

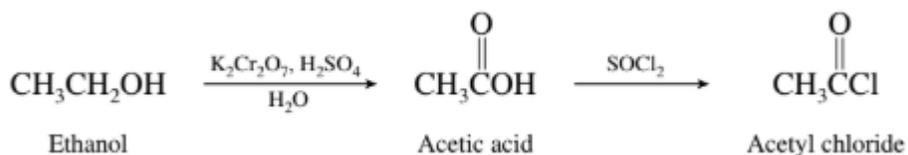
## 1. Derivados de Ácido Carboxílico.

1.1) Usando etanol como fuente única de todos los átomos de carbono, junto con cualquier reactivo inorgánico necesario, indique cómo podría prepararse cada una de las sustancias siguientes:

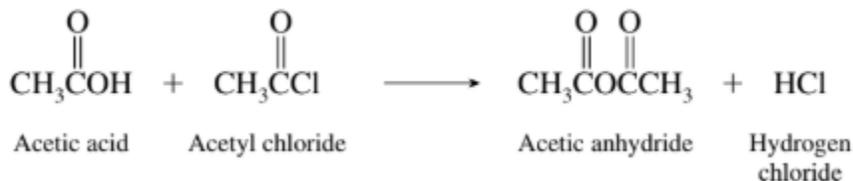
i) Cloruro de acetilo	ii) Anhídrido acético	iii) Acetato de etilo	iv) Bromo acetato de etilo
v) Acetato de 2-bromoetilo	vi-) Cianacetato de etilo	vii) Acetamida	viii) ácido 2-hidroxipropanoico

Sol:

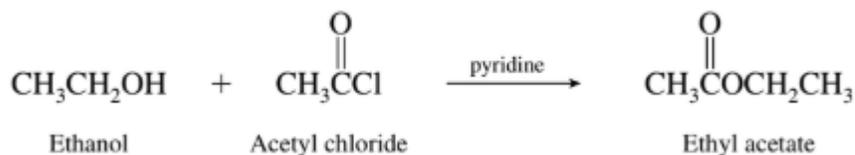
i) para la primera reacción se puede usar trióxido de cromo CrO<sub>3</sub>



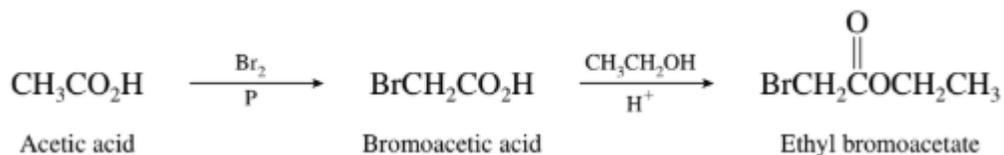
ii)



iii)

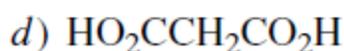
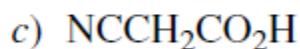
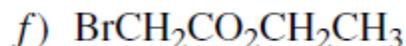
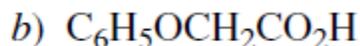
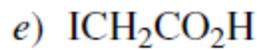
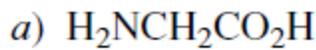


iv) La primera reacción se sustituye por 1. Br<sub>2</sub>, PBr<sub>3</sub>/2. H<sub>2</sub>O

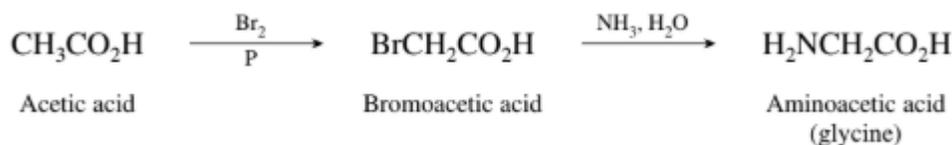


v)

