

Name: _____

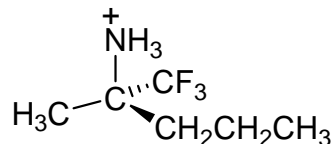
If you do **not** wish to have your graded exam placed outside my office please check here _____

1-15) are True or False (15pts)

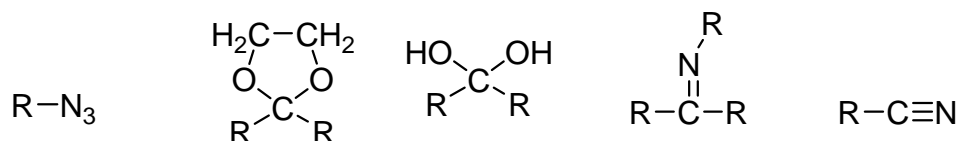
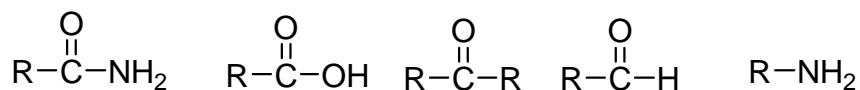
- 1) Aldehydes can undergo nucleophilic addition reactions.
- 2) Amines can act as nucleophiles because of the nitrogen atom which has a lone pair of electrons.
- 3) Amines can act as bases because of the nitrogen atom which has a lone pair of electrons.
- 4) Aldehydes can undergo condensation reactions.
- 5) Wittig reactions generate alkenes.
- 6) An azide ion contains 3 nitrogens.
- 7) Diazonium salts contain three nitrogens, and one of them is positively charged.
- 8) Cyclic acetals are formed when a diol reacts with a carbonyl compound under acidic conditions.
- 9) Hoffman rearrangements use base and a halogen.
- 10) Aldehydes are more sterically hindered than ketones.
- 11) Tollen's reagent reacts with aldehydes to give a silver mirror.
- 12) Wolff-Kishner reduction can be described as 'deoxygenation'.
- 13) Clemmensen reduction can be described as 'deoxygenation'.

14) Exhaustive methylation works best with an excess of the methylating reagent.

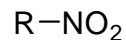
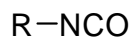
15) This ion is chiral:



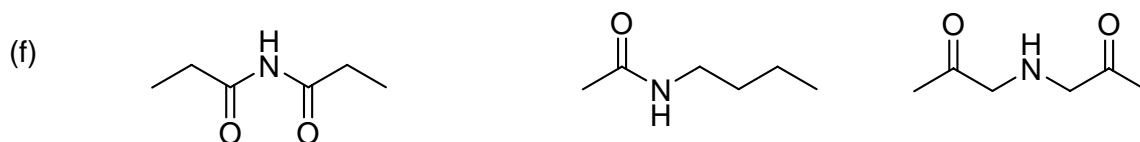
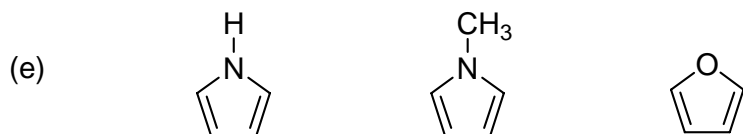
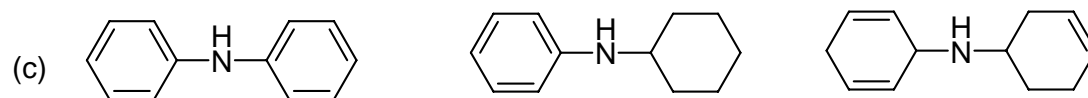
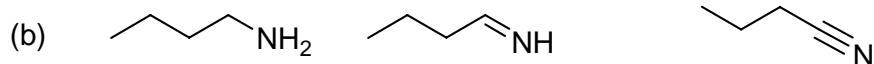
16) (10pts) Name the general class of organic compound that each of these molecules belong to.



