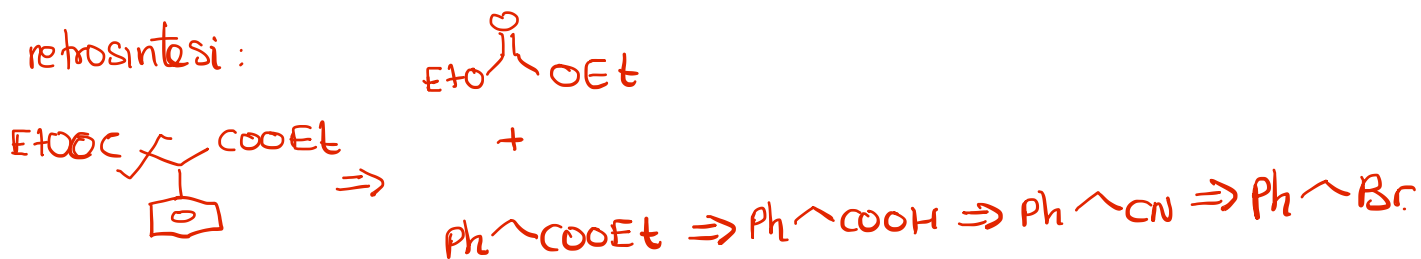
Esercizio 5



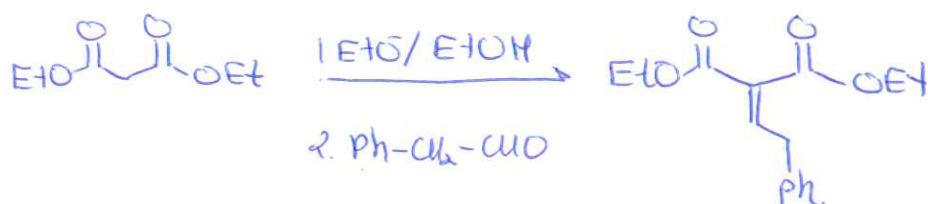
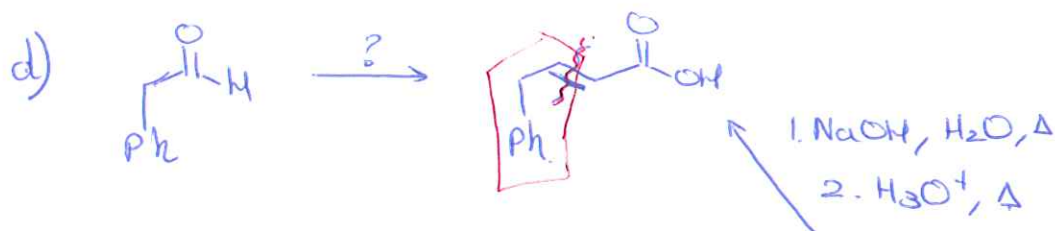
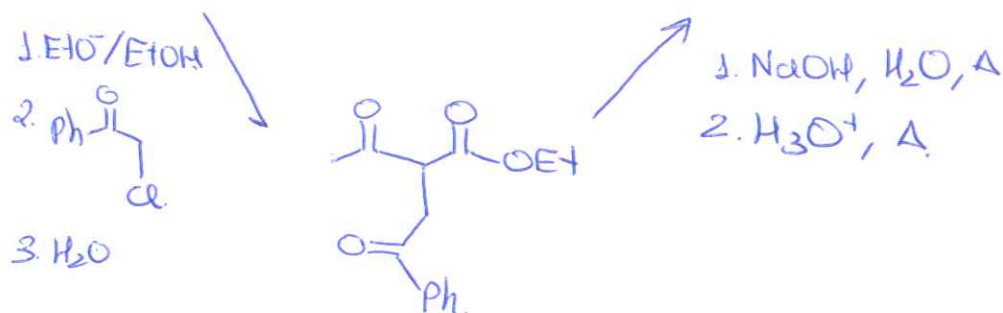
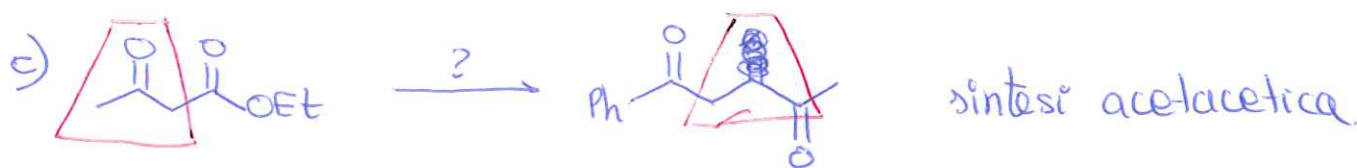
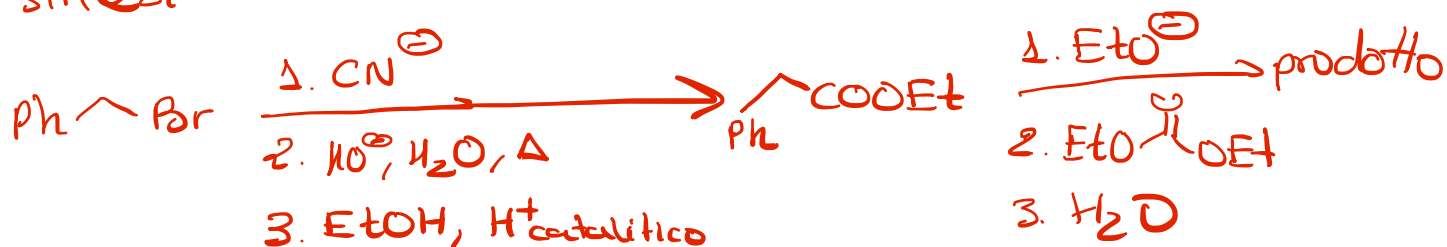
Esercizio 6



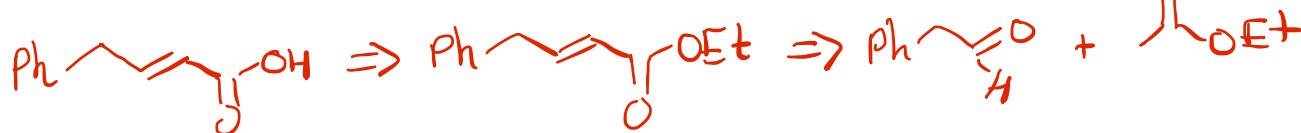
retrosintesi:

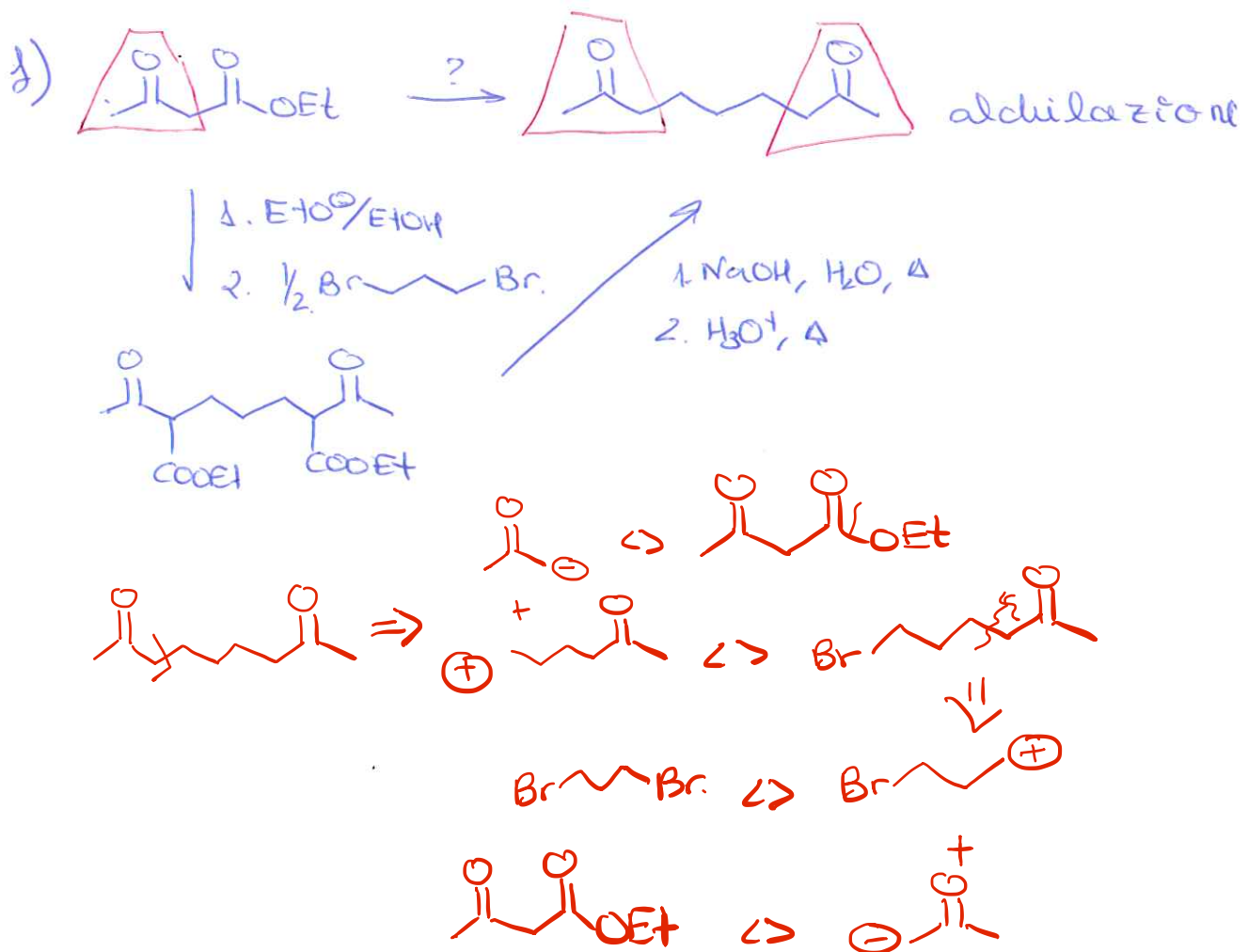
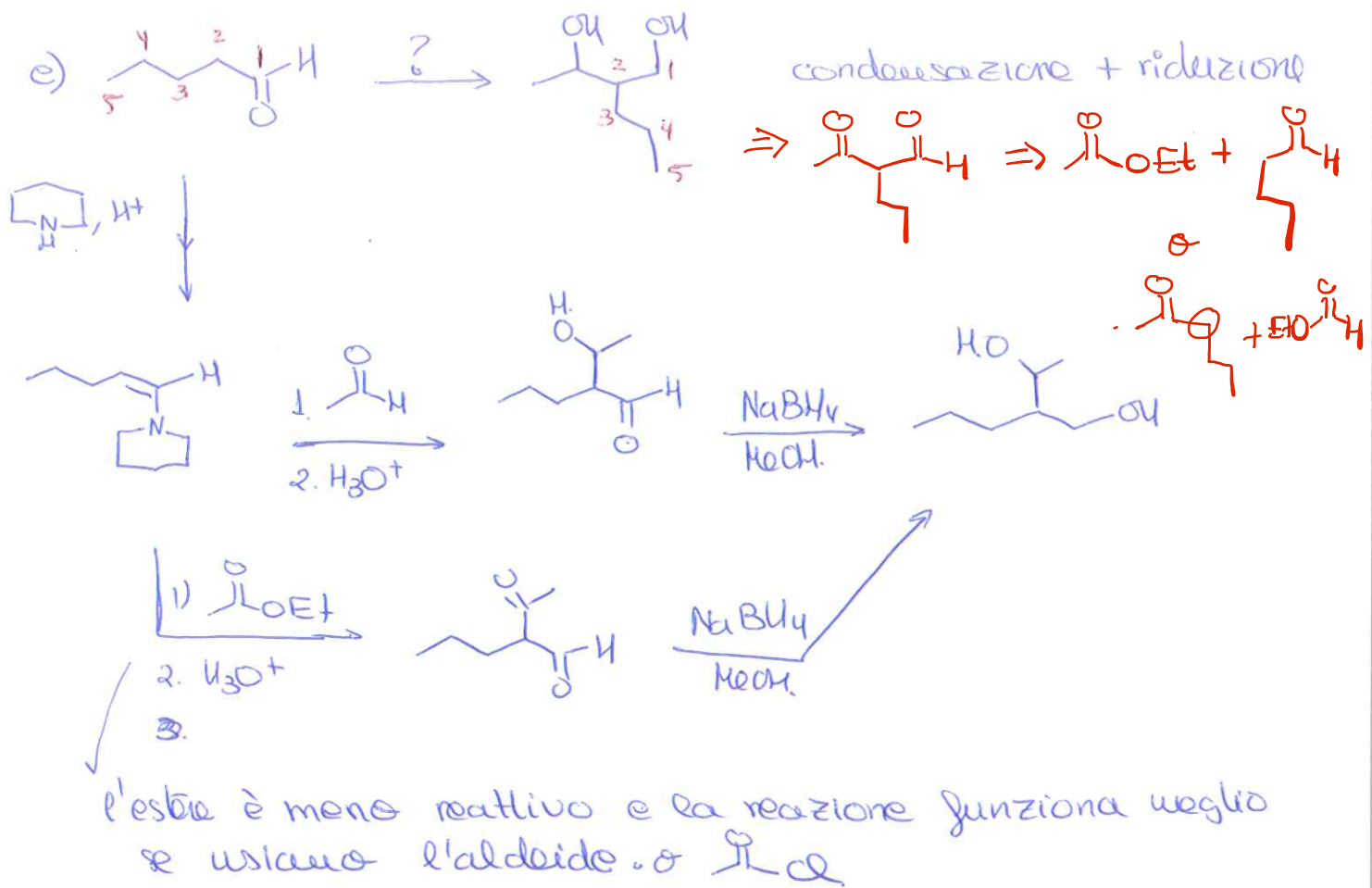


