

NAME: _____

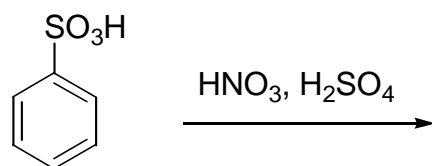
If you do **not** wish to have your script placed outside my office, then please check this box ___

(1-10) are True or False.

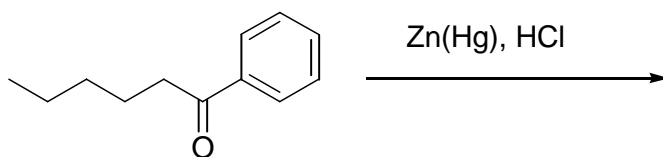
- 1) Benzene undergoes electrophilic aromatic substitution reactions with reactive electrophiles.
- 2) The electrophilic aromatic substitution reaction mechanism involves an initial loss of aromaticity.
- 3) Meta substitution means a 1,3 arrangement on a benzene ring.
- 4) The rate determining step in an electrophilic aromatic substitution is the formation of a resonance stabilized radical.
- 5) Phenols are formed via oxidation of quinones.
- 6) Birch oxidation reaction conditions involve sodium metal, in an alcoholic solution of ammonia.
- 7) Benzyne is 6π Hückel aromatic.
- 8) Chlorine is a meta directing, activating substituent for electrophilic aromatic substitution.
- 9) An alkyl group is a pi-donating substituent, and thus an activating group for electrophilic aromatic substitution reactions.
- 10) The nitro group is a meta director since it is an electron withdrawing substituent.

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

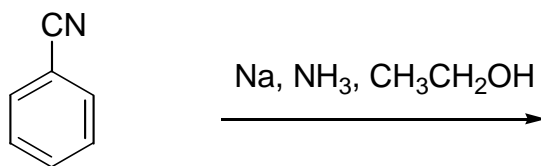
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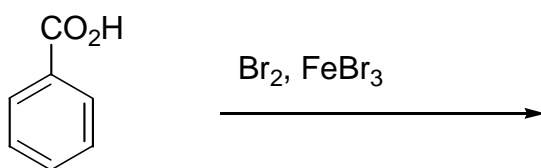
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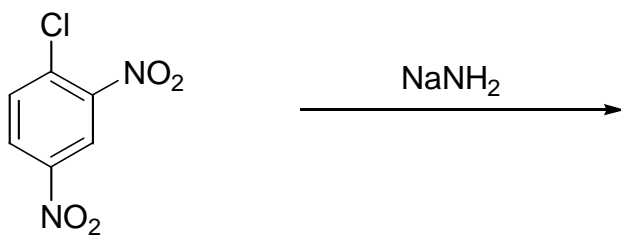
13)



14)

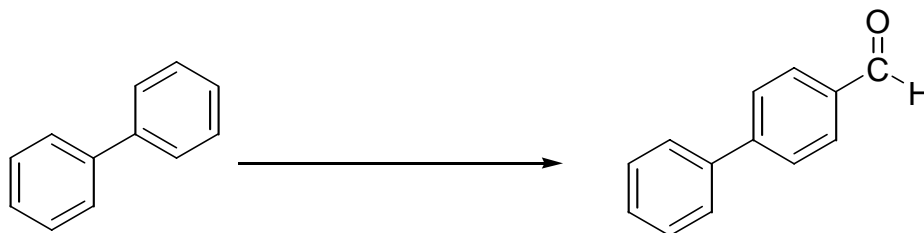


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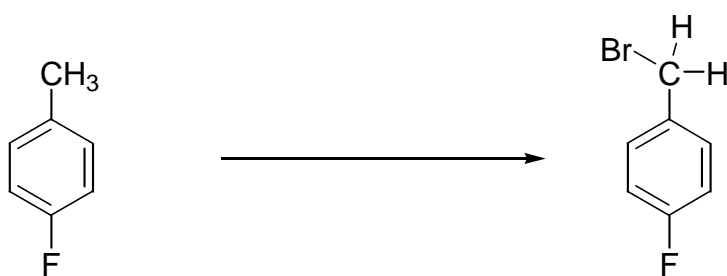


16-19) Give reagents and conditions for the following transformations.

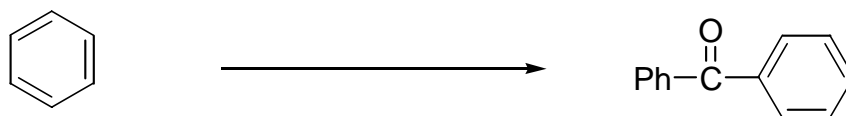
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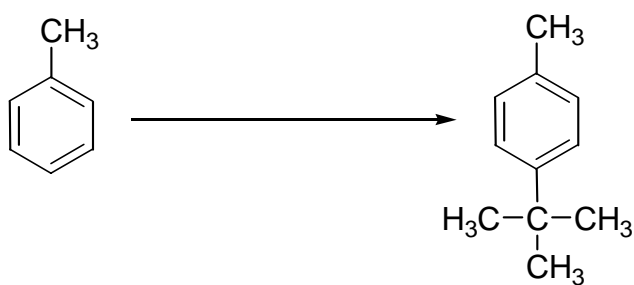
17)



18)



19)



- 20) Draw the mechanism for the reaction of sulfuric acid and nitric acid to generate NO_2^+ , the nitronium ion.

