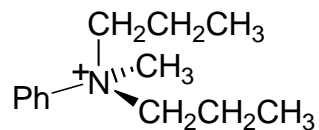


Organic II Quiz #3 Ch 18-19 (20 questions for 20 points).

NAME: _____

(1-10) are True or False.

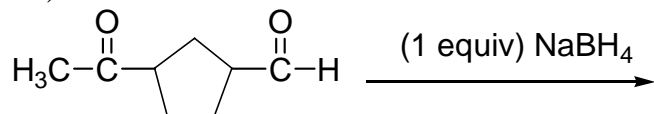
- 1) An aldehyde is a compound containing a carbonyl group bonded to an alkyl group and a hydrogen atom.
- 2) Ketones undergo nucleophilic aromatic substitution.
- 3) An ylide is an overall neutral molecule which contains two formal charges of the same sign on adjacent atoms.
- 4) Tollen's reagent can be used to distinguish between ketones and carboxylic acids.
- 5) In a Wittig reaction, a carbonyl compound reacts with an ylide, and eventually forms an alkene.
- 6) Clemmensen reduction converts ketones to alkanes.
- 7) A nitrile contains a carbon-nitrogen triple bond.
- 8) Sandmeyer chemistry involves the reactions of arene diazonium salts with silver (I) salts.
- 9) This molecule is chiral:



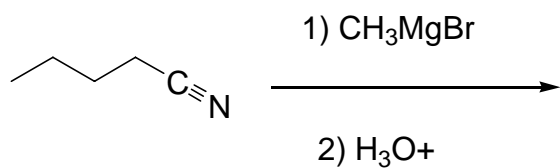
- 10) An azide anion contains three nitrogen atoms, and is a good nucleophile.

11-15) Give the products for the following reactions (and indicate stereo/regiochemistry where applicable).

11)



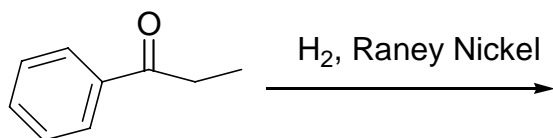
12)



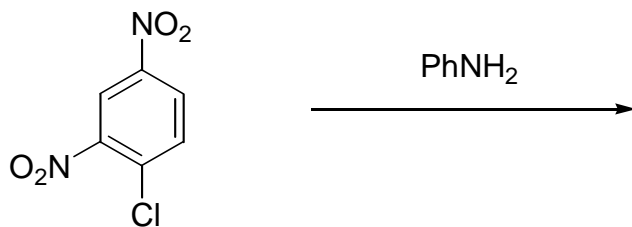
13)



14)

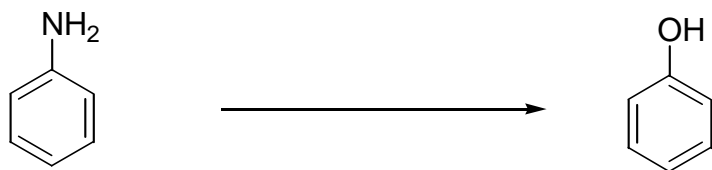


15)

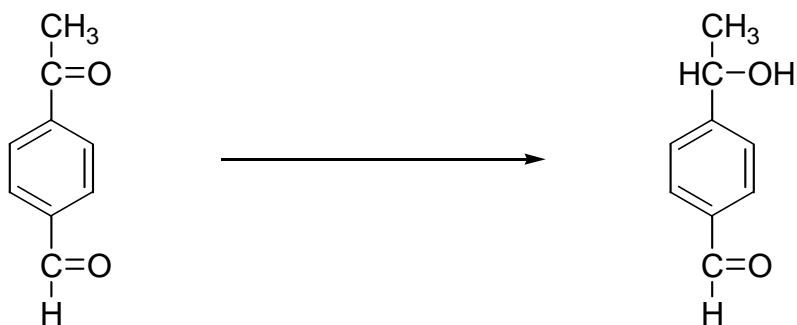


16-20) Give reagents and conditions for the following transformations.

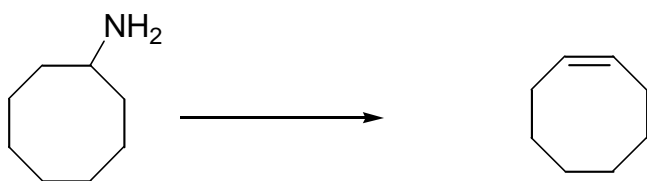
16)



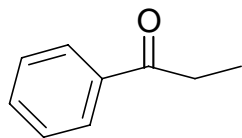
17)



18)



19 and 20) Give two synthetic routes to the below ketone, starting from benzene in each case.



***BONUS QUESTION for 1 extra point ***

Why is triphenylphosphine used in the Wittig reaction, and not (for example) trimethylphosphine?