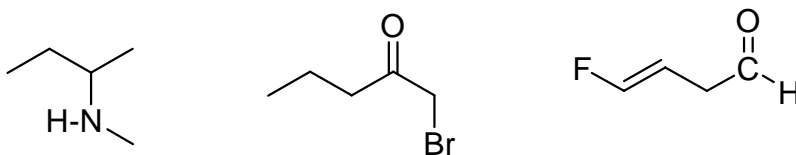
17) Draw the Lewis structure (*including lone pairs*) for the following molecules. (6pts)



18) Circle the **strongest** base in the following threesomes. (12pts)

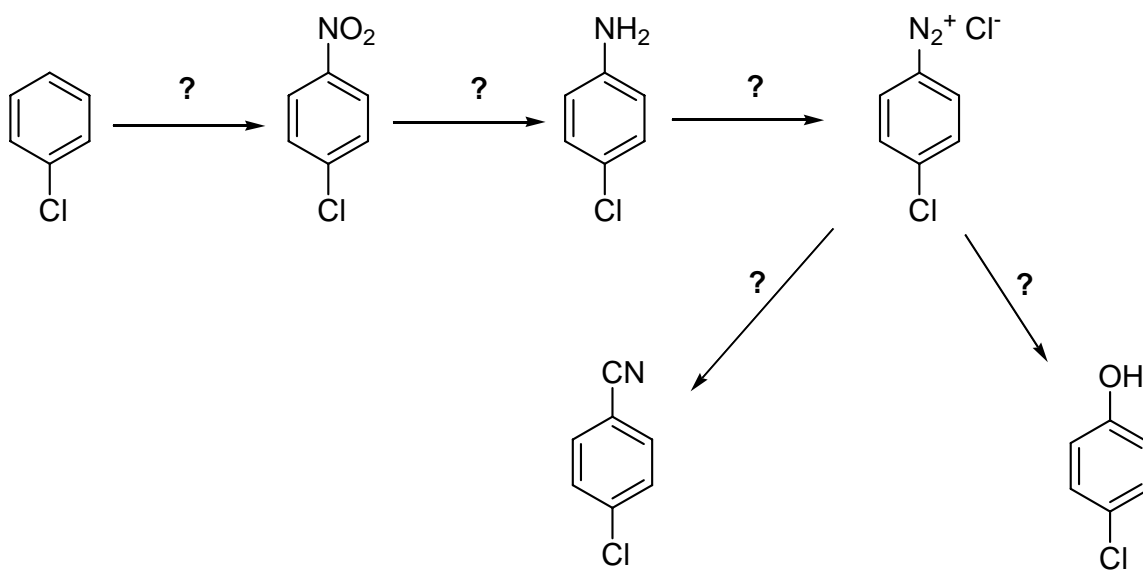


19) Name the following compounds in IUPAC acceptable terms. (12pts)

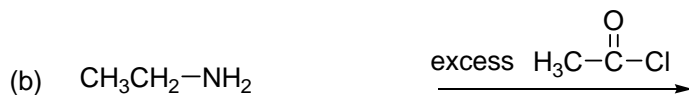
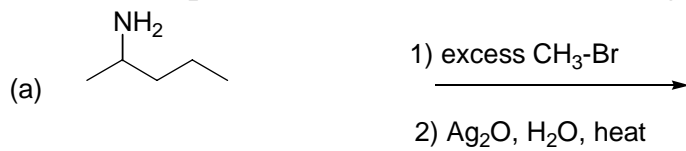


20) Write the mechanism for the reaction of a SECONDARY AMINE with an ACID CHLORIDE to generate an AMIDE and H-Cl. (6pts)