BONUS QUESTION for 1 extra point

Show why acylium ions are **not** prone to rearrange.

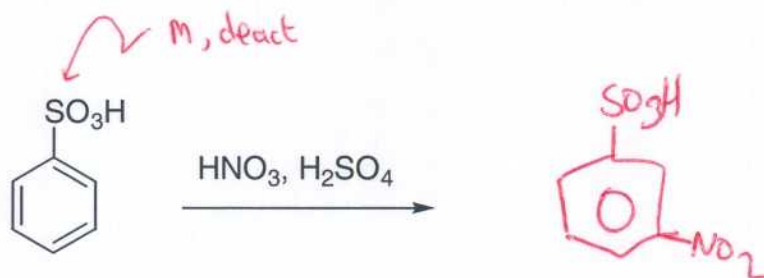
NAME: PHIL ANTHROPISTIf you do **not** wish to have your script placed outside my office, then please check this box ___

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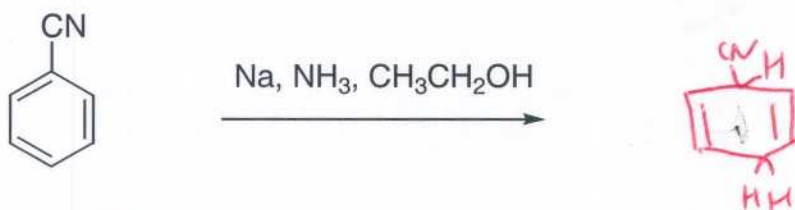
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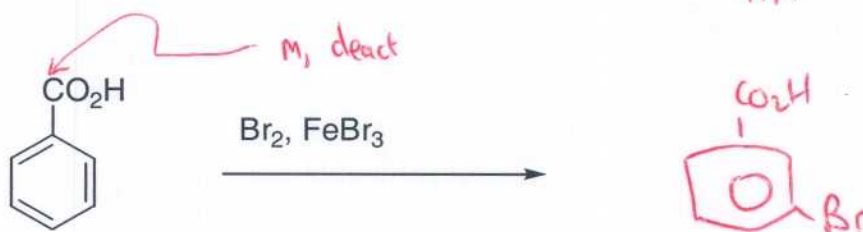
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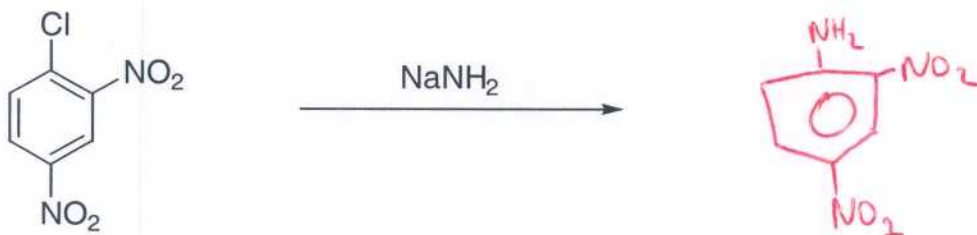
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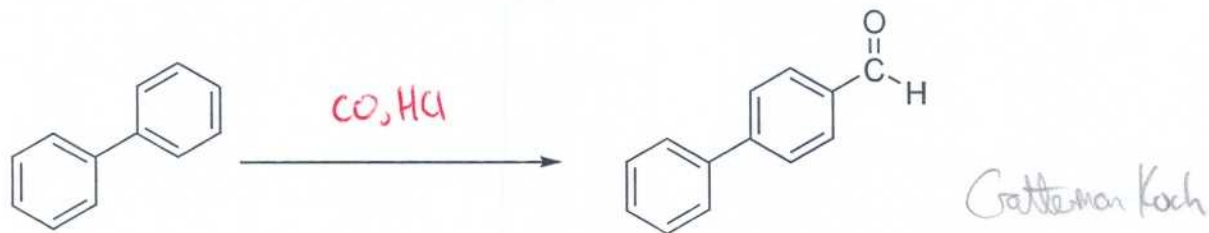