sintesi

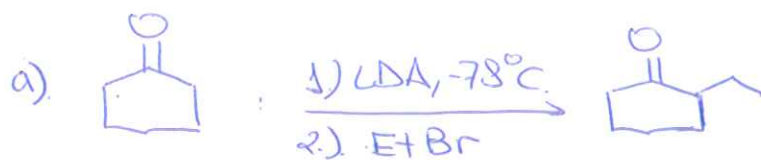


è meglio usare EtOOC-C(=O)-CH2-C(=O)-OEt

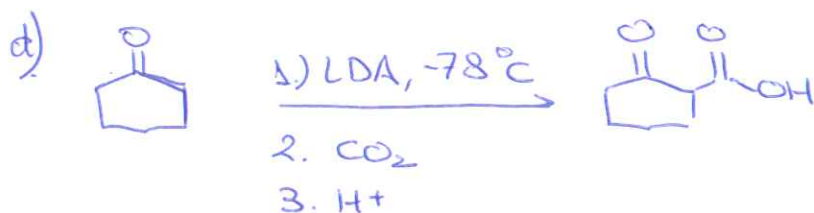
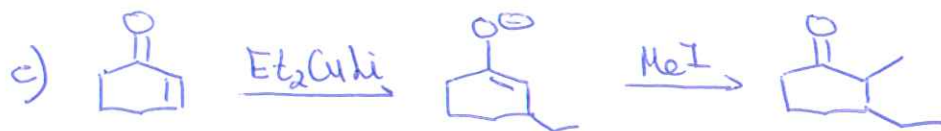
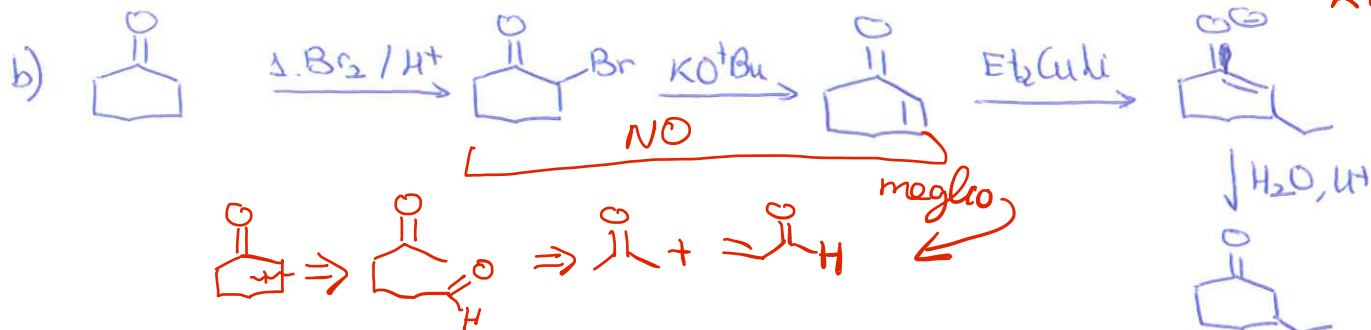




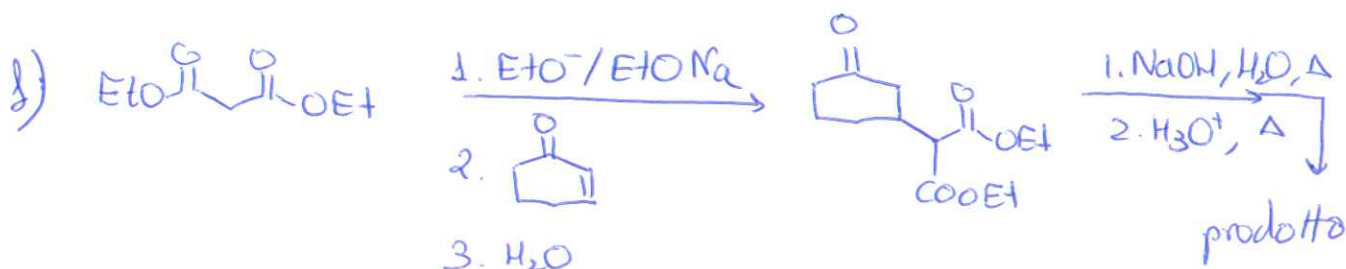
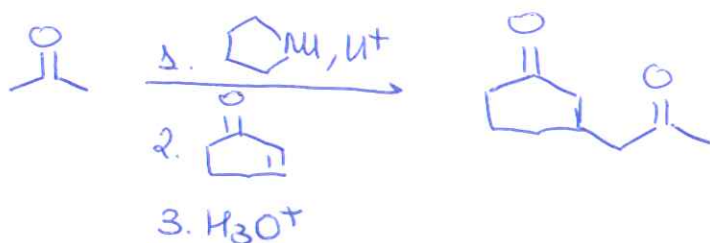
Esercizio 7