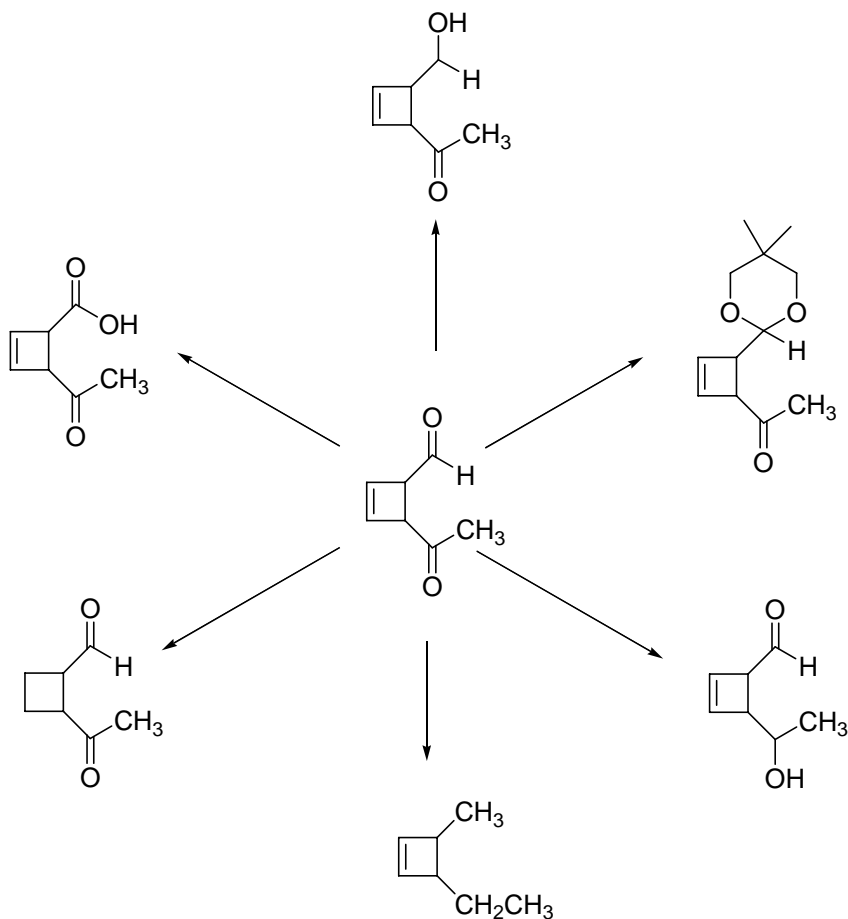
21) Fill in the question marks with suitable reagents. (15pts)



22) Give the products formed in the following reactions. (6pts)



23) Give reagents for the following transformations. (18pts)



***Bonus question* (up to 4pts)**

Write the mechanism for the reaction of *hydroxylamine* reacting with a *ketone* (in the presence of acid) to generate an *oxime*.

Name: _____

SONYA MIND?

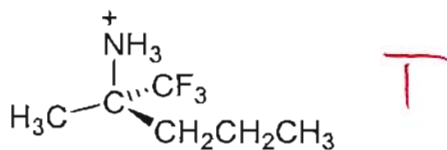
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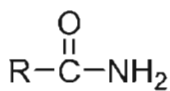
- 1) Aldehydes can undergo nucleophilic addition reactions. T
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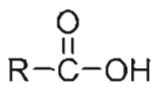
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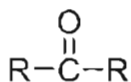
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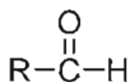
AMIDE



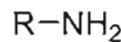
CARBOXYLIC ACID



KETONE



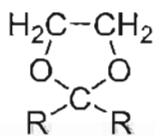
ALDEHYDE



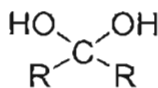
AMINE



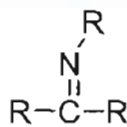
AZIDE



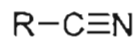
CYCLIC ACETAL



KETONE HYDRATE

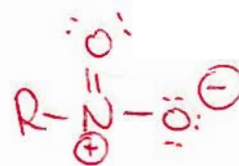
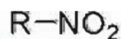
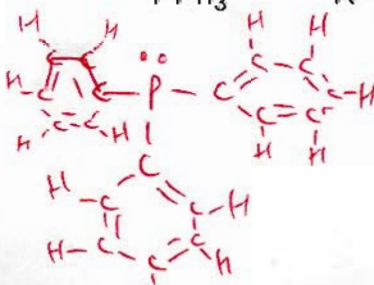
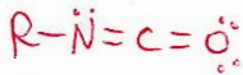


