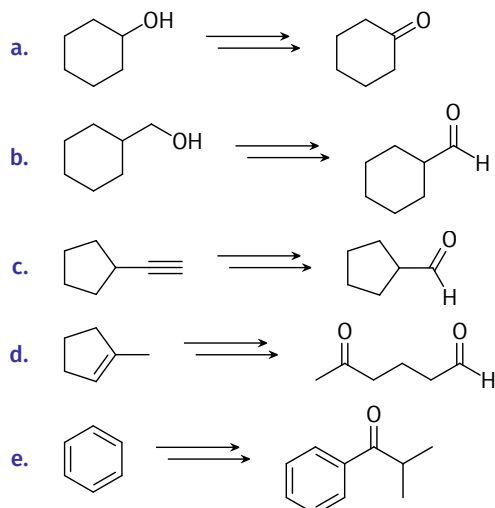




Nível 1

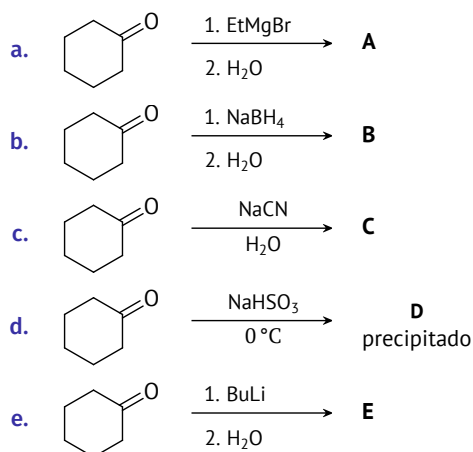
4K.01

Proponha uma rota de síntese para as seguintes transformações.



4K.02

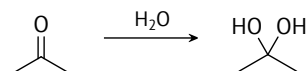
Considere as transformações a seguir.



Apresente a estrutura dos compostos A–E.

4K.03

Aldeídos e cetonas podem sofrer reação de hidratação em solução aquosa, como representado a seguir.

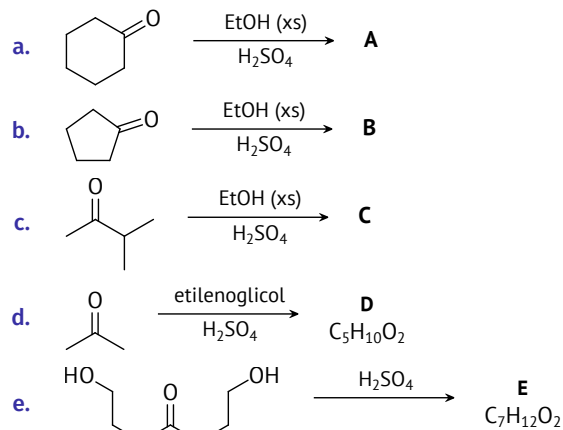


Em solução aquosa de acetona, uma fração desprezível das moléculas, apenas 0,1%, encontram-se na forma hidratada.

- a. **Explique** porque, em uma solução aquosa de formaldeído (formol), a maior parte das moléculas (99,9%) encontra-se na forma hidratada.
- b. **Explique** porque, em uma solução aquosa de hexafluoroacetona, a maior parte das moléculas (99,9%) encontra-se na forma hidratada.
- c. **Explique** porque, em uma solução aquosa de ciclopropanona, a maior parte das moléculas (99,9%) encontra-se na forma hidratada.

4K.04

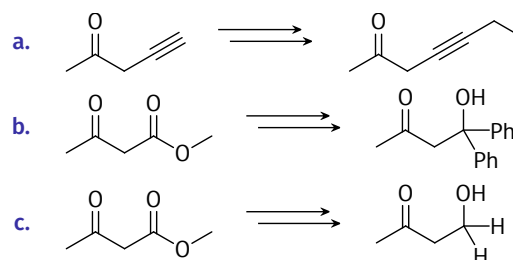
Considere as transformações a seguir.



Apresente a estrutura dos compostos A–E.

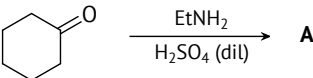
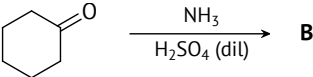
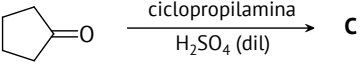
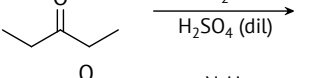
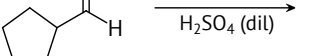
4K.05

Proponha uma rota de síntese para as seguintes transformações.



4K.06

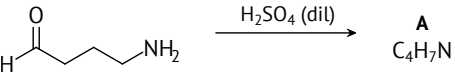
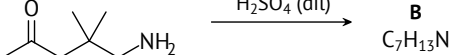
Considere as transformações a seguir.

- a.  **A**
- b.  **B**
- c.  **C**
- d.  **D**
- e.  **E**

Apresente a estrutura dos compostos A–E.

4K.07

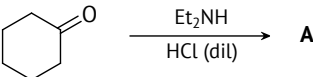
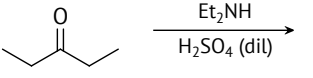
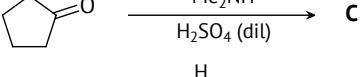
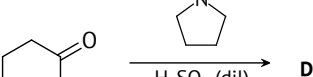
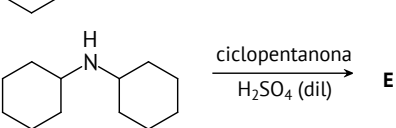
Considere as transformações a seguir.