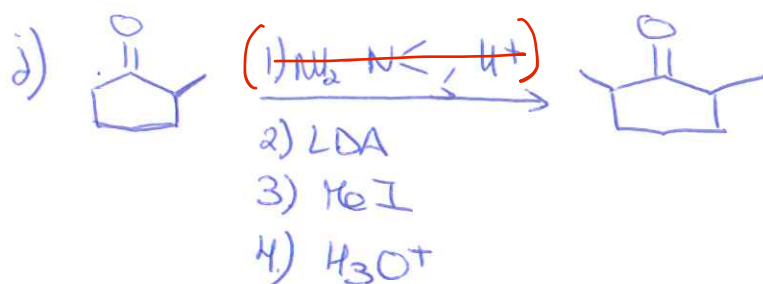
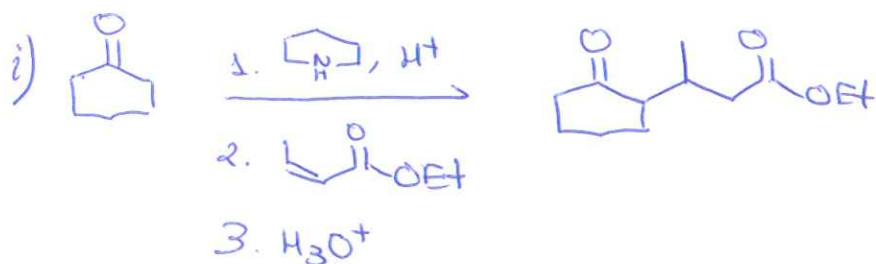
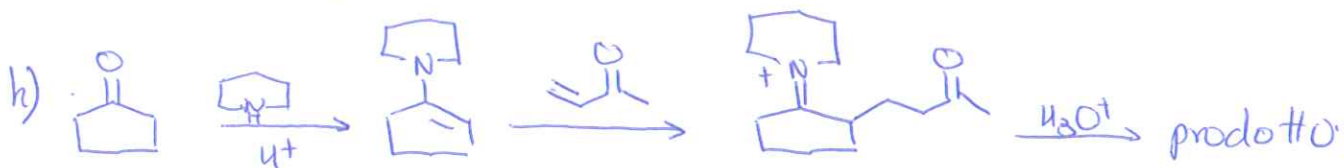
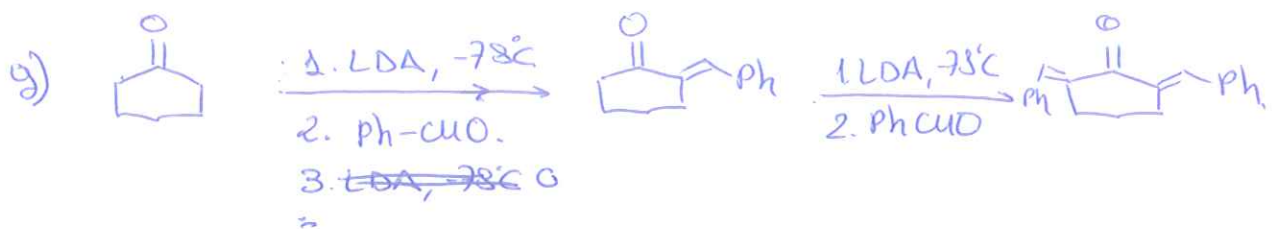


possiamo usare anche
l' enammine o l'idrazone
NON VISTO
A LEZIONE

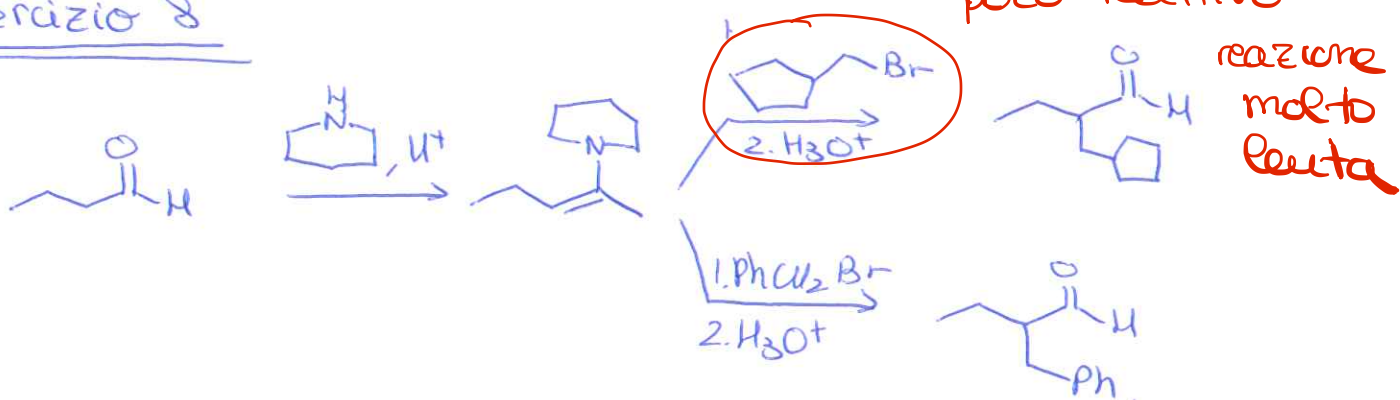


e)

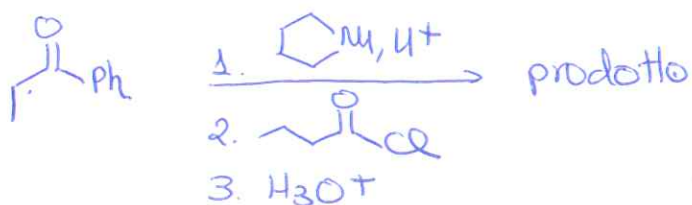
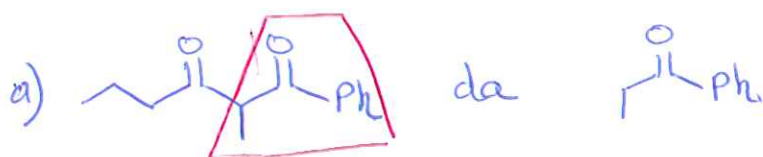


