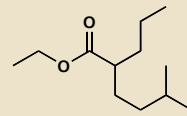


Propose a synthesis

A. Acetoacetic Ester Synthesis

B. Malonic Acid Synthesis



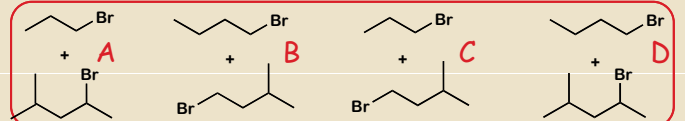
What alkylating reagents are needed?

1. SOCl₂ 2. EtOH

acid
1. OH⁻
2. H⁺
3. heat

1. NaOEt

2. alkylate

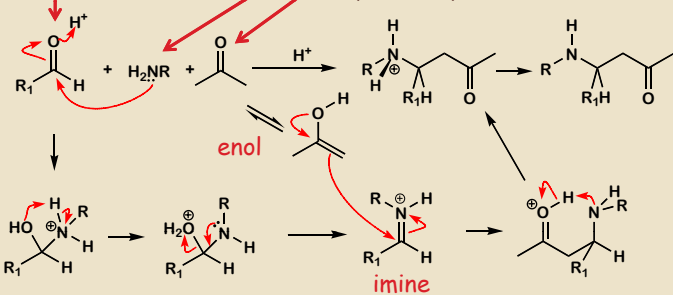


Formaldehyde or aldehyde that won't form enol

Mannich Reaction

Primary or secondary amine

Any carbonyl that forms enol

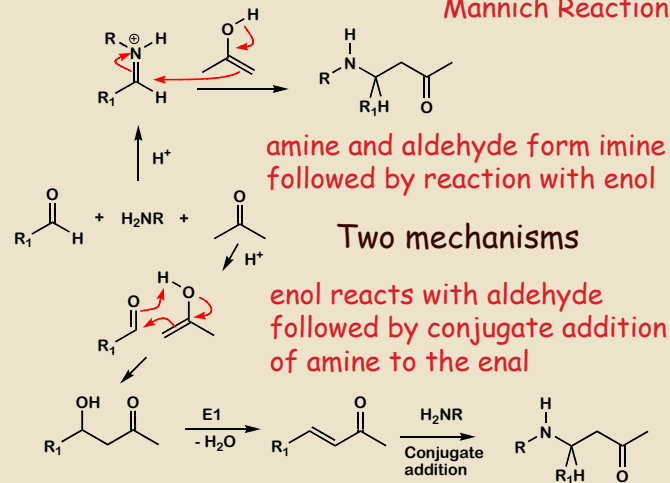


Mannich Reaction

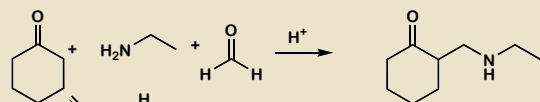
amine and aldehyde form imine followed by reaction with enol

Two mechanisms

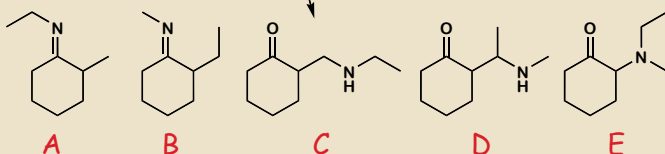
enol reacts with aldehyde followed by conjugate addition of amine to the enal



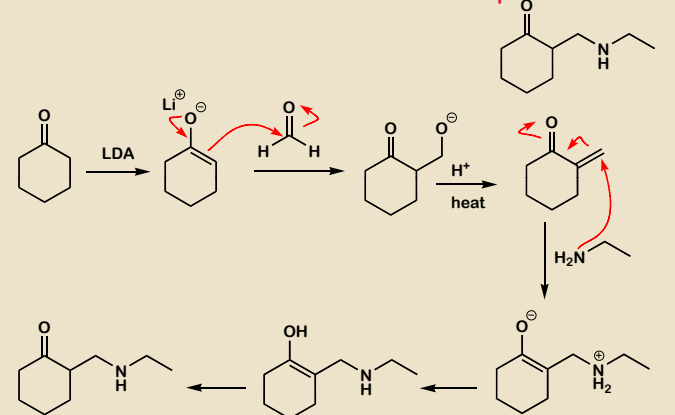
Mannich Reaction

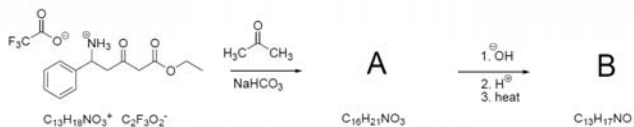


Predict the Product



How else could we make the same product?