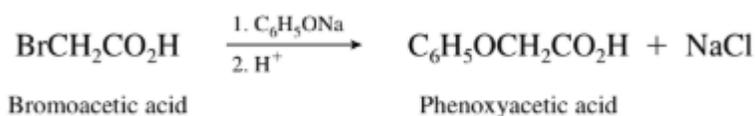




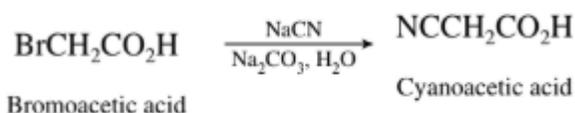
Solución:

 a) La primera reacción se puede hacer con  $\text{Br}_2$  en  $\text{PBr}_3$ 


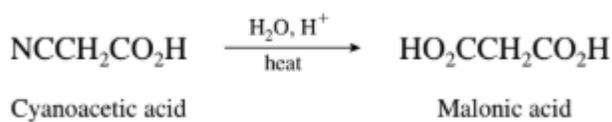
b) reacción de sustitución nucleofílica



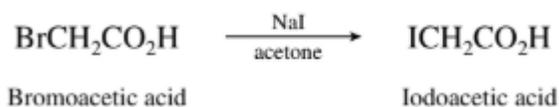
c)



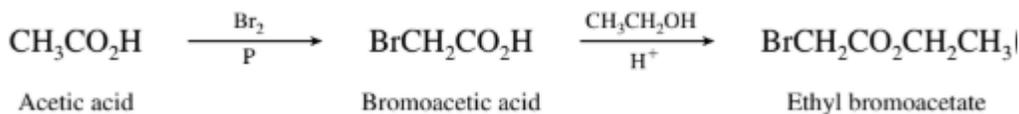
d)



e)

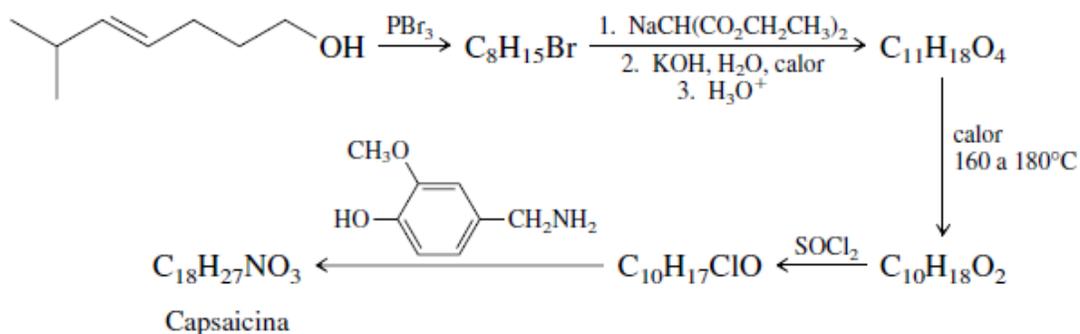


f)

