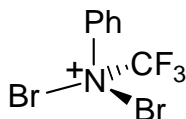


NAME: \_\_\_\_\_

To **not** have your graded script placed outside my office please check this box **(1-10) Are True or False**

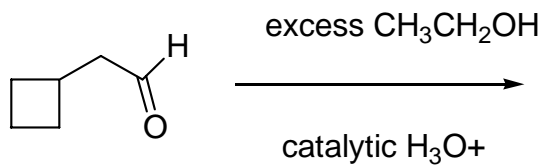
- 1) Amines can act as bases.
- 2) Amines show nucleophilic character because of the nitrogen atom which has a lone pair of electrons.
- 3) Aldehydes can undergo nucleophilic addition reactions.
- 4) Tollen's reagent oxidizes aldehydes to carboxylic acids.
- 5) Wolff-Kishner reduction can be described as 'oxidation'.
- 6) Clemmensen reduction can be described as 'deoxygenation'.
- 7) Ketones are more sterically hindered than aldehydes.
- 8) Cyclic acetals are formed when a carbonyl compound reacts with a diol under acidic conditions.
- 9) This ion is chiral:



- 10) Hoffman eliminations create a new  $\pi$  bond.

11-12) Give the products for the following reactions (and indicate stereo/regiochemistry where applicable).

11)

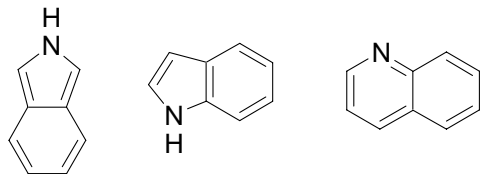


12)

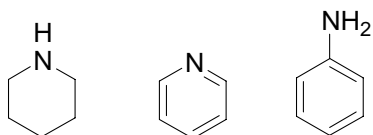


13-15) Circle the **stronger** base in each set.

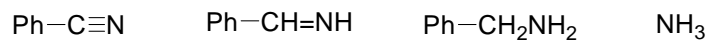
13)



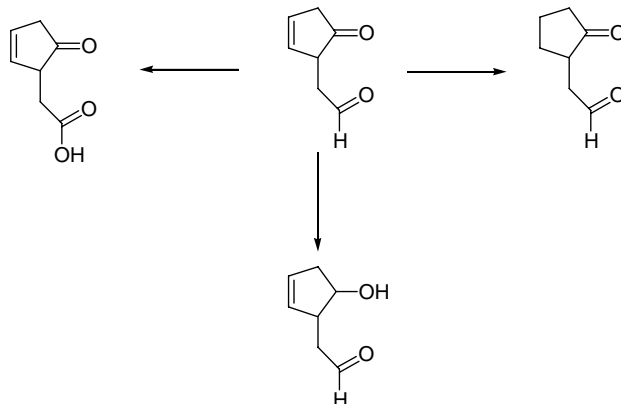
14)



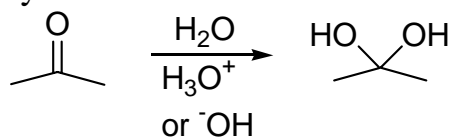
15)



16-18) Give reagents and conditions for the following transformations.

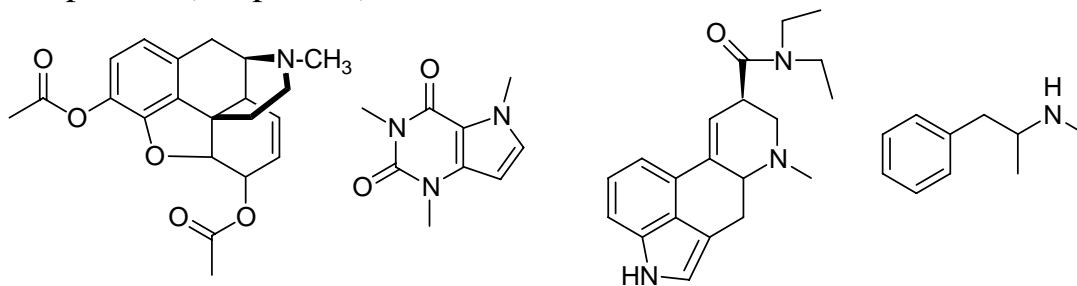


19 and 20) Draw the mechanisms for both the acid and base catalyzed hydration of acetone to form its hydrate.



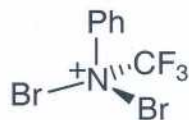
**\*BONUS QUESTION for up to 2 points \***

Name the following (addictive and psychoactive) nitrogen containing compounds (1/2 pt each):



NAME: HOWARD I. KNOWTo **not** have your graded script placed outside my office please check this box **(1-10) Are True or False**