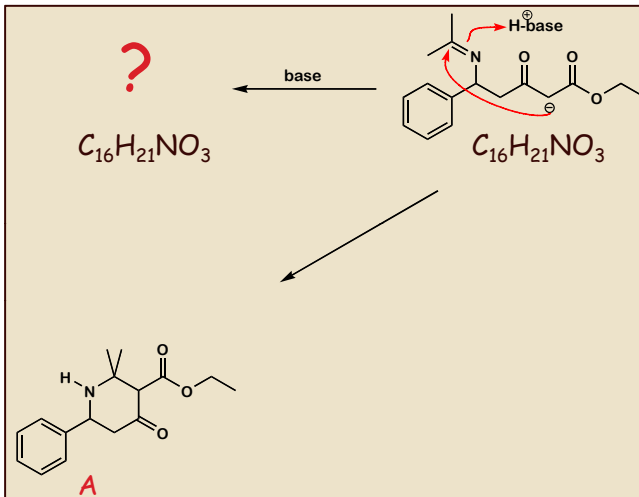
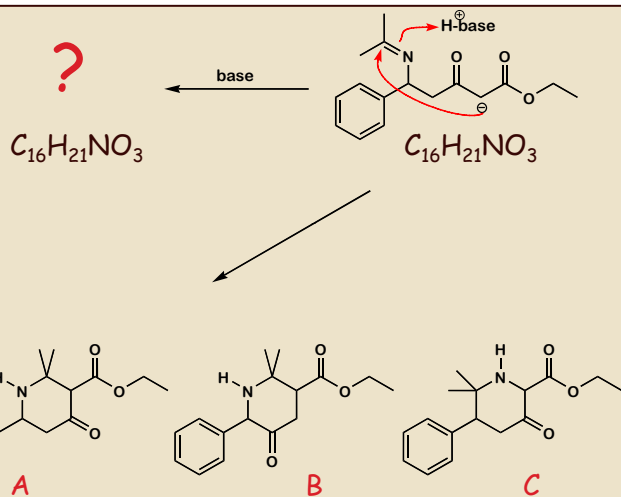
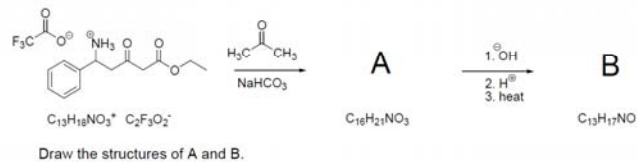
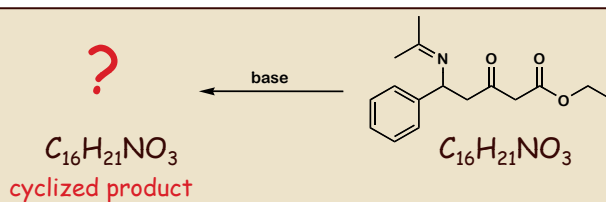
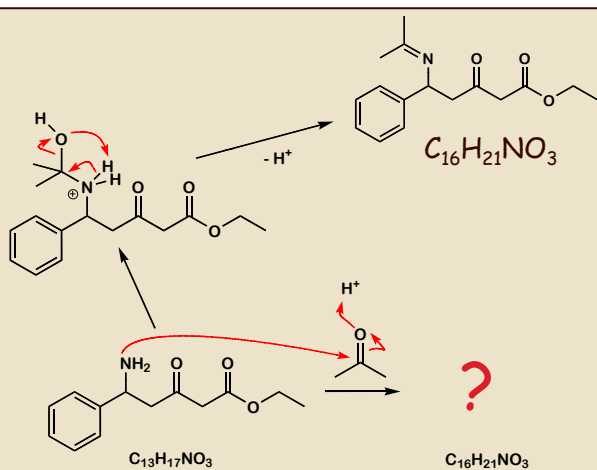
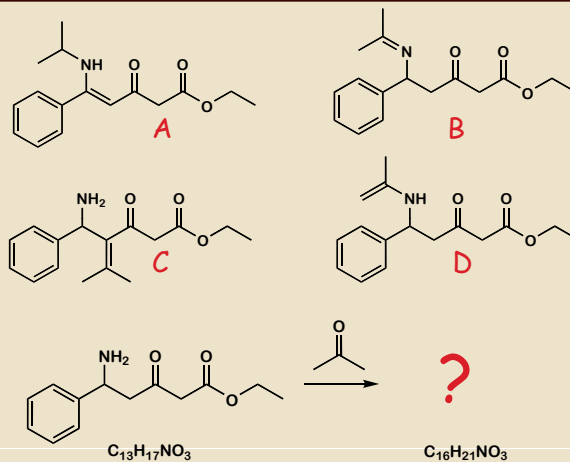
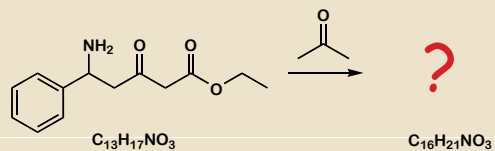