IMINE

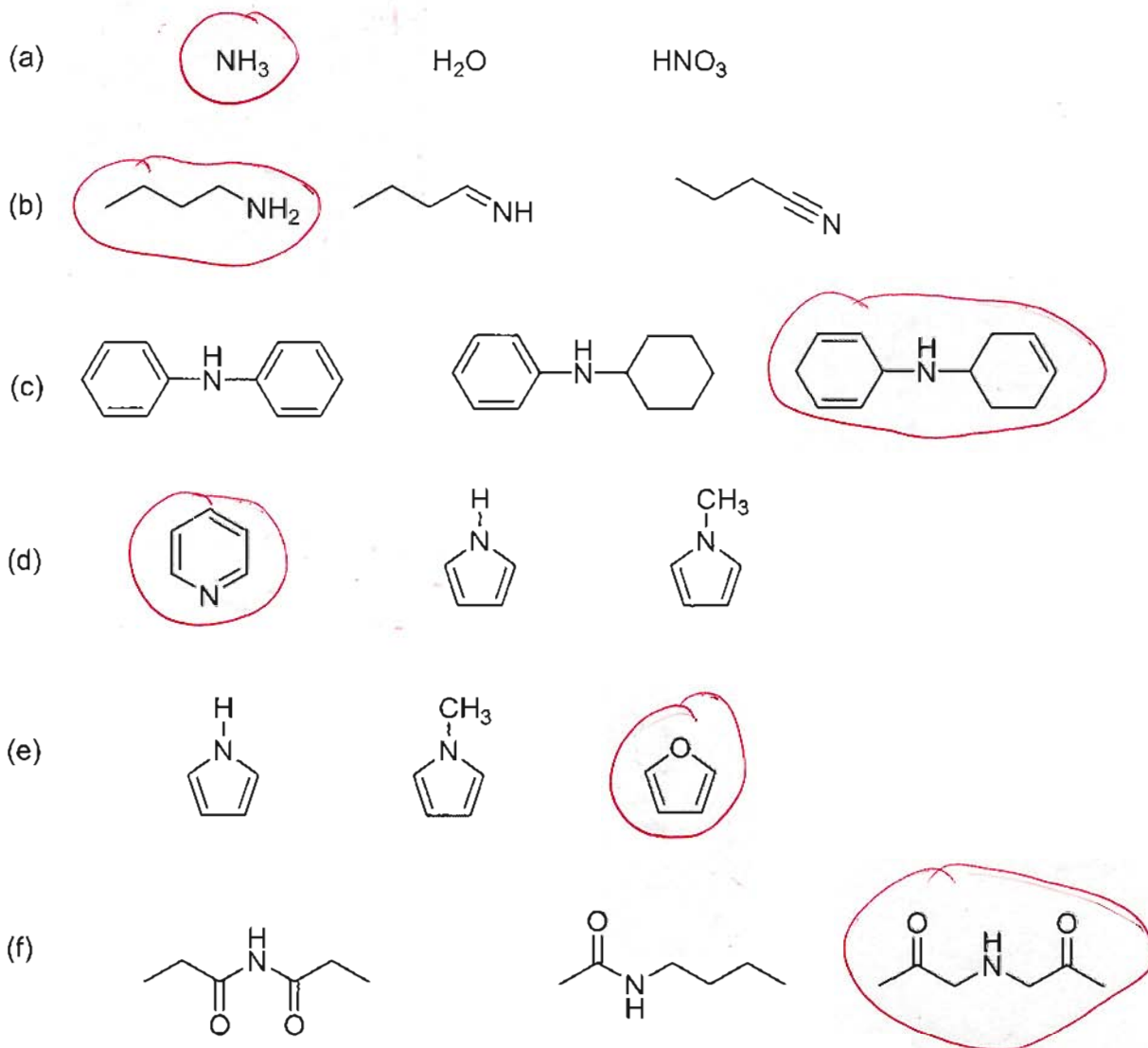


NITRILE

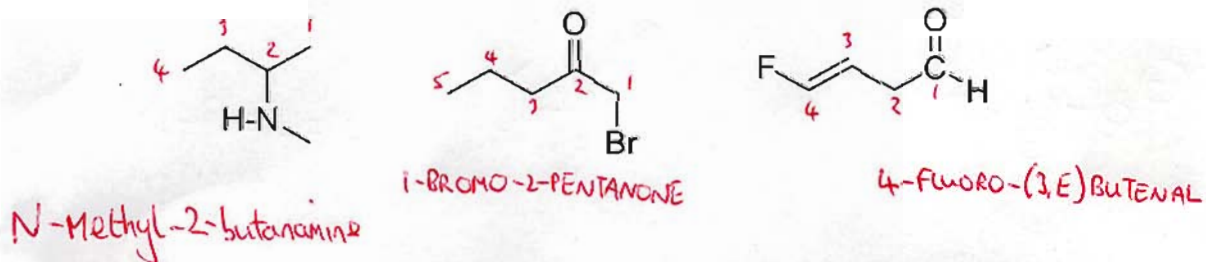
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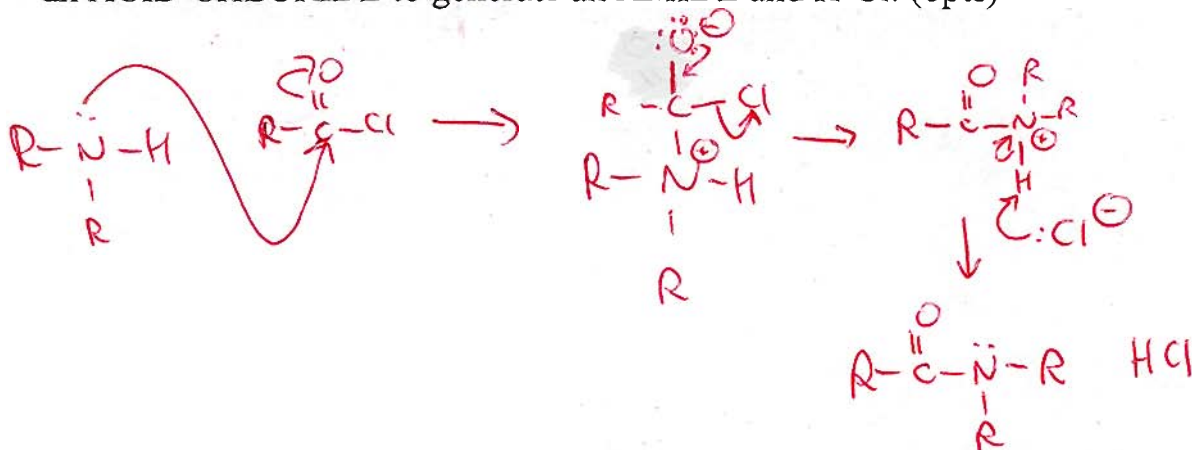
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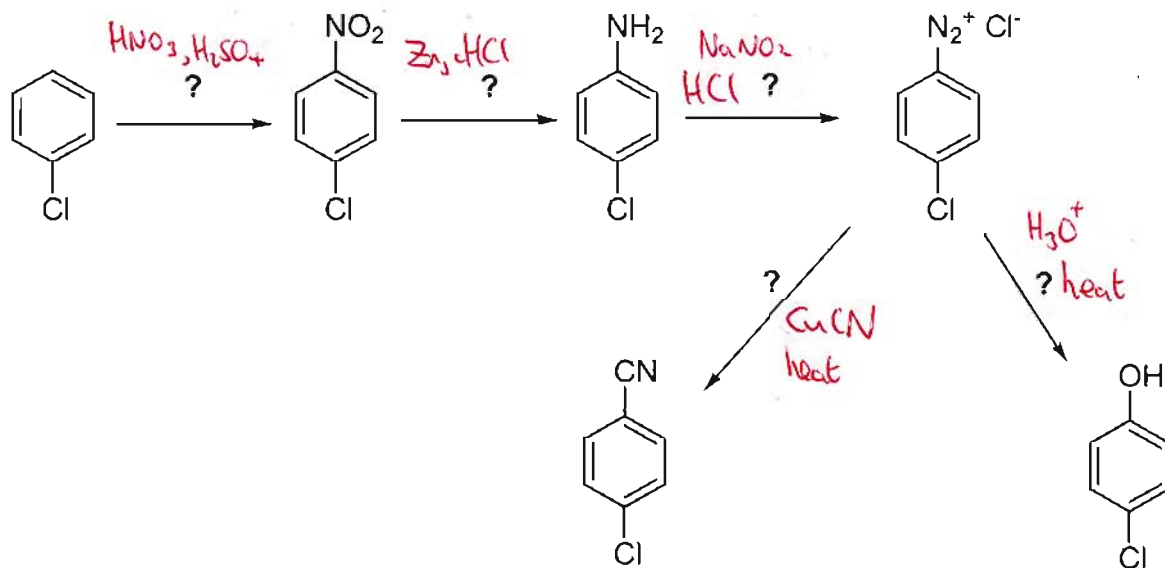
