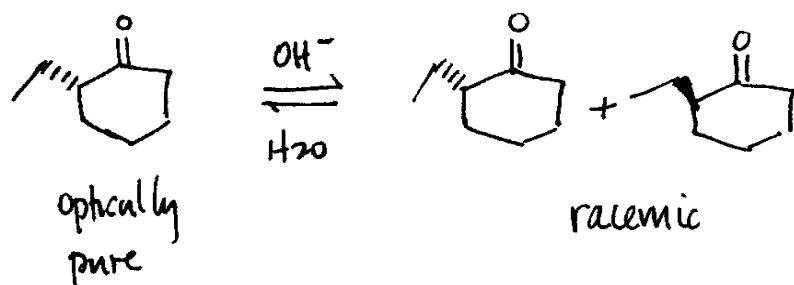


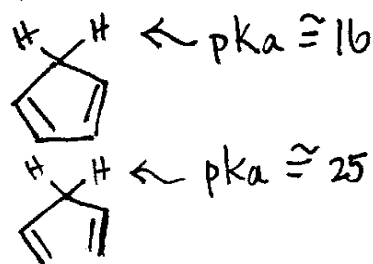
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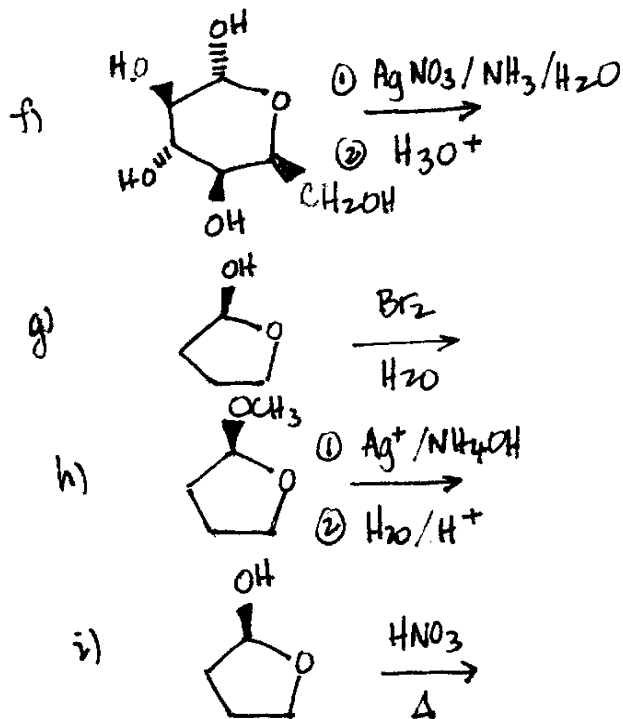
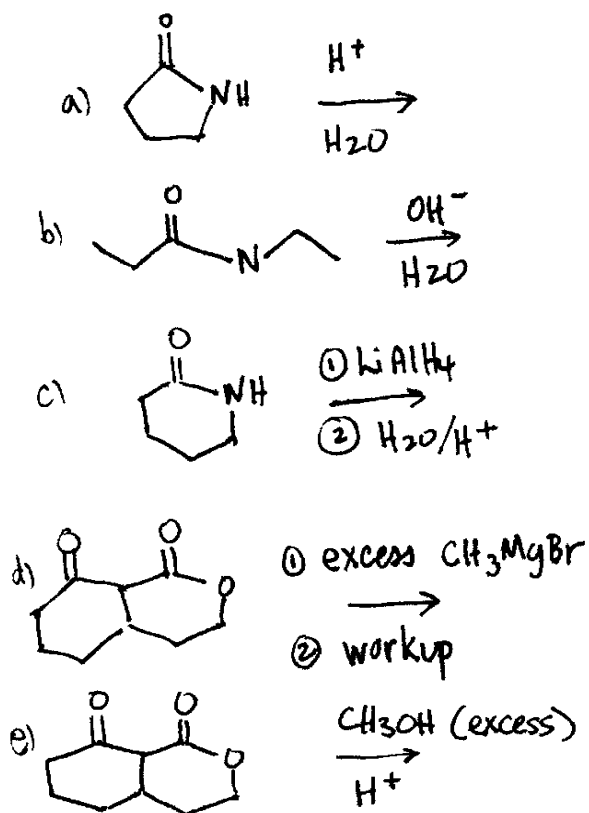
① Demonstrate the Mechanism:



② Explain the differences in pK_a of the following two molecules.