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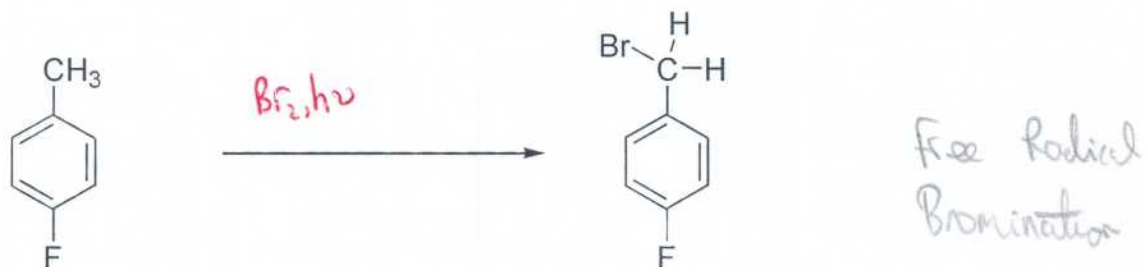


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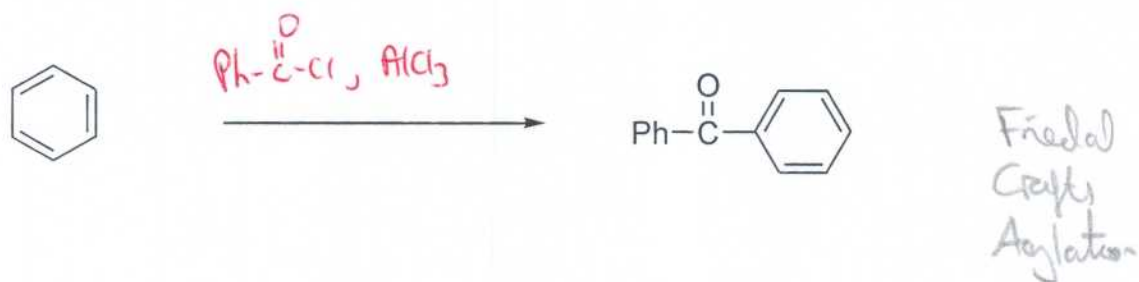
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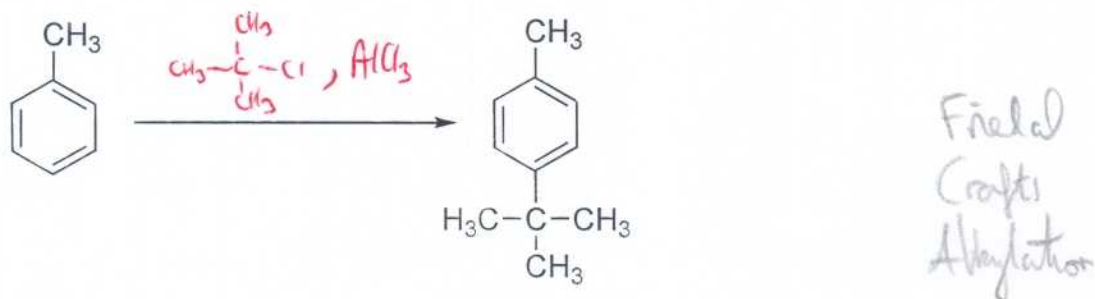
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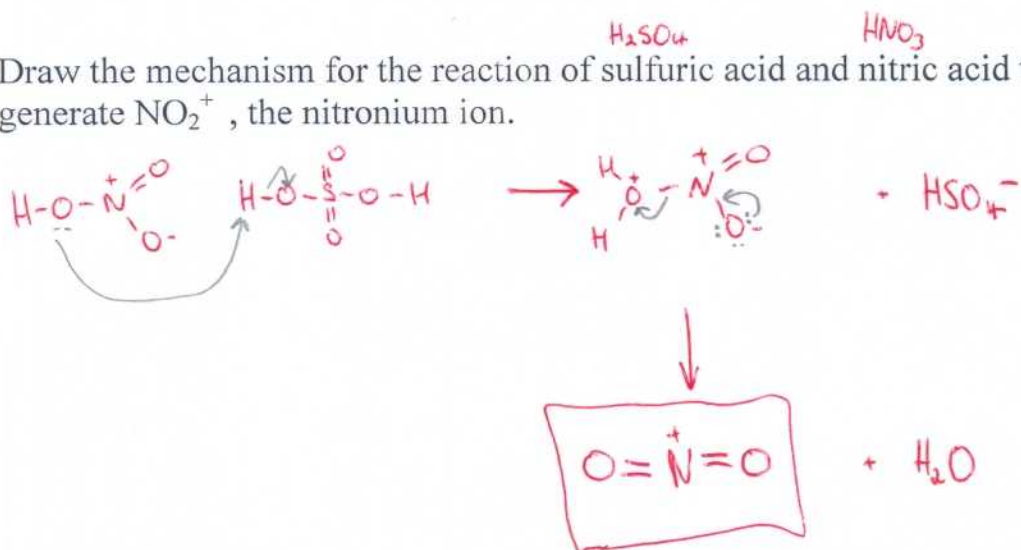
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