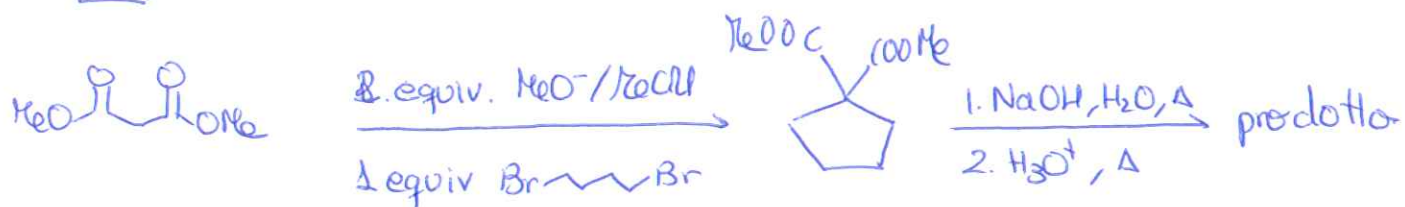
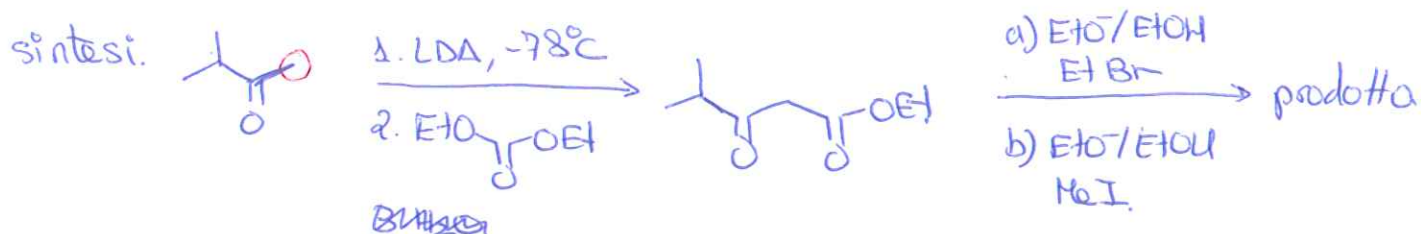
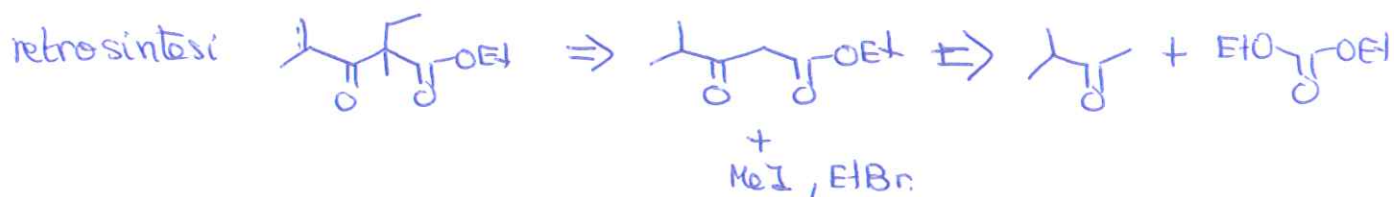
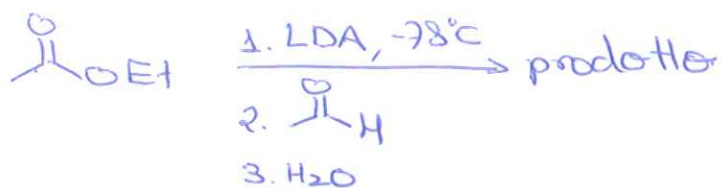


Esercizio 8

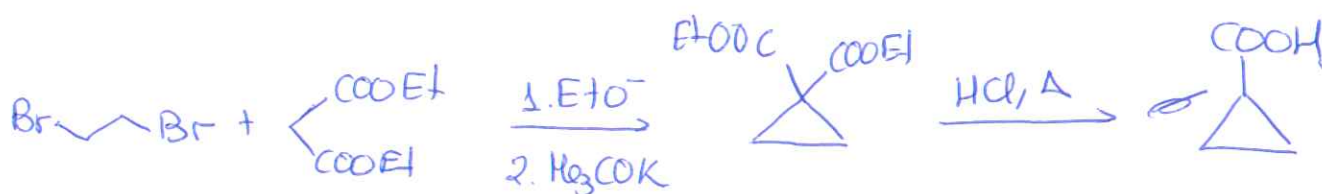


Esercizio 9





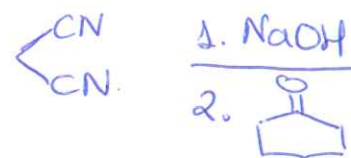
Esercizio 10



Esercizio 11

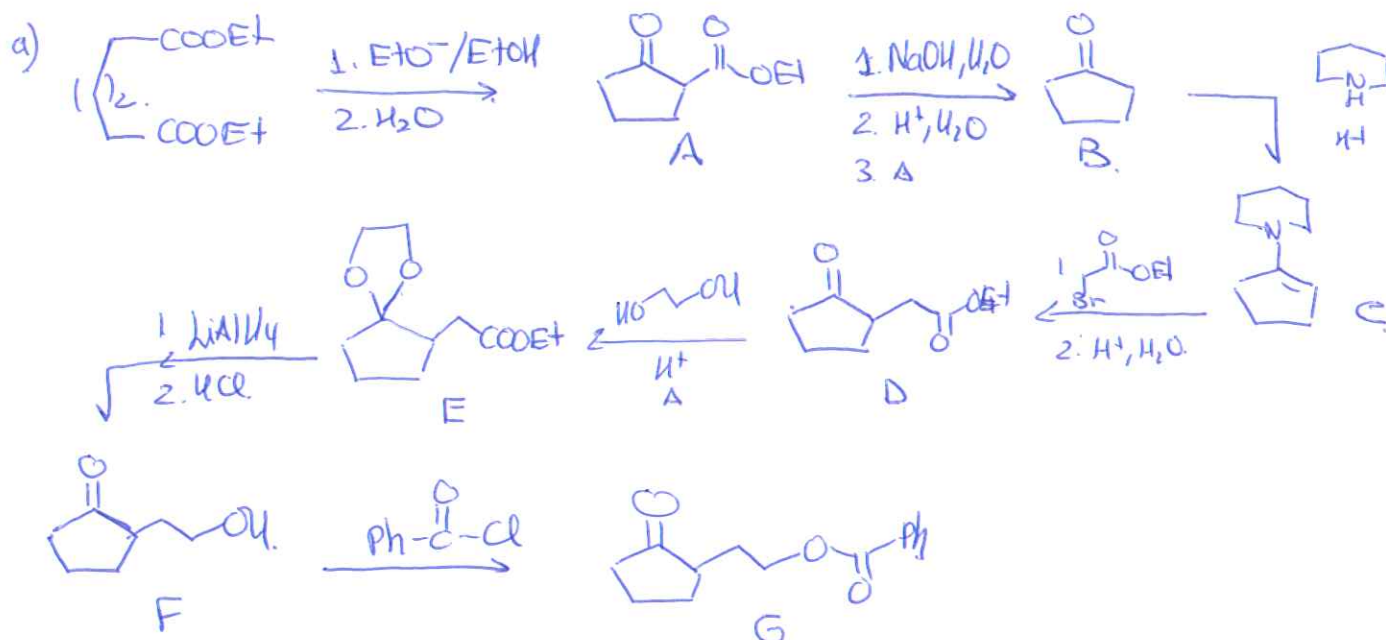
a) $\text{NaOH}, \text{H}_2\text{O}, \Delta \rightarrow$ per favorire la E1cb
o medio acido, ancora meglio