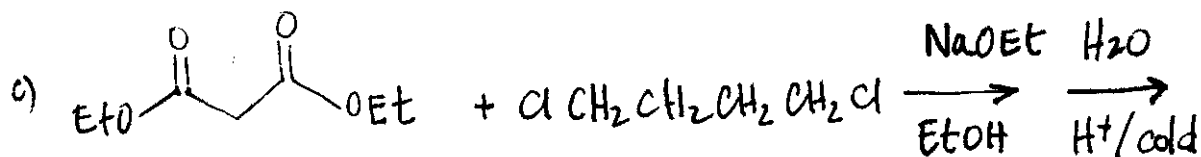
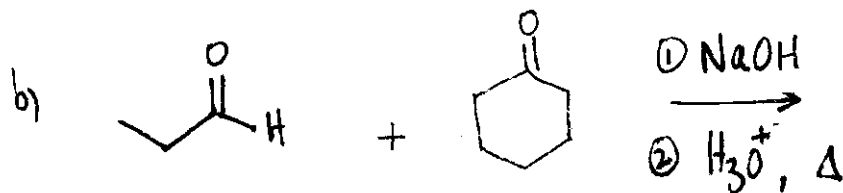
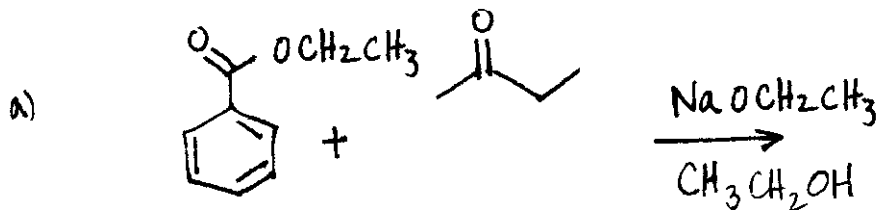


③ Write The Products:

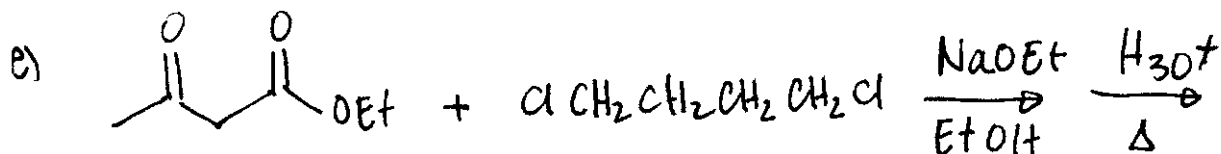
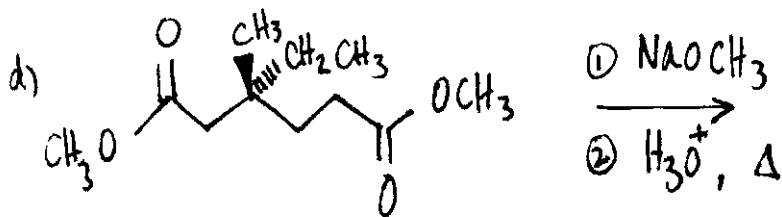


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④ Show all possible products and identify stereochemical relationships if any