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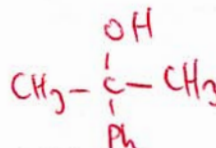
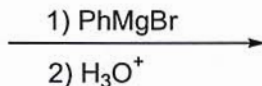
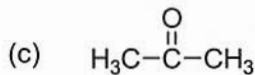
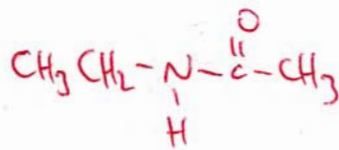
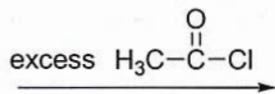
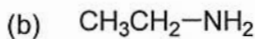
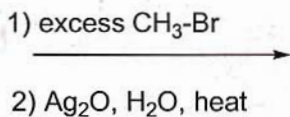
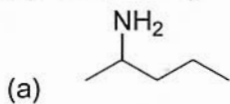
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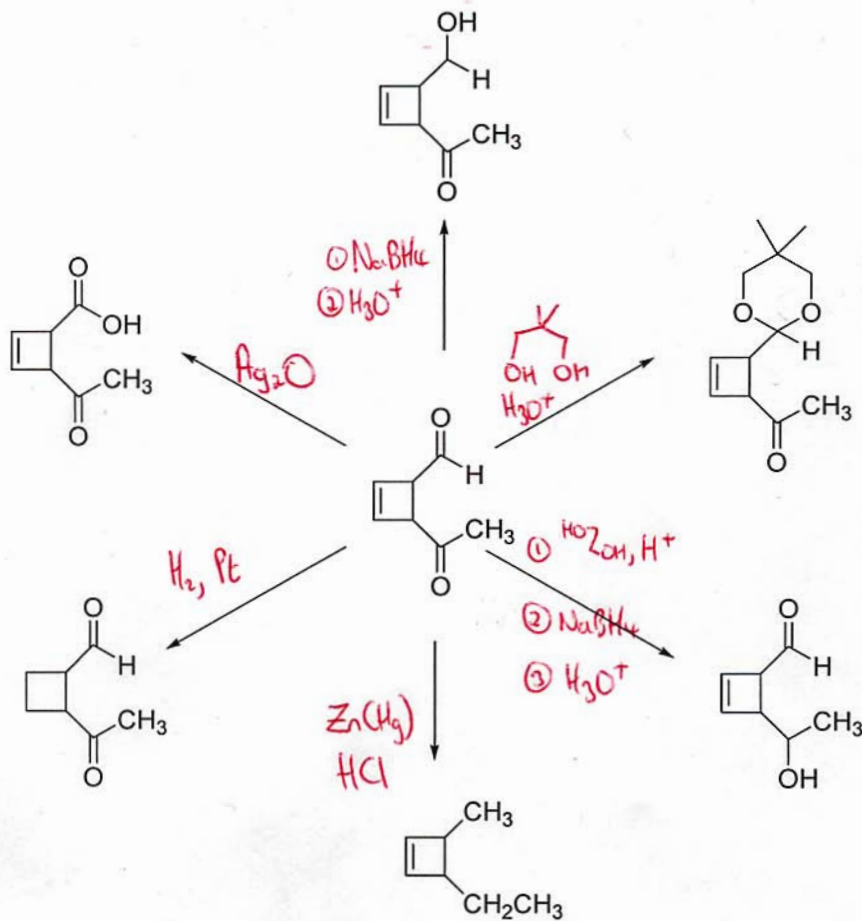
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