

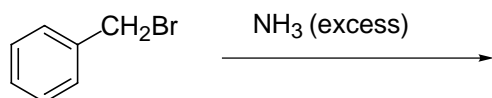
Name \_\_\_\_\_

Pledge: I have neither given nor received aid on this exam.

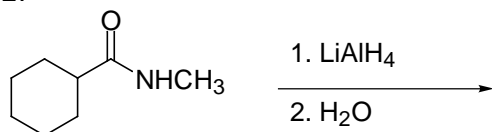
Signature \_\_\_\_\_

I. Predict the major organic product of the following reactions. Be sure to indicate stereochemistry where appropriate. 5 points each

1.



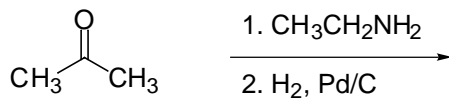
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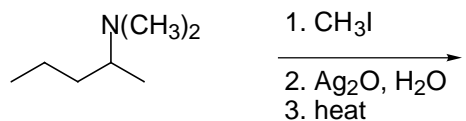
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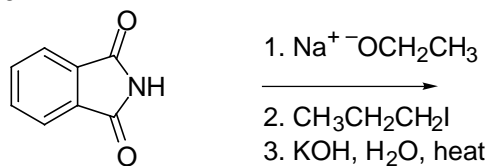
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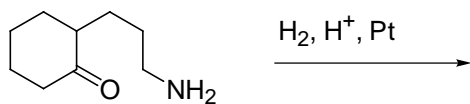
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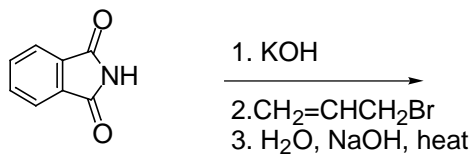
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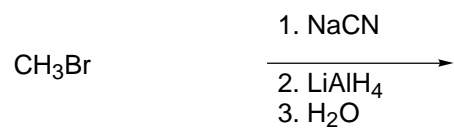
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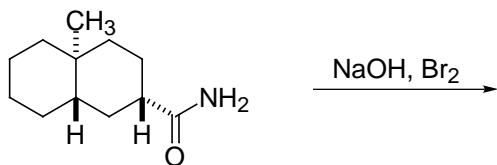
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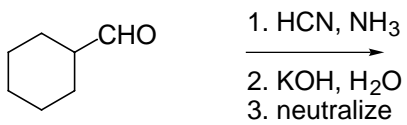
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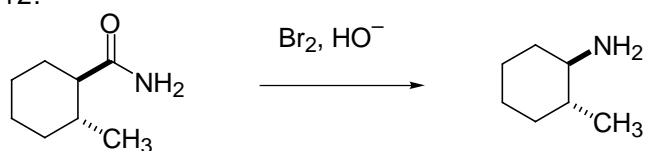
10.



11.



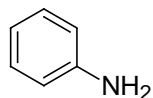
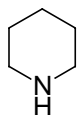
Give a stepwise, detailed mechanism with arrows and intermediates for the following reaction. 6 points).  
12.



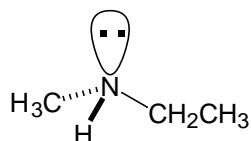
13. List five things which contribute to the secondary structure of peptides. 5 points

14. Describe the basic effects which contribute to the structure of DNA. 5 points

17. Rank the following acids in order of decreasing basicity (1 = most, 2 = next, 3 = least basic) and briefly explain. (6points).



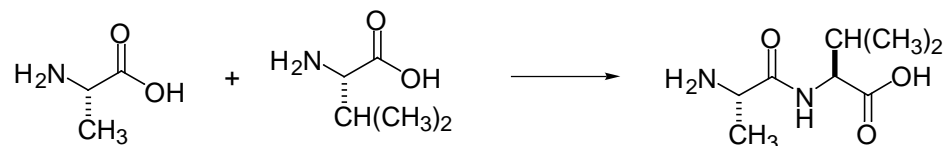
17. Is the molecule below optically active? Explain. 6 points.



18.

Give a method for the enantioselective synthesis of R-phenylalanine from phenylacetic acid. 5 points

19. Show how to carry out the transformation below. (6 points)



20.

Angiotensin II is an octapeptide which controls hypertension by regulating the potassium –sodium salt balance in the body. Partial hydrolysis gave the fragments below. What is the sequence for angiotensin II? (6 points)

asp-arg-val  
ile-his-pro  
arg-val-tyr  
pro-phe  
val-tyr-ile