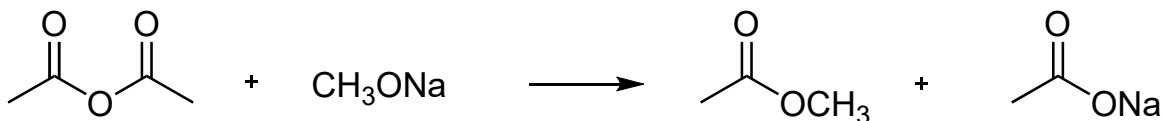
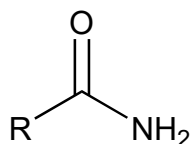


5A) (6 pts) Provide a complete mechanism for the reaction shown below. Pay close attention to details, including lone pairs, formal charges and the use of curved arrows.

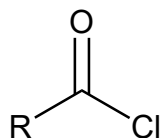


5B) (6 pts) All carbonyl groups are electrophilic, but some are better electrophiles than others. Some carboxylic acid derivatives are more reactive than ketones, and others are less reactive. For each compound below, determine whether it is MORE or LESS reactive than a ketone, and explain your choice. **Use drawings to support your answer.**

Is the following compound MORE or LESS reactive than a ketone? Explain briefly.



Is the following compound MORE or LESS reactive than a ketone? Explain briefly.



5C) (6 pts) Which is the **stronger acid** (X or Y or neither)? Explain, using appropriate drawings to support your answer.