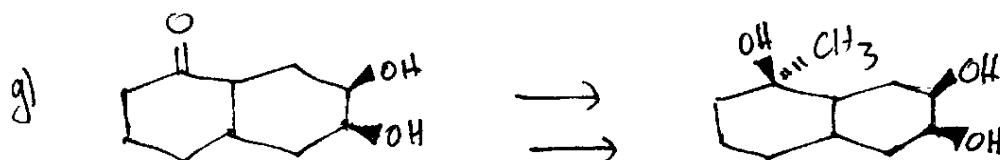
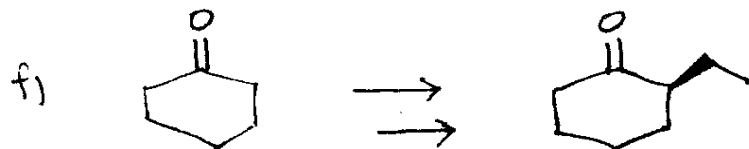
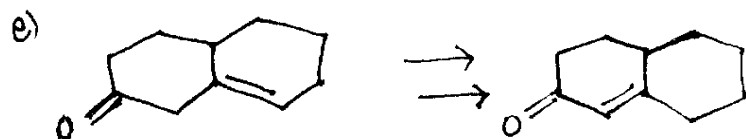
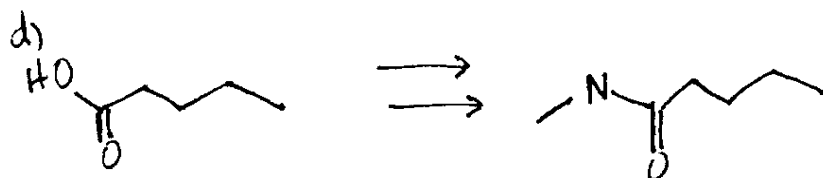
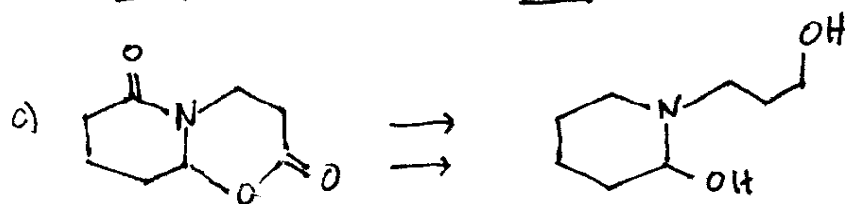
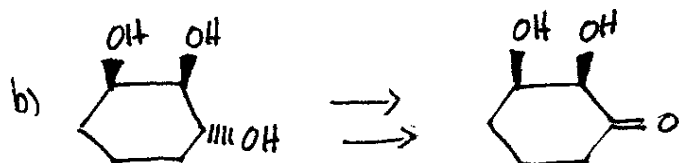


Also, identify how things would be different if the last product were heated.



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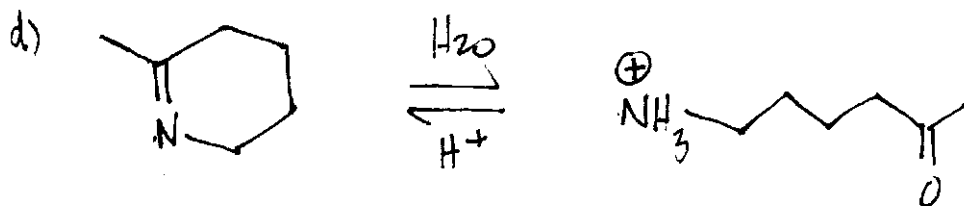
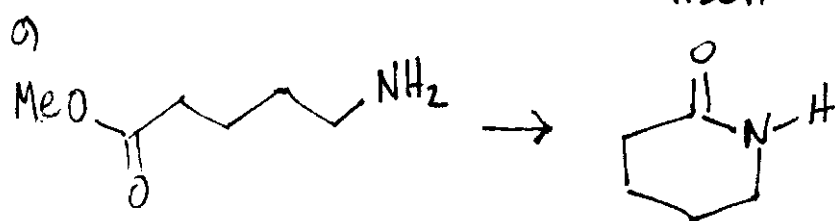
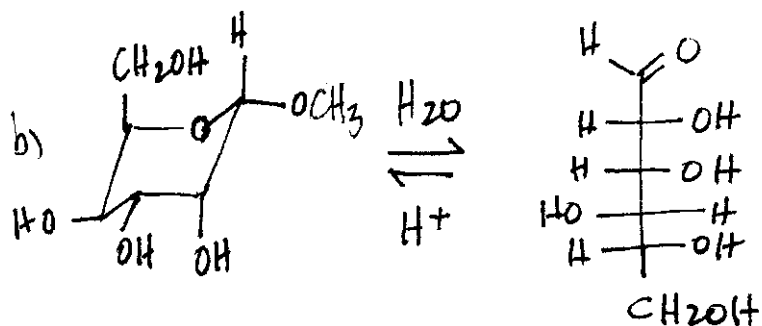
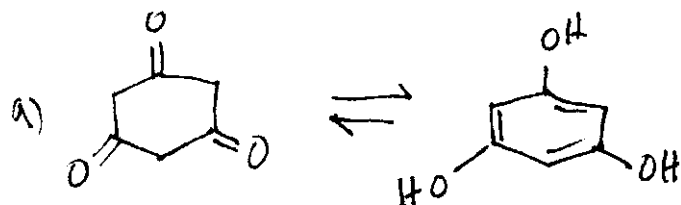
5) Provide a synthesis



What happens if you treat the last product w/ H_3PO_4 (conc)?

