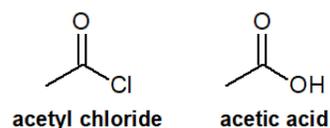


## 22.14: SOLUTIONS TO ADDITIONAL EXERCISES

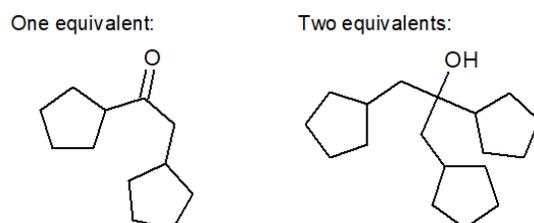
### General Review

22-1

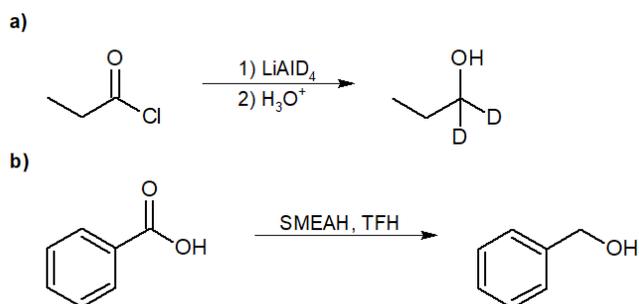
Possible set of reactants:



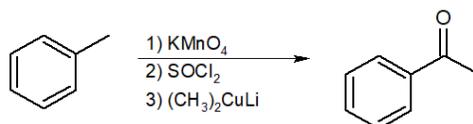
22-2



22-3

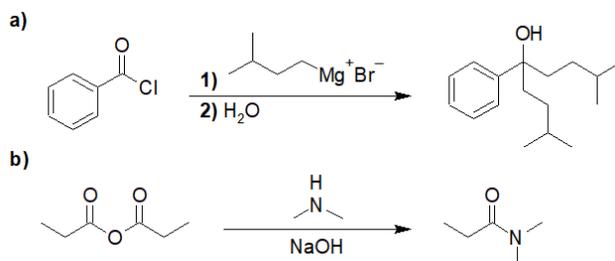


22-4

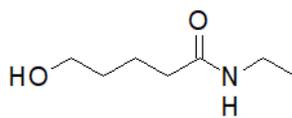


### Interconversion of Acid Derivatives by Nucleophilic Acyl Substitution

22-5:



22-6:



**N-ethyl-5-hydroxypentanamide**

22-7:

Answer: B

### Transesterification

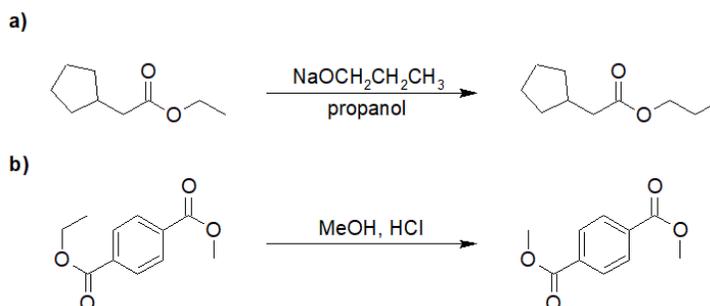
22-8:

Answer: D

22-9:

Under acidic conditions, the carbonyl oxygen atom is protonated, making it a better electrophile for the reaction to occur. Under basic conditions, the alcohol we are trying to add is deprotonated, making it a better nucleophile.

22-10:

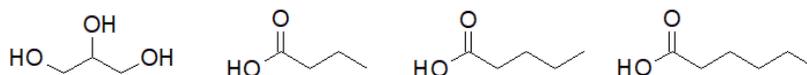


### Hydrolysis of Carboxylic Acid Derivatives

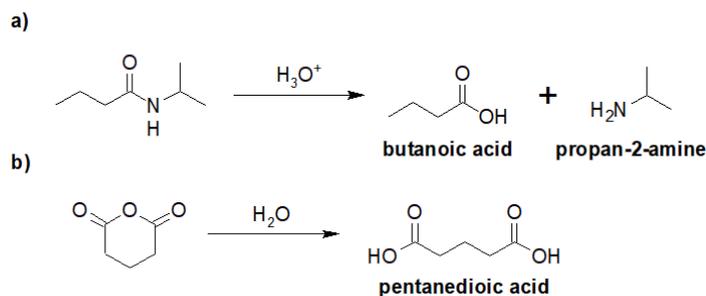
22-11:



22-12:

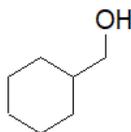


22-13:

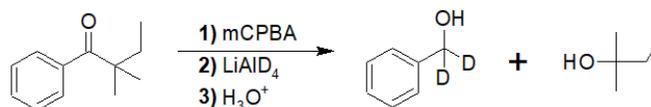


### Reduction of Acid Derivatives

22-14:



22-15:

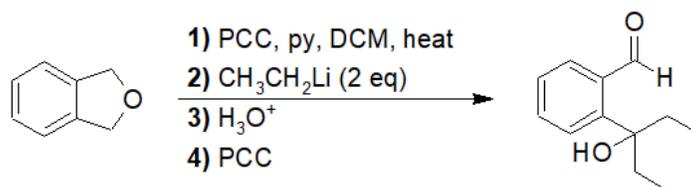


22-16:

Answer: C

Reactions of Acid Derivatives with Organometallic Reagents

22-17:

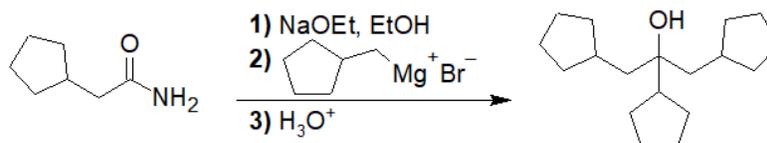


22-18:

Answer: C

22-19:

A possibly better route of synthesis:



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