- a.  **A**
C₄H₇N
- b.  **B**
C₇H₁₃N

Apresente a estrutura dos compostos A–B.

4K.08

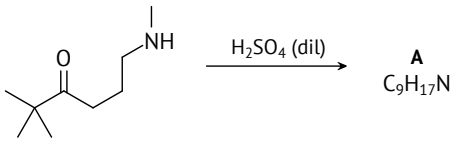
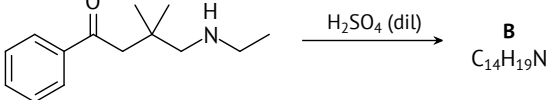
Considere as transformações a seguir.

- a.  **A**
- b.  **B**
- c.  **C**
- d.  **D**
- e.  **E**

Apresente a estrutura dos compostos A–E.

4K.09

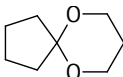
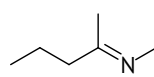
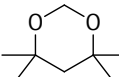
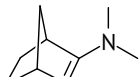
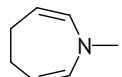
Considere as transformações a seguir.

- a.  **A**
C₉H₁₇N
- b.  **B**
C₁₄H₁₉N

Apresente a estrutura dos compostos A–B.

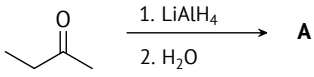
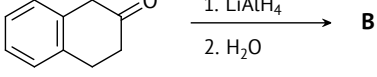
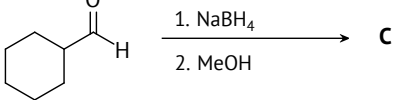
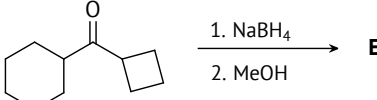
4K.10

Apresente os produtos de hidrólise completa para os compostos a seguir.

- a.  b.  c. 
- d.  e. 

4K.11

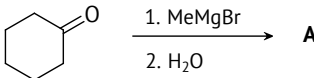
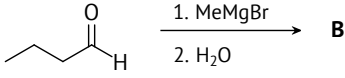
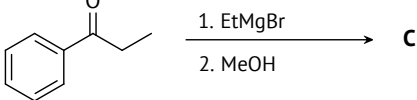
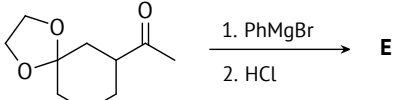
Considere as transformações a seguir.

- a.  **A**
- b.  **B**
- c.  **C**
- d.  **E**

Apresente a estrutura dos compostos A–E.

4K.12

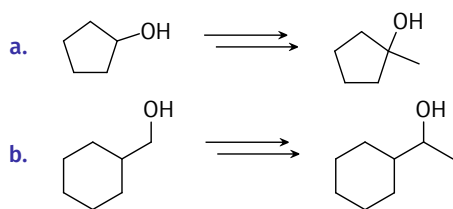
Considere as transformações a seguir.

- a.  **A**
- b.  **B**
- c.  **C**
- d.  **E**

Apresente a estrutura dos compostos A–E.

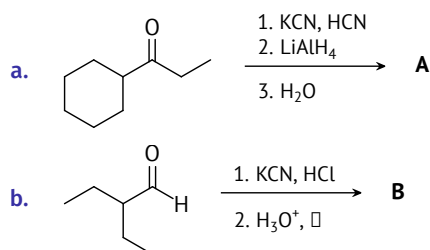
4K.13

Proponha uma rota de síntese para as seguintes transformações.



4K.14

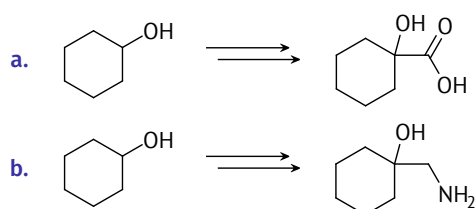
Considere as transformações a seguir.



Apresente a estrutura dos compostos A–B.

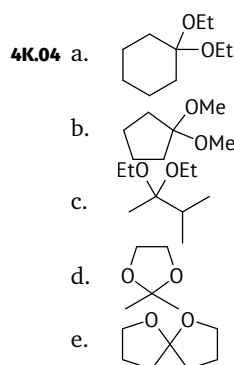
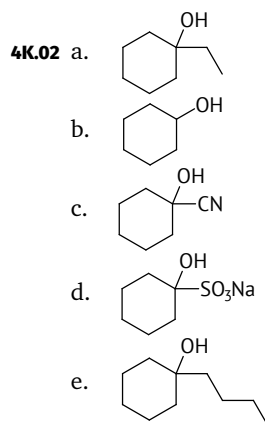
4K.15

Proponha uma rota de síntese para as seguintes transformações.



Gabarito: Nível 1

- 4K.01 a. $K_2Cr_2O_7$, H_2SO_4
 b. PCC
 c. 1. H_2 , Lindlar 2. O_3 3. Zn , H_2O
 d. 1. O_3 2. Zn , H_2O
 e. $(CH_3)_2CHCOCl$, $AlCl_3$



- 4K.05 a. 1. etilenoglicol, H_2SO_4 2. $NaNH_2$ 3. EtI 4. H_3O^+
 b. 1. etilenoglicol, H_2SO_4 2. $PhMgBr$ 3. H_3O^+
 c. 1. etilenoglicol, H_2SO_4 2. $LiAlH_4$ 3. H_3O^+