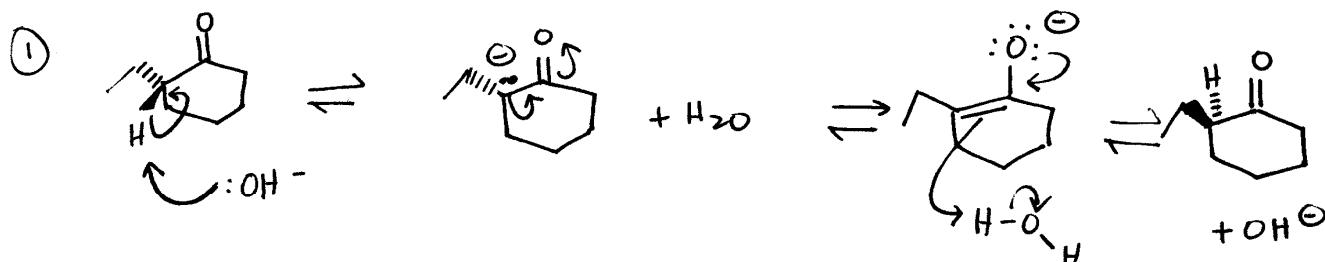
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6 Show the mechanism

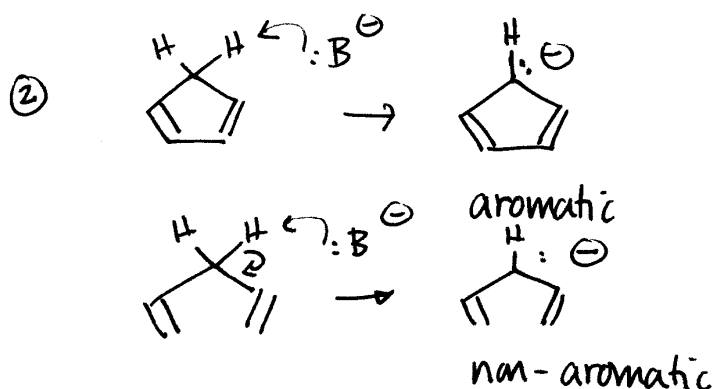


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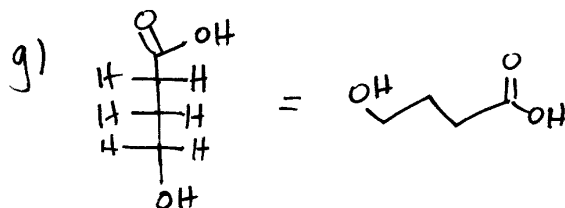
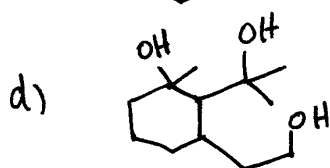
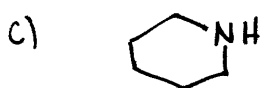
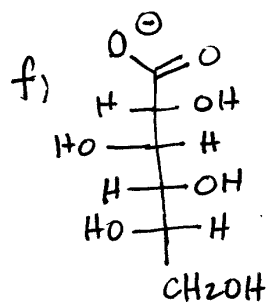
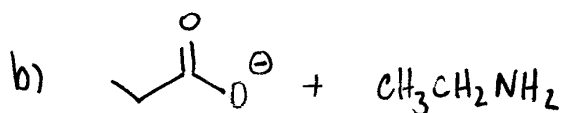
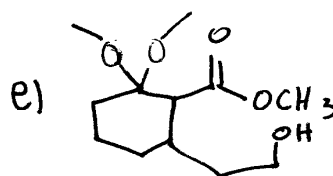
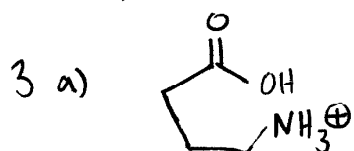
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Eventually an equilibrium will form by this process between the R and S isomers so that there is a racemate.