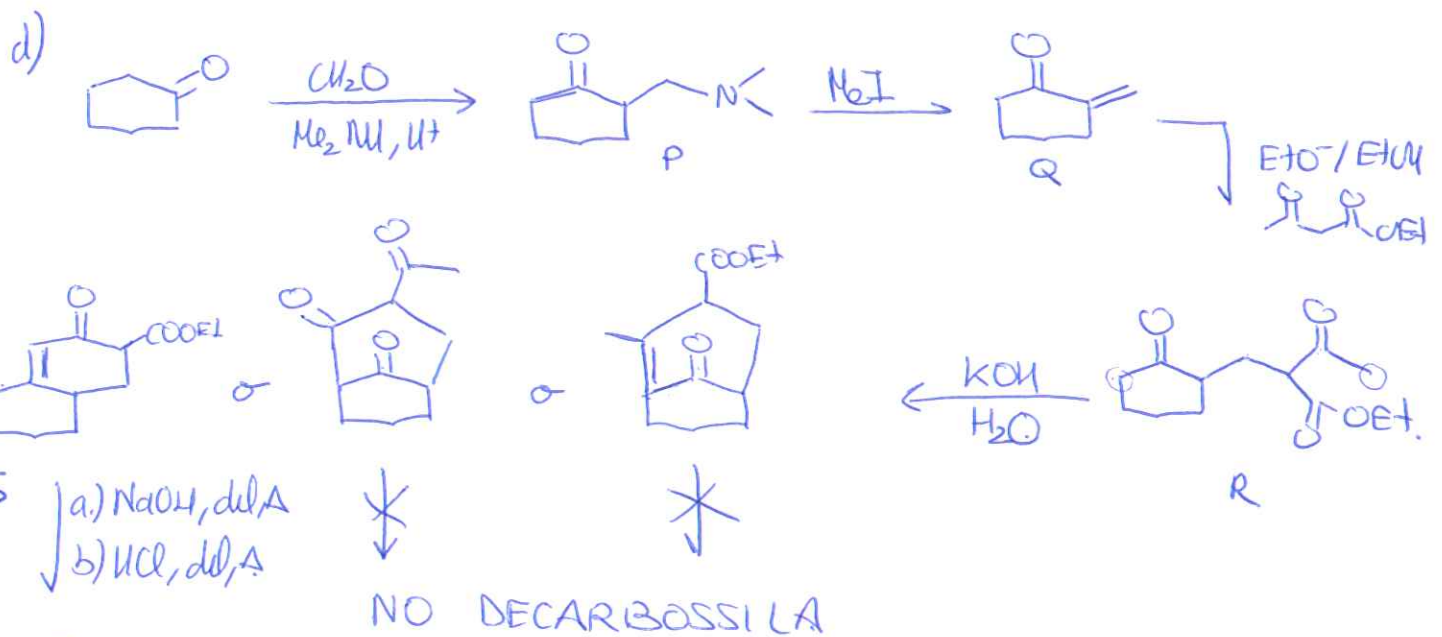
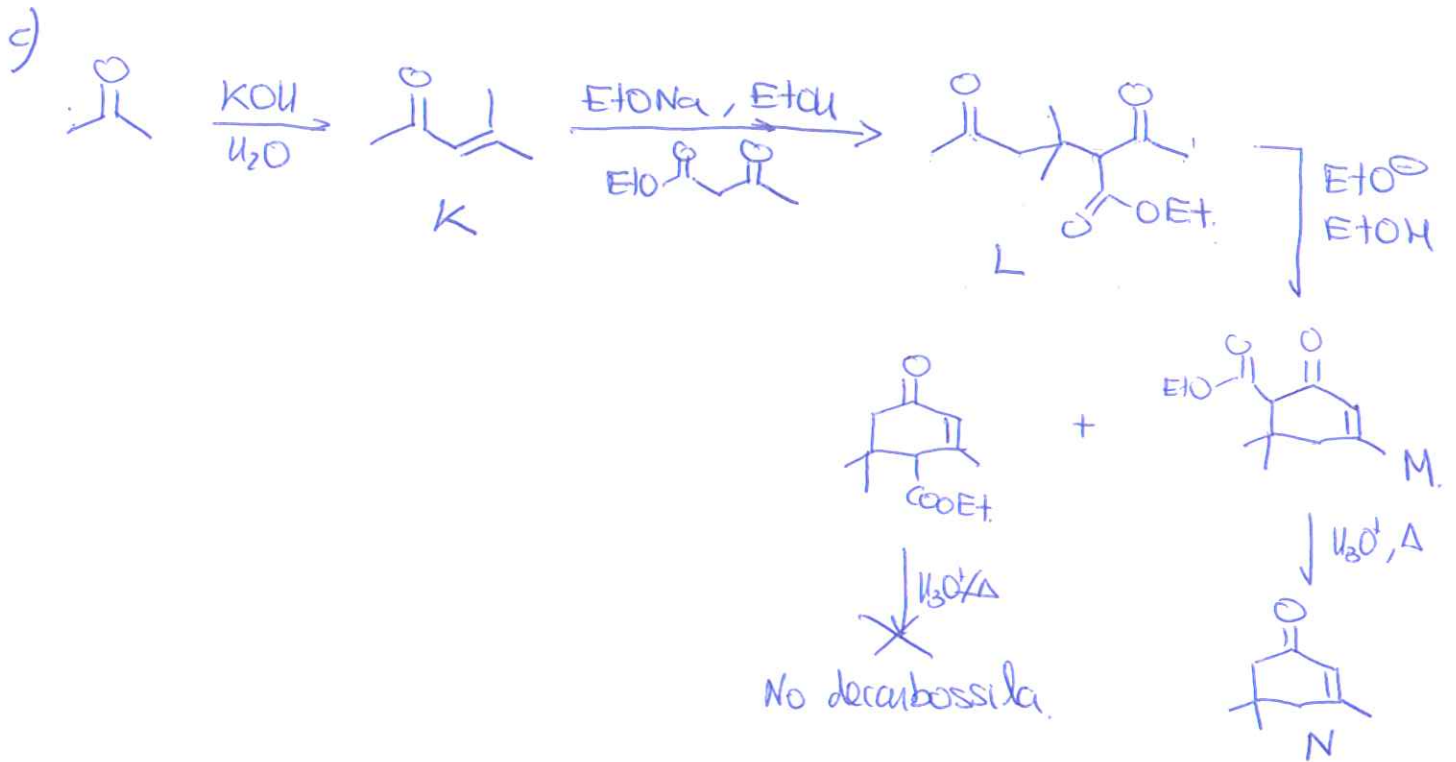
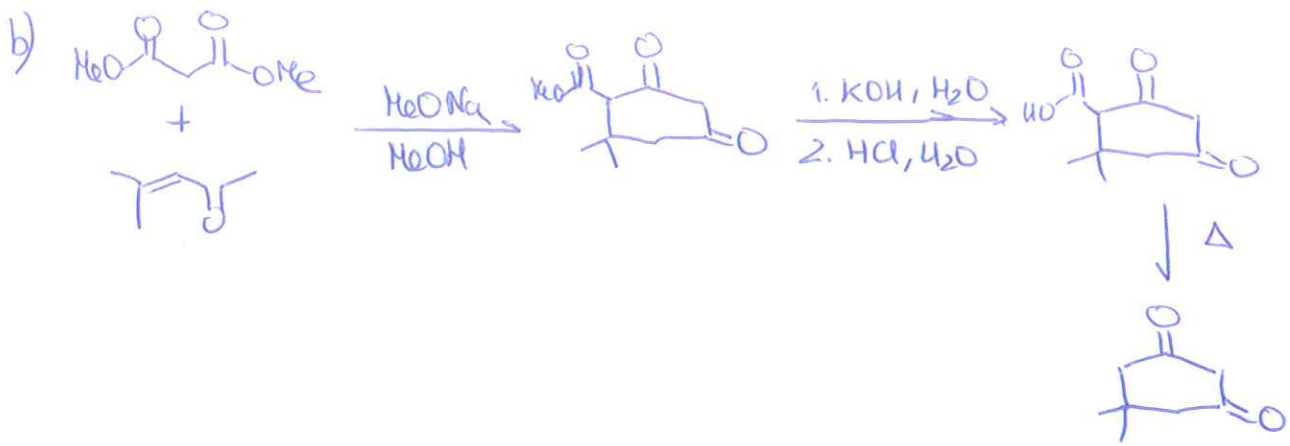
b) 1. $\text{EtO}^- / \text{EtOH}$
2. $\text{NaOH}, \text{H}_2\text{O}, \Delta$
3. $\text{H}_3\text{O}^+, \Delta$

