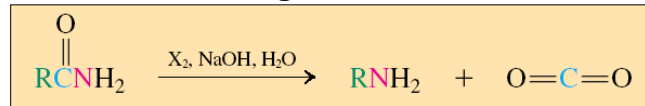
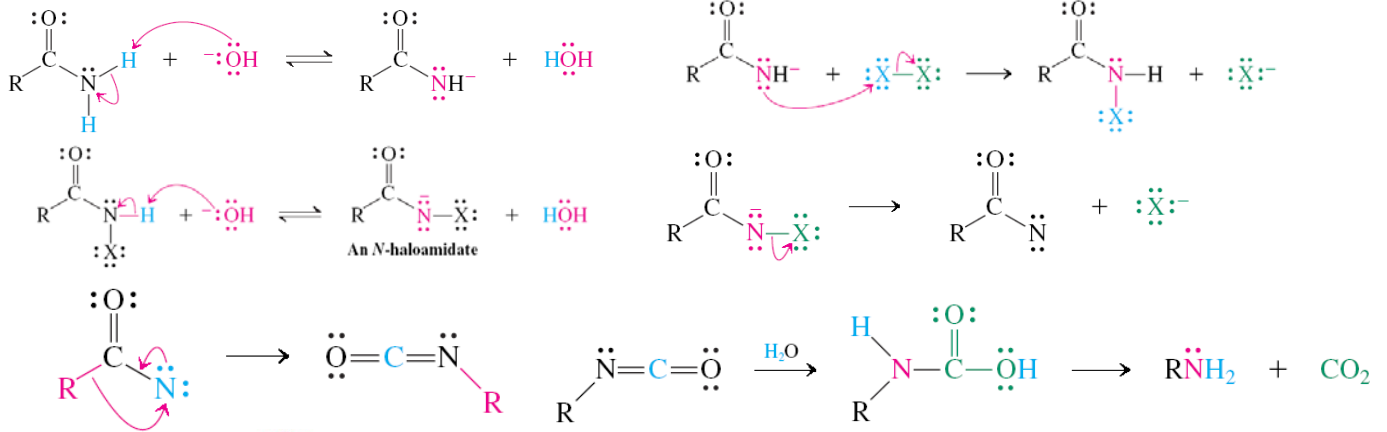


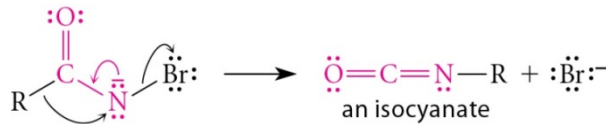
Hofmann Rearrangement



Mechanism



*Alternate arrows:



Alkanenitriles:

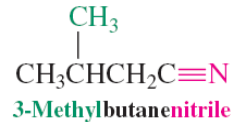
Considered derivatives of carboxylic acids

- 1) Carbon same oxidation state
- 2) Can be converted into carboxylic acid derivatives

-ic acid usually replaced with **-nitrile**

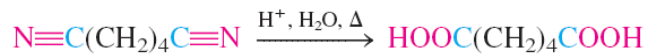


Propanenitrile
(Propionitrile)