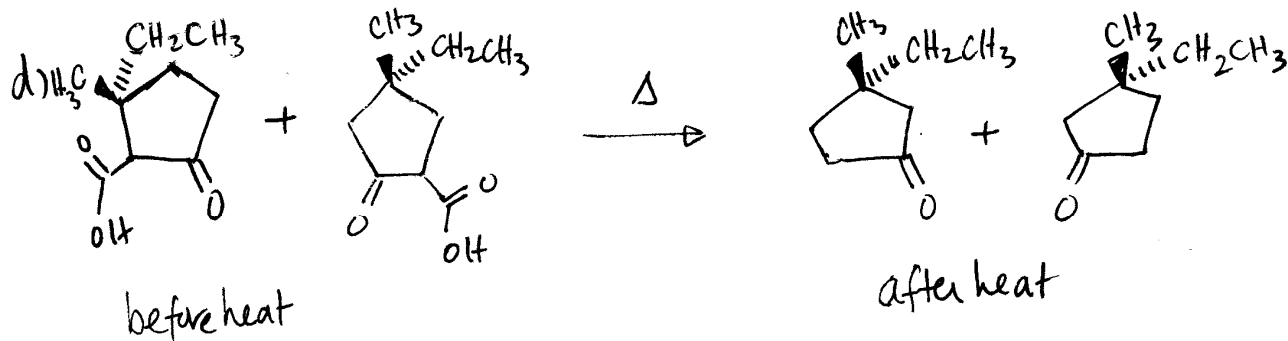
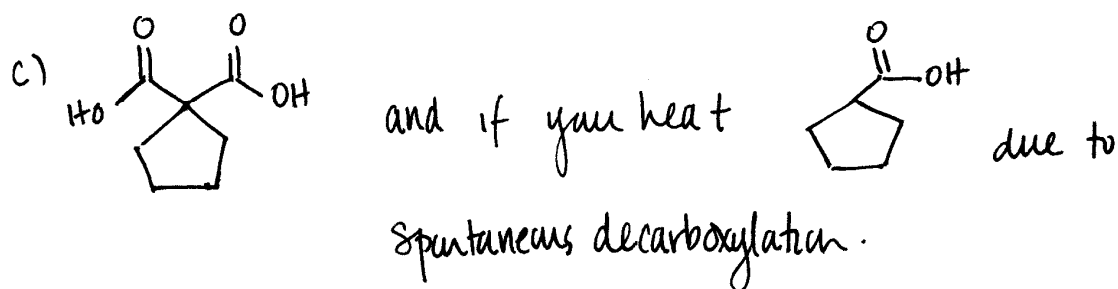
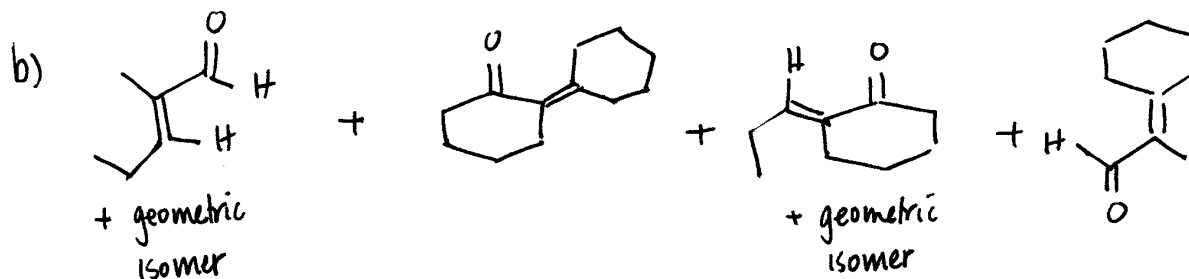
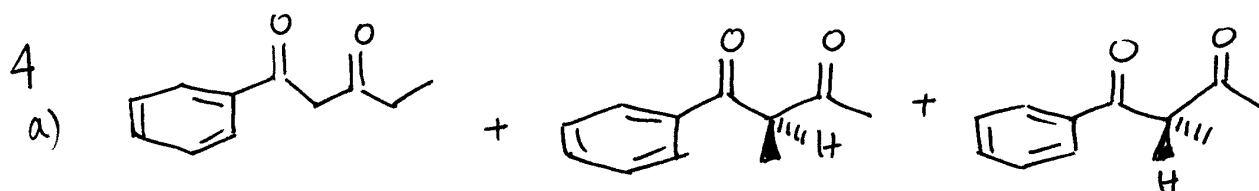
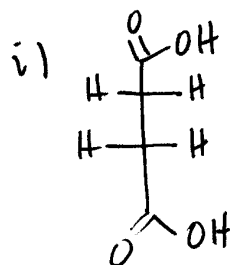
Because the aromatic product is more stable, it is favoured