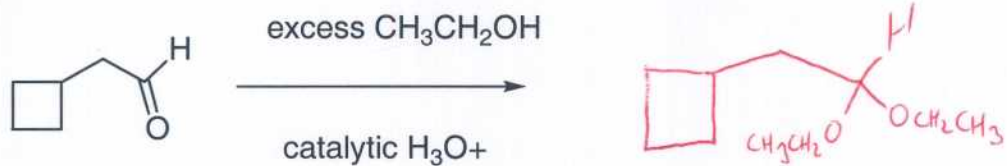
- 1) Amines can act as bases. T
- 2) Amines show nucleophilic character because of the nitrogen atom which has a lone pair of electrons. T
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- 4) Tollen's reagent oxidizes aldehydes to carboxylic acids. T
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- 6) Clemmensen reduction can be described as 'deoxygenation'. T
- 7) Ketones are more sterically hindered than aldehydes. T
- 8) Cyclic acetals are formed when a carbonyl compound reacts with a diol under acidic conditions. T
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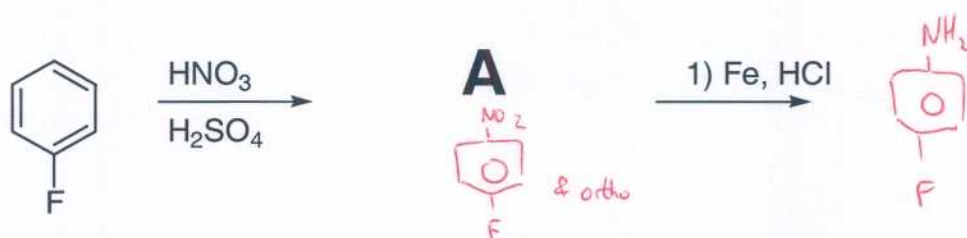
- 10) Hoffman eliminations create a new  $\pi$  bond. T

11-12) Give the products for the following reactions (and indicate stereo/regiochemistry where applicable).

11)

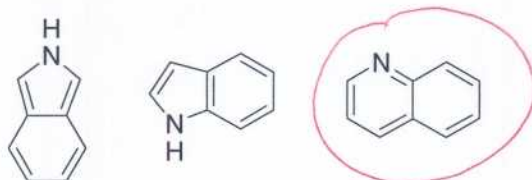


12)

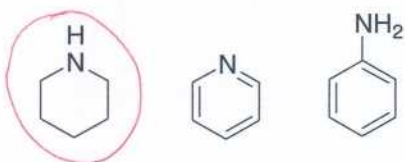


13-15) Circle the **stronger** base in each set.

13)



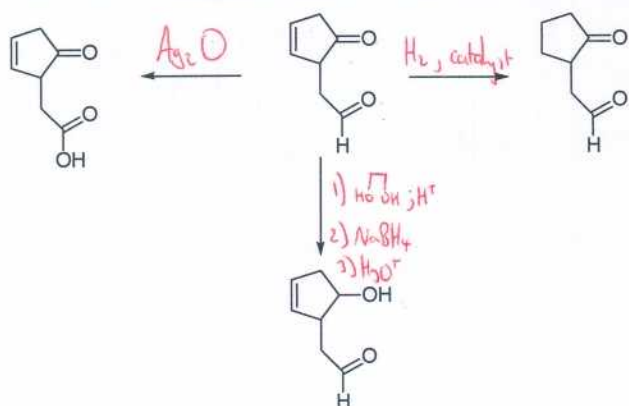
14)



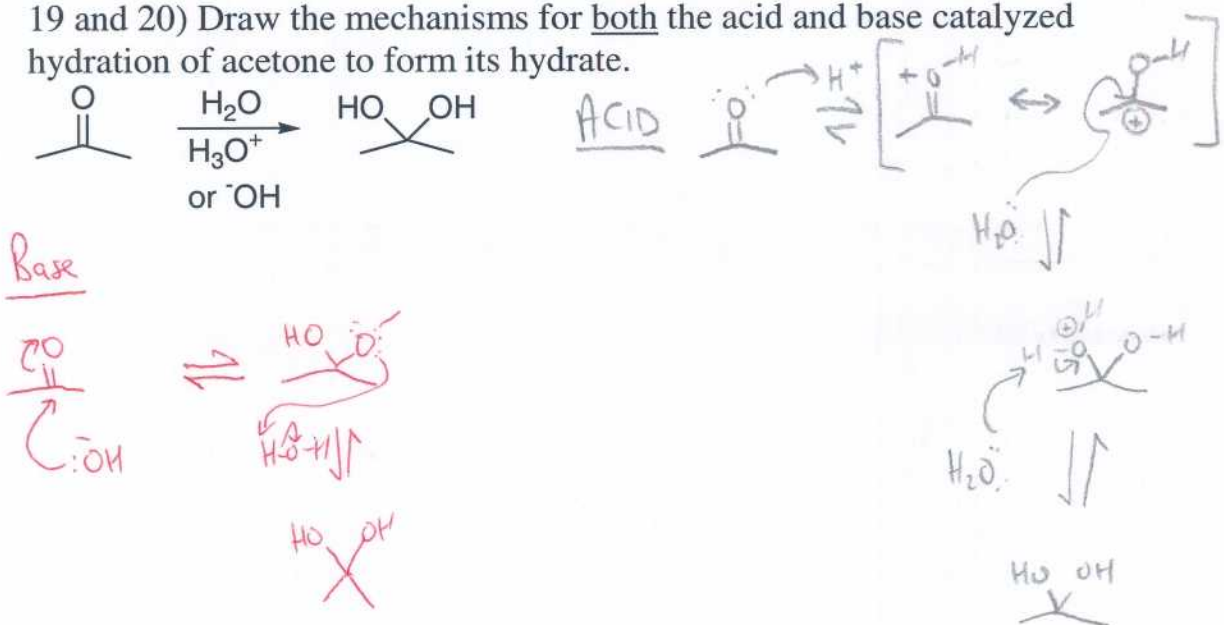
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