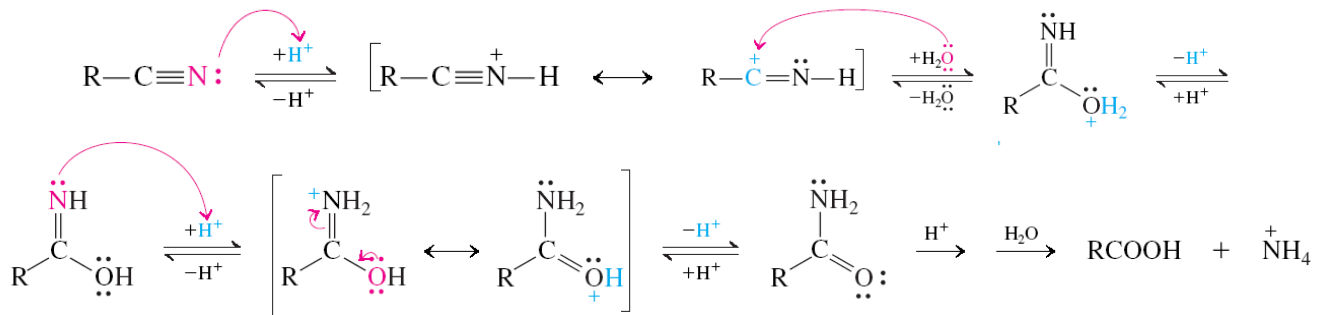


3-Methylbutanenitrile

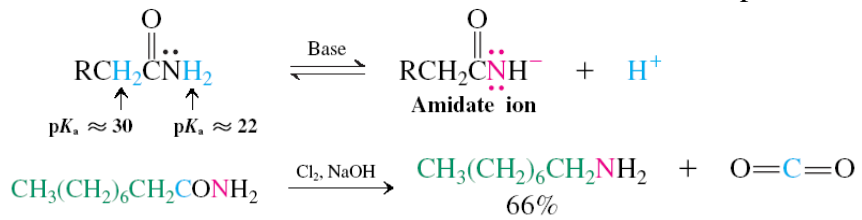
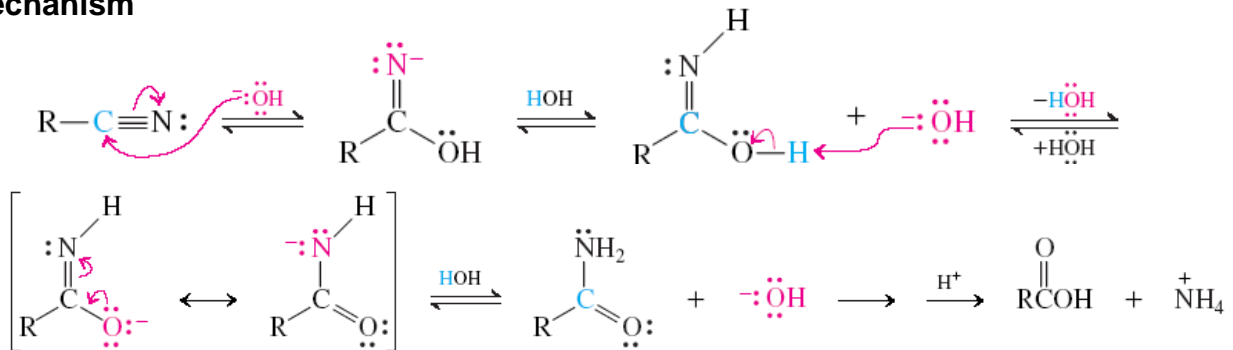
Nitriles + heat + acid/base → carboxylic acid



Acid Mechanism

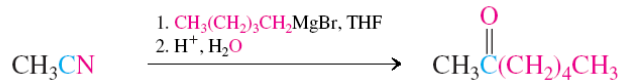
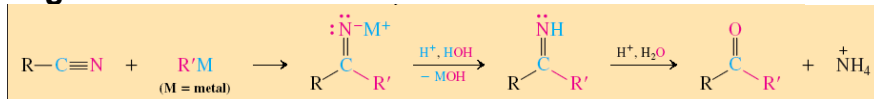