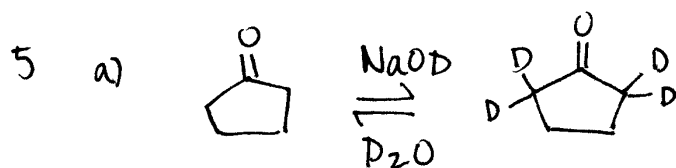
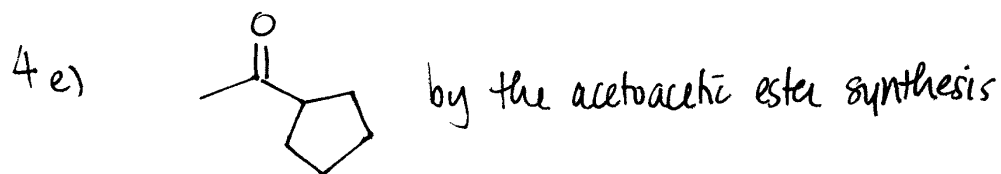
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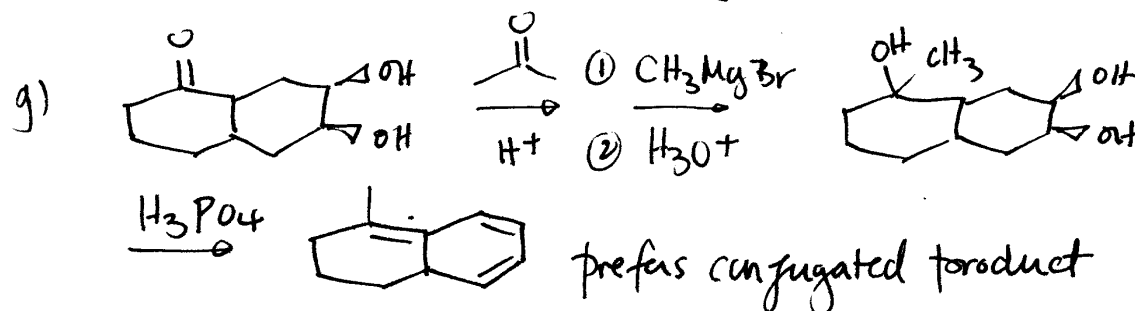
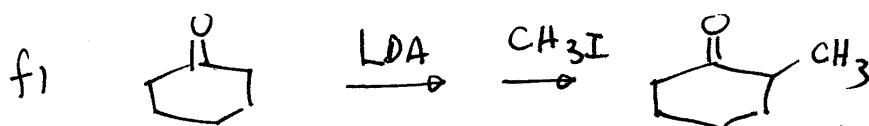
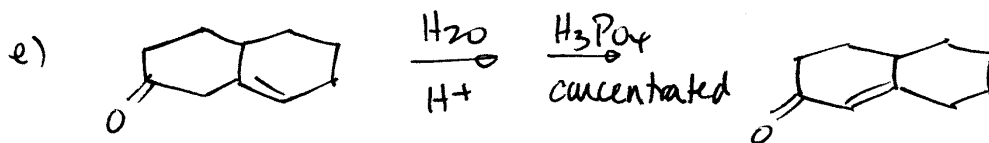
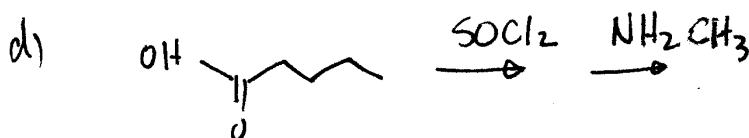
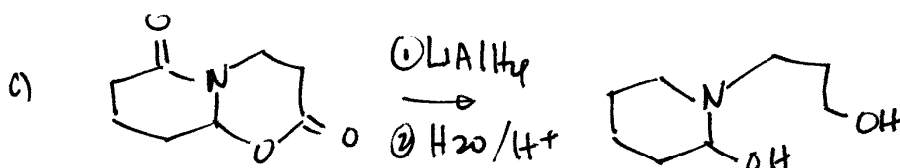
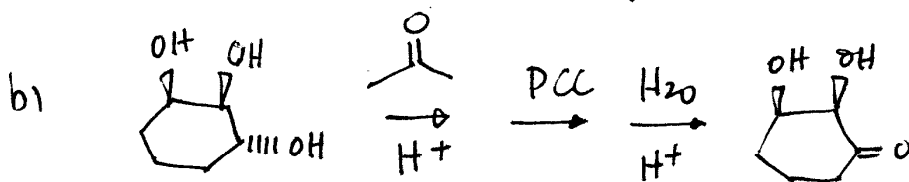
3 h) no rxn