Organic II Quiz #3 Ch 18-19 (20 questions for 20 points).

NAME: AL. D. HIDE

(1-10) are True or False.

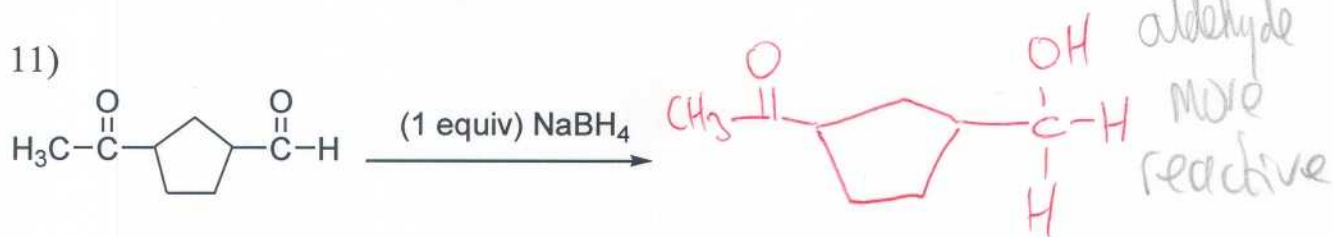
- 1) **T** An aldehyde is a compound containing a carbonyl group bonded to an alkyl group and a hydrogen atom.
- 2) **F** Ketones undergo nucleophilic aromatic substitution.
- 3) **F** An ylide is an overall neutral molecule which contains two formal charges of the same sign on adjacent atoms.
- 4) **F** Tollen's reagent can be used to distinguish between ketones and carboxylic acids. *aldehydes only react.*
- 5) **T** In a Wittig reaction, a carbonyl compound reacts with an ylide, and eventually forms an alkene.
- 6) **T** Clemmensen reduction converts ketones to alkanes.
- 7) **T** A nitrile contains a carbon-nitrogen triple bond.
- 8) **F** Sandmeyer chemistry involves the reactions of arene diazonium salts with silver(I) salts. *Cu*
- 9) **F** This molecule is chiral:



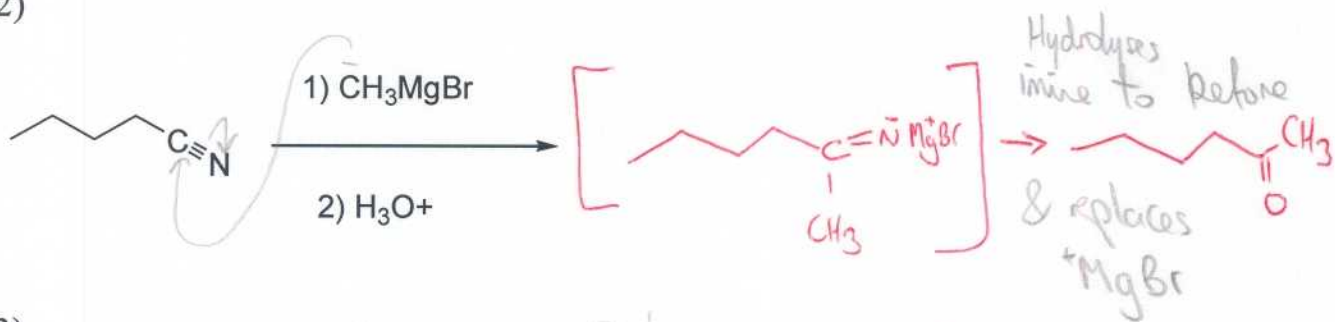
- 10) **T** An azide anion contains three nitrogen atoms, and is a good nucleophile.

11-15) Give the products for the following reactions (and indicate stereo/regiochemistry where applicable).

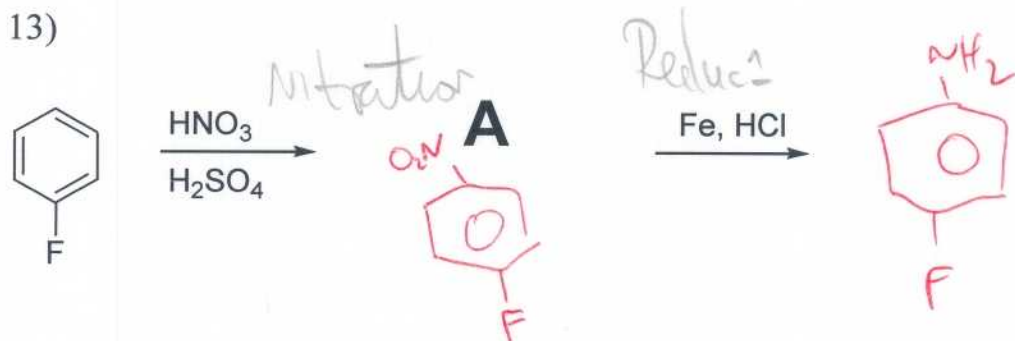
11)