Base Mechanism

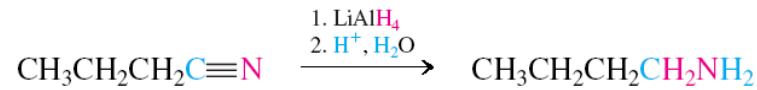


Nitrile Reactions

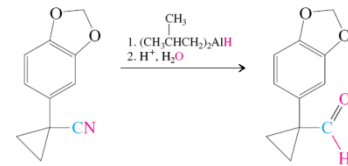
Organometallic + nitriles → ketones



Nitriles + LiAlH₄ → amines

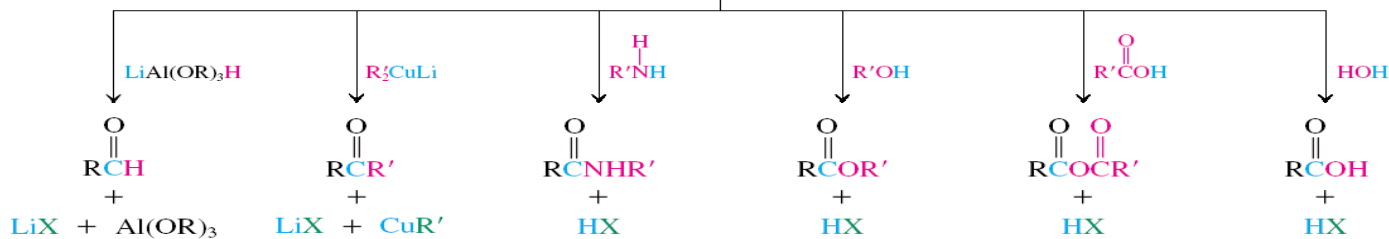


Nitriles + DIBAL → aldehyd

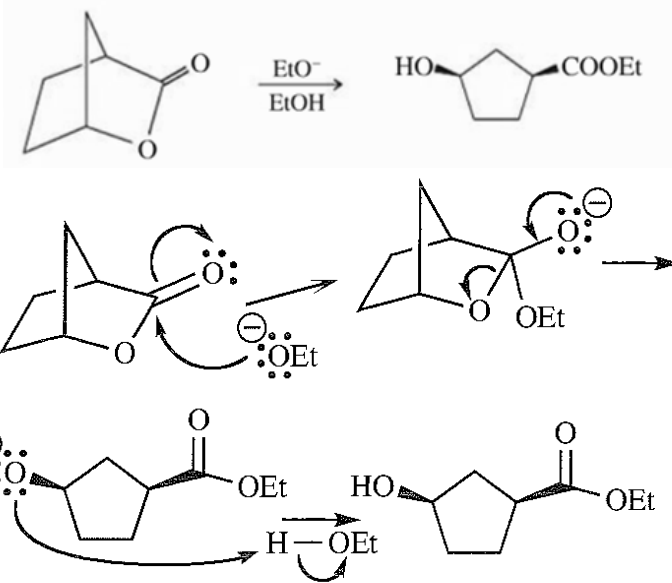
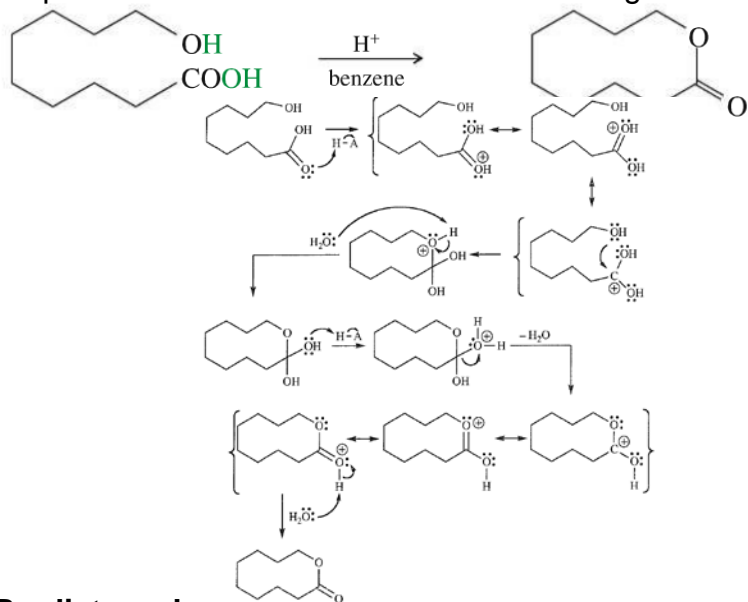


Exam Review

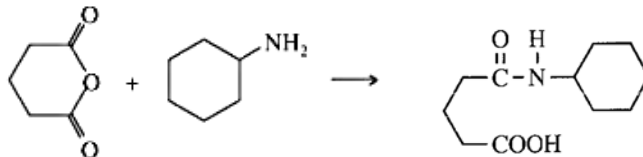
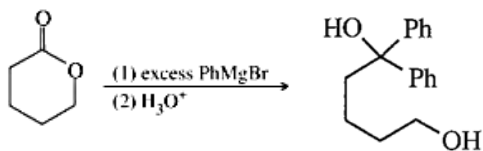
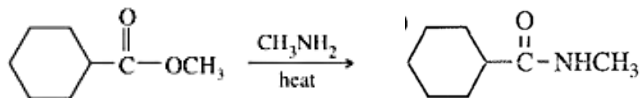
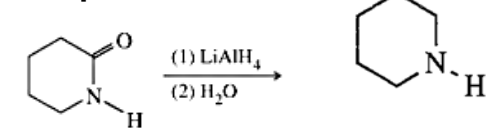
Give expected product for reaction with acid halide.



Propose a mechanism for one of the following reactions.



Predict products



Synthesis