c)  $\xrightarrow[2. \text{cyclopentanone}]{1. \text{NaOH}}$ prodotto.

d) 1. NaH , THF, 25°C
2. $\text{Ph}-\text{CH}_2\text{CHO}$
3. disidratazione

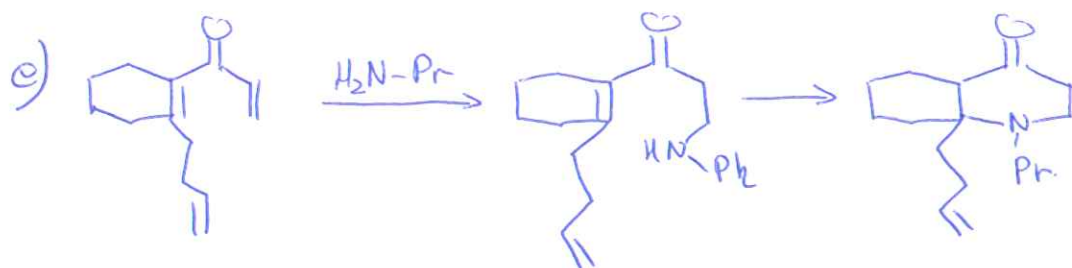
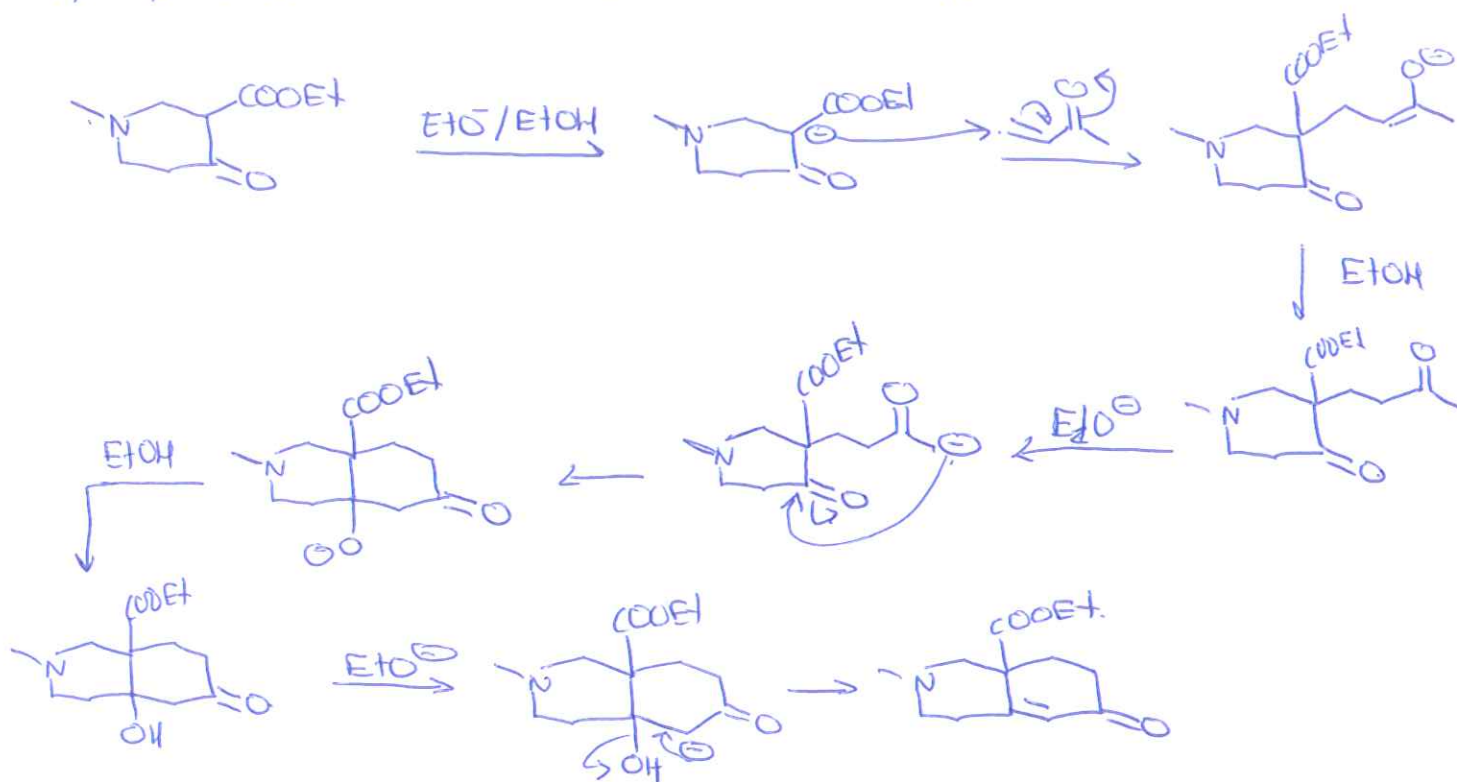
Esercizio 12