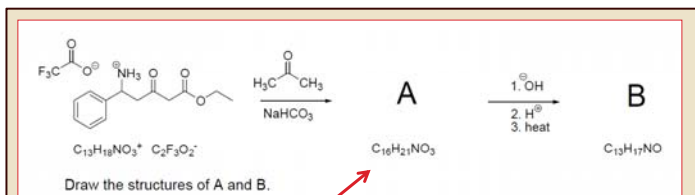


Draw the structures of A and B.

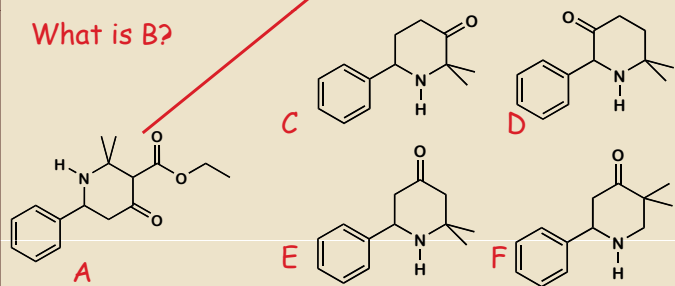
Challenge Problem Exam 2 in Spring 2008

NaHCO_3 is a base and will deprotonate $\text{R}-\text{NH}_3^+$



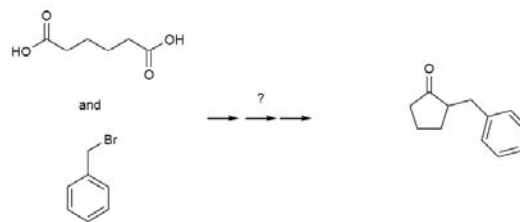


What is B?

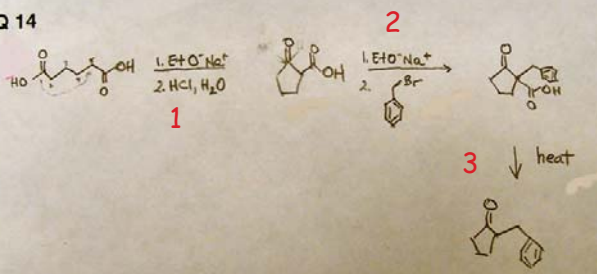


From 2007 Exam **Review**

14. Show how you could perform the following transformation.



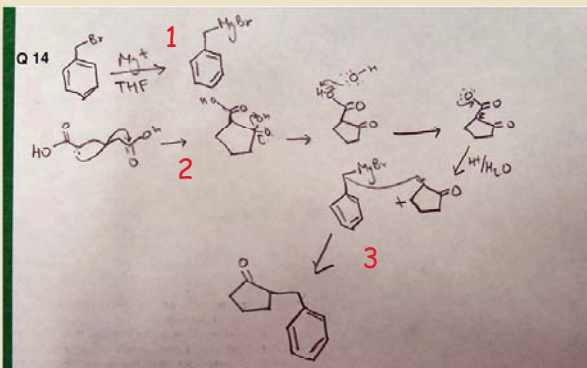
Q 14



How many of the the 3 steps are correct?

- A 0 B 1 C 2 D 3

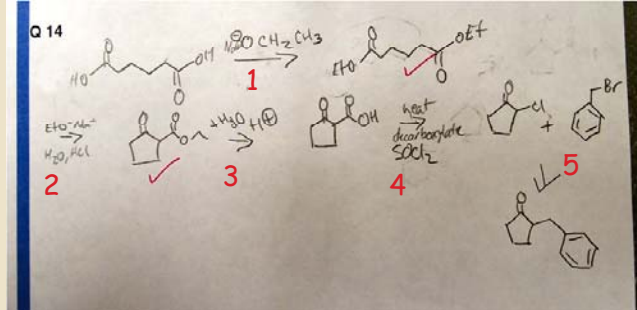
Q 14



How many of the 3 steps are correct?

- A 0 B 1 C 2 D 3

Q 14



How many of the 5 steps are correct?

- A 0 B 1 C 2 D 3 E 4 F 5