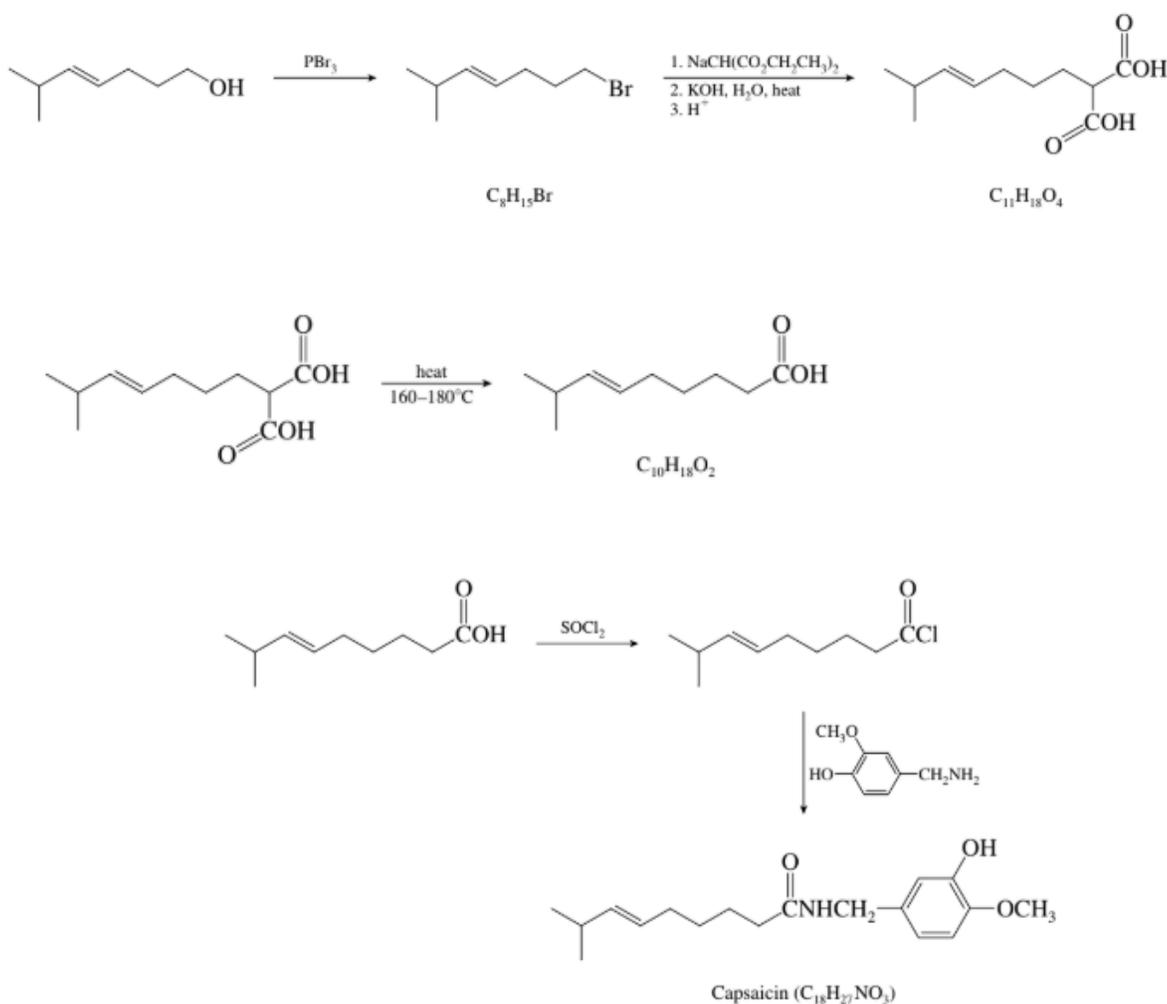


## 2. Reacciones de Sustitución del carbono alfa .

2.1) El sabor picante del pimiento de Indias se debe principalmente a una sustancia llamada *capsaicina*. Vea si puede deducir la estructura de la capsaicina con base en su síntesis en el laboratorio:

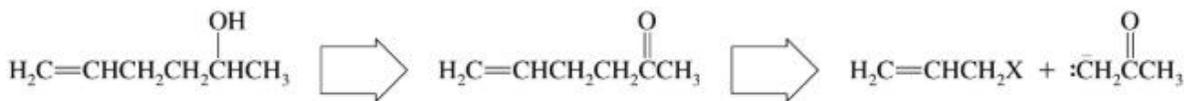


Sol:

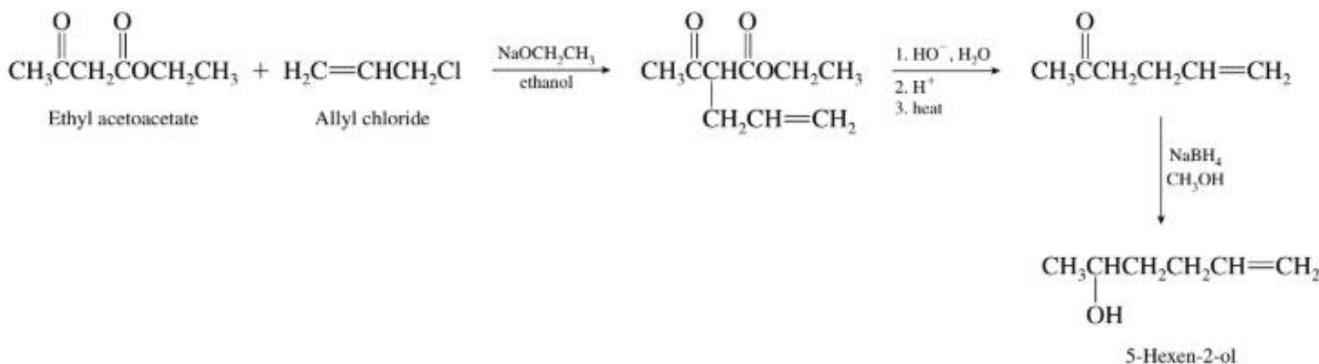


2.2) Sintetice 5-Hexen-2-ol a partir de propeno, debe utilizar es éster acetoacético .

Sol: 3

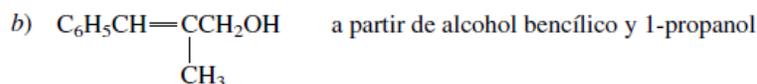
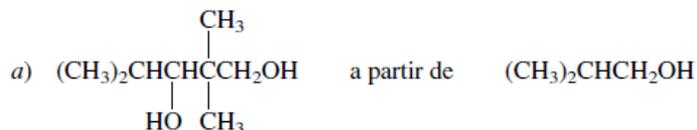


Therefore



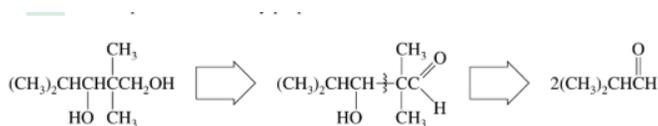
3) Reacciones de condensación en el carbono alfa.

Prepare cada uno de los compuestos siguientes partiendo de los materiales indicados, y con cualquier reactivo orgánico o inorgánico necesario:

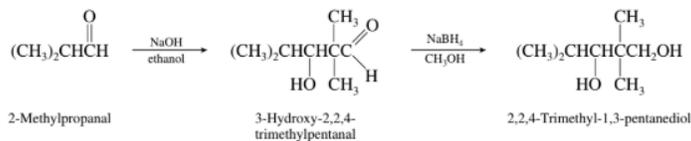


Sol:

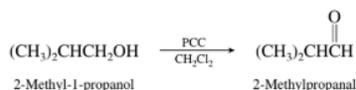
a)



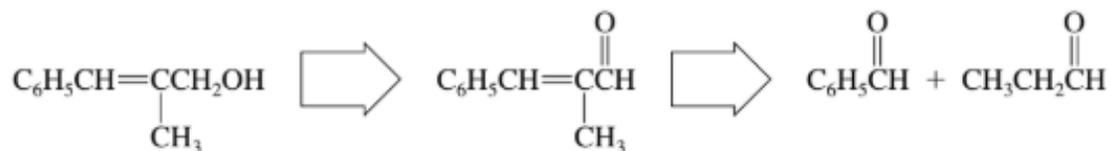
The synthetic sequence is



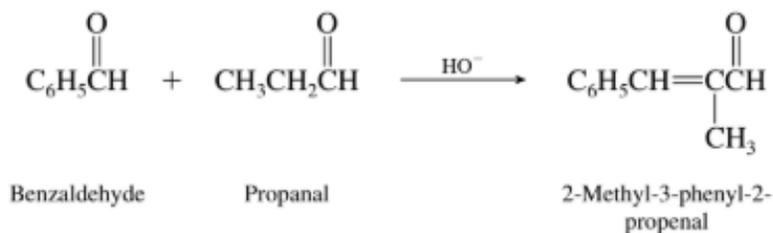
The starting aldehyde is prepared by oxidation of 2-methyl-1-propanol.



b)



The reaction scheme therefore becomes



Reduction of the aldehyde to the corresponding primary alcohol gives the desired compound.