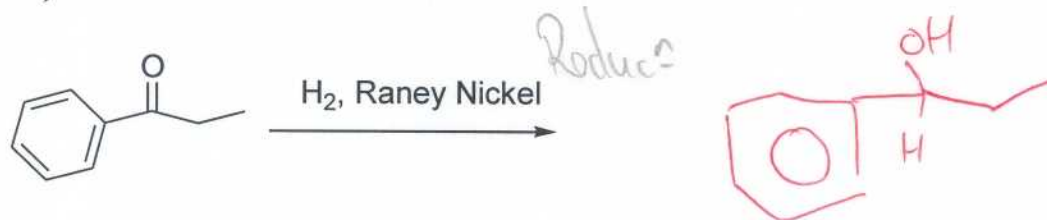
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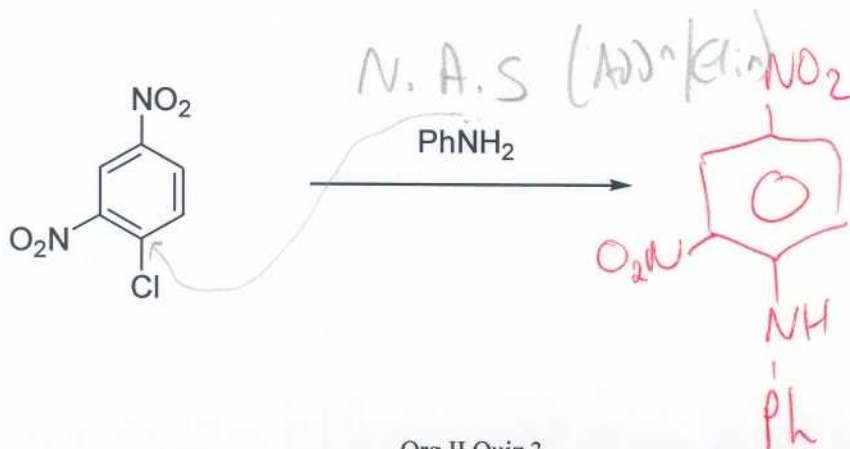
13)



14)

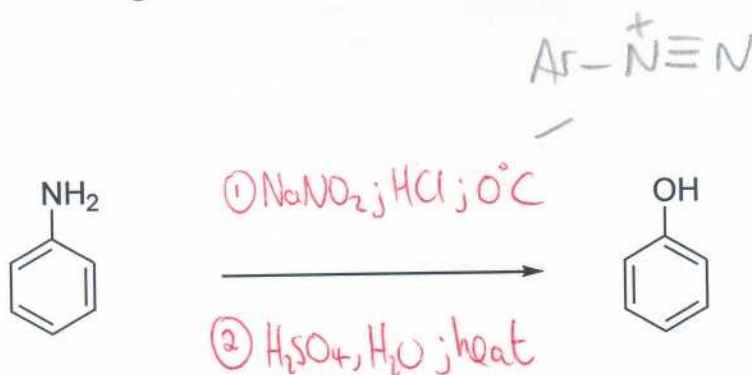


15)

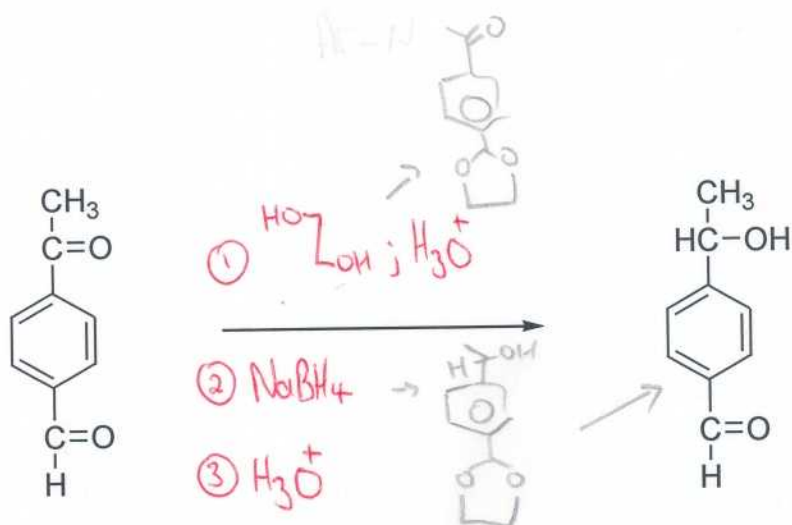


16-20) Give reagents and conditions for the following transformations.

16)



17)



18)