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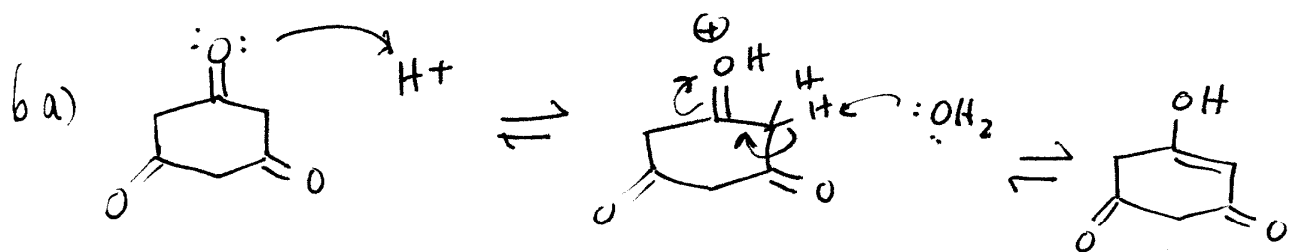


Since NaOD is catalytic, NaOH is fine also.

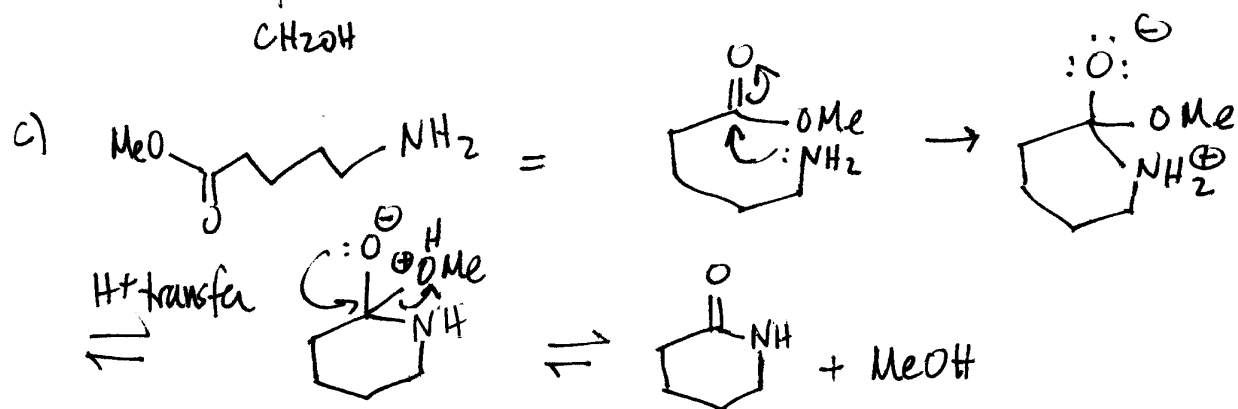
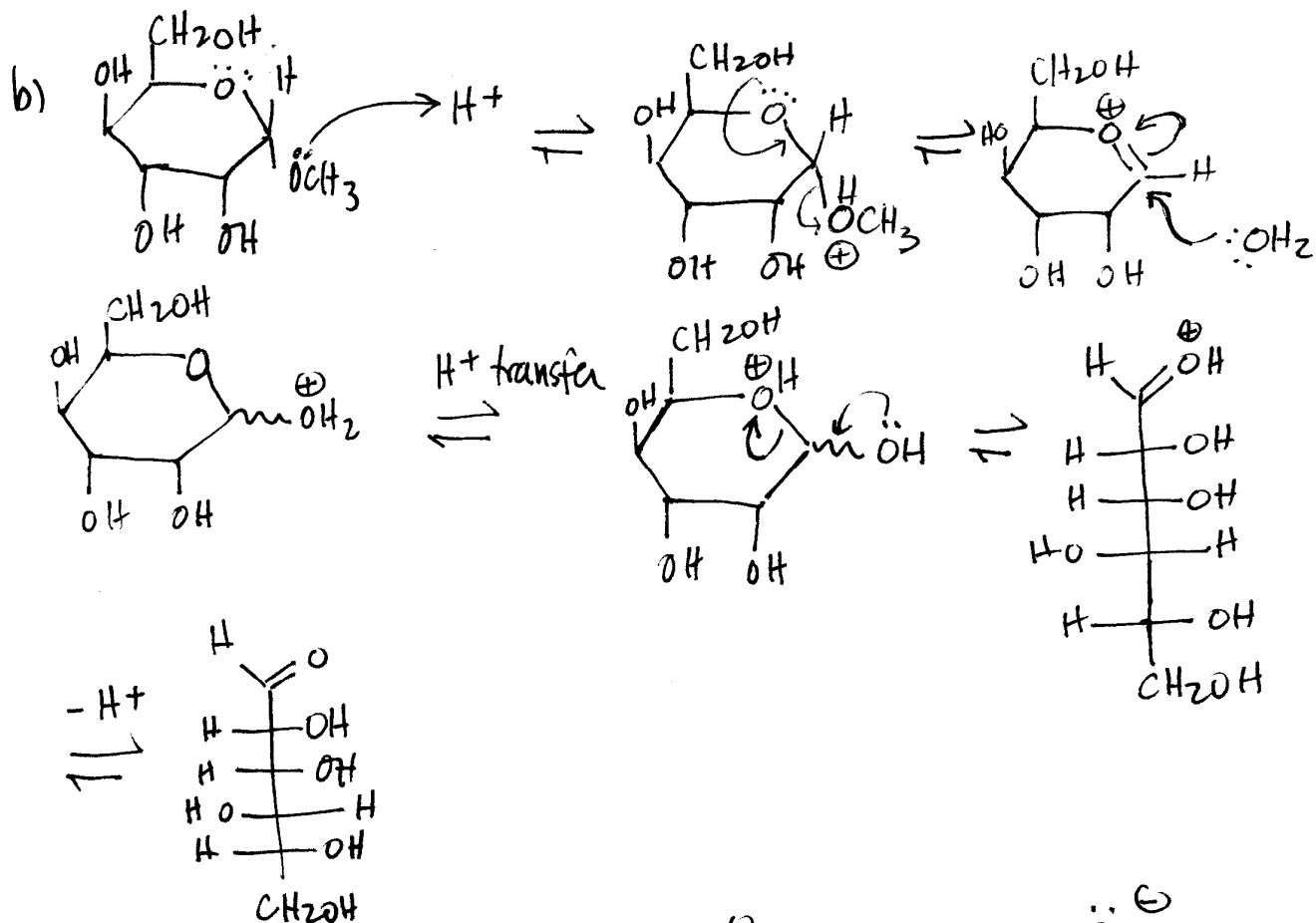