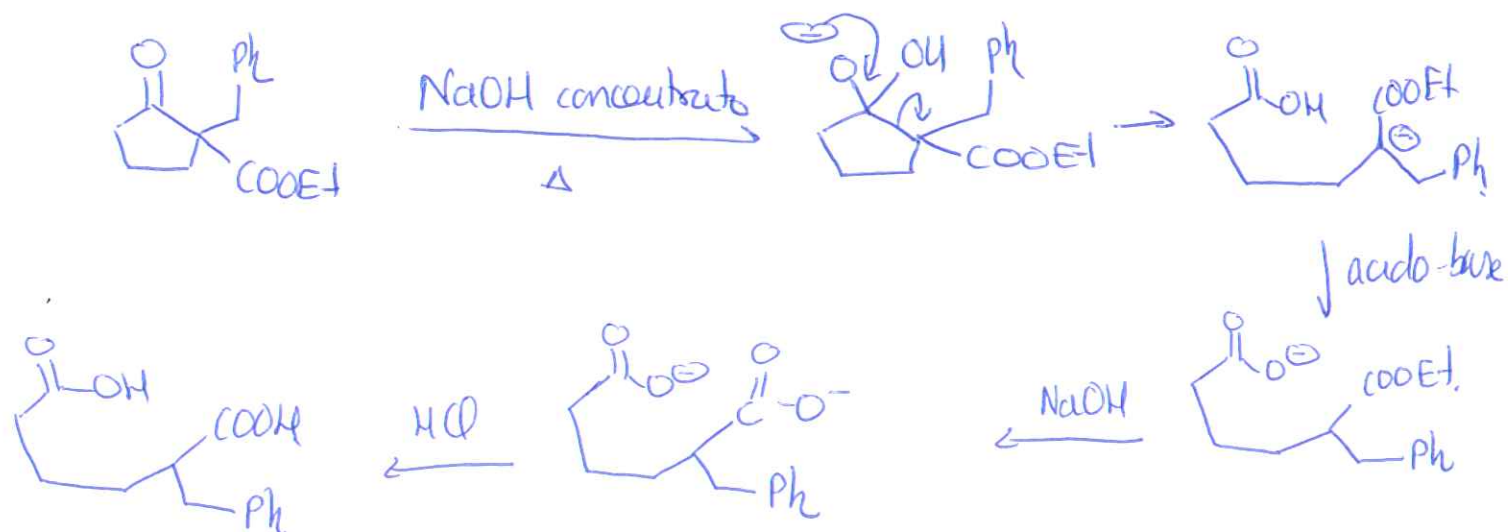


Esercizio 3

a), b), c), d) anellazione di Robinson.

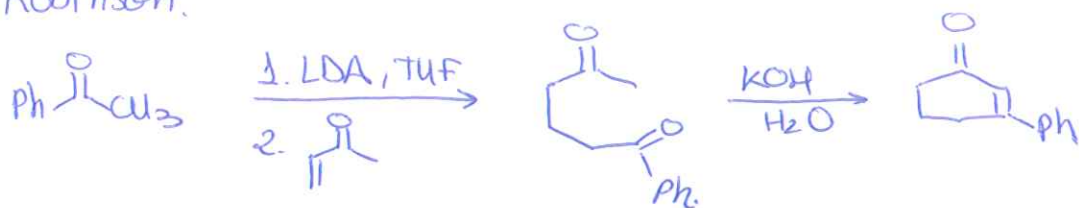


f) ~~Attenzione!!~~ Attenzione!! Non avete visto questa reazione a lezione.

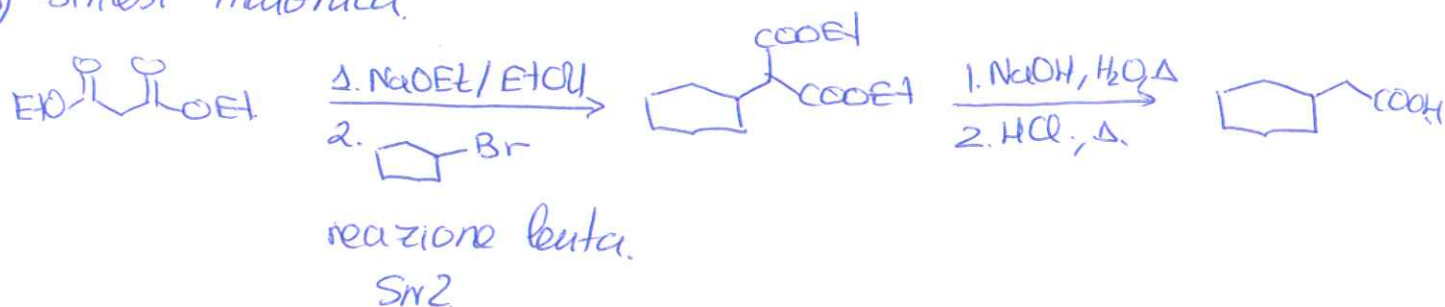


Esercizio 14

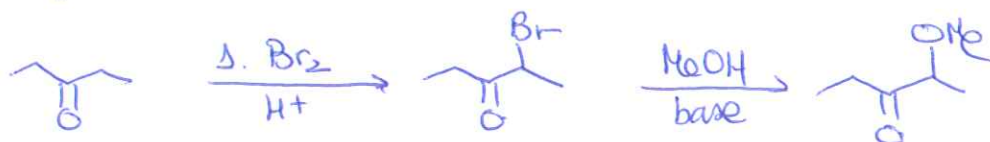
a) Robinson.



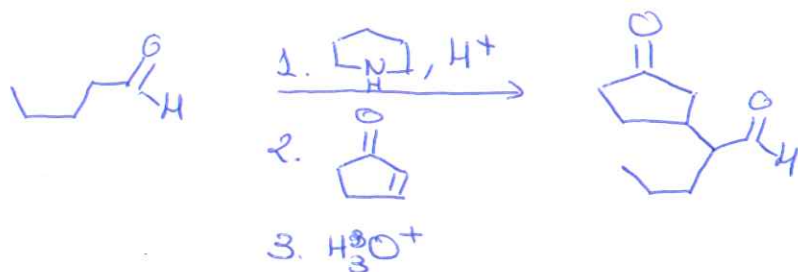
b) sintesi malonica.



c) alogenazione in α



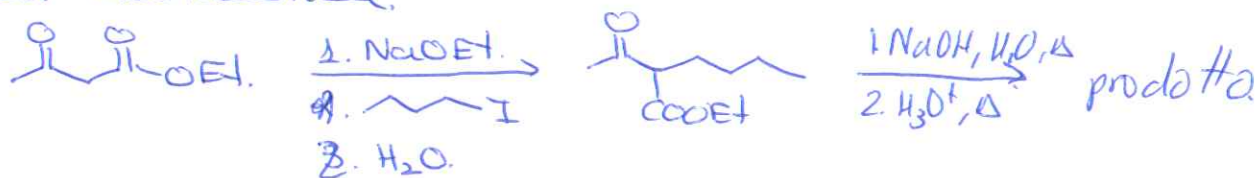
d) addizione di Michael



e) reazione aldolica.



f) sintesi acetacetica.



g) clausen