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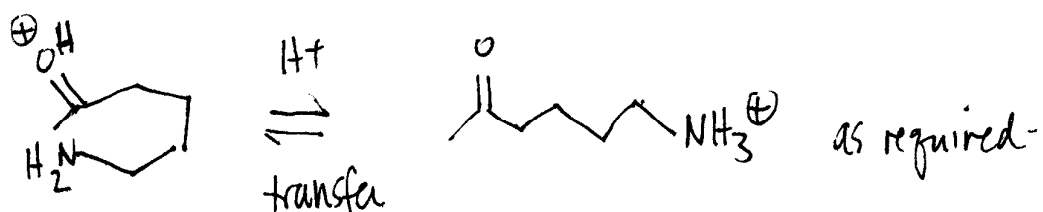
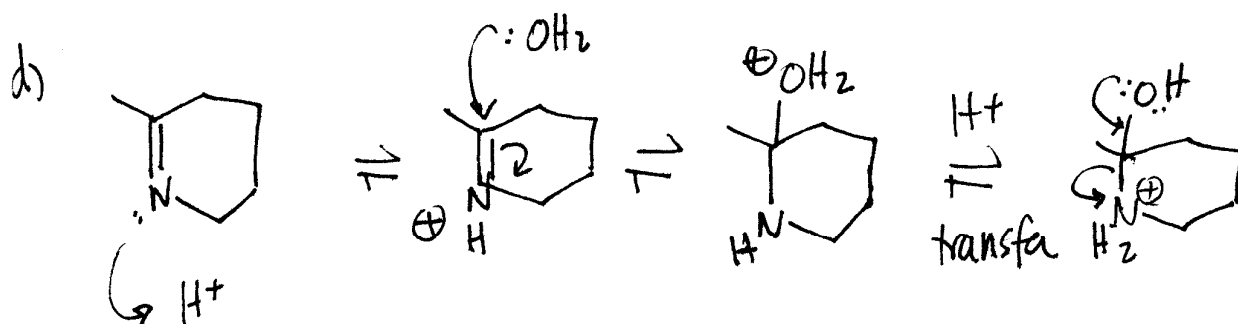


repeat process at two other carbonyl groups for product



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Note: on your exam make sure to show proton transfers out in explicit format. For example, from above...

