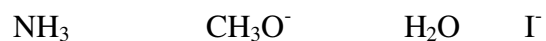


CHM 227
Exam Three

Order these with respect to nucleophilicity. 1 = most nucleophilic, 4 = least nucleophilic.



Order these with respect to leaving group. 1 = best, 4 = worst.



Give a complete description of the $\text{S}_{\text{N}}2$ reaction Include **all** relevant details. Draw a representation of the transition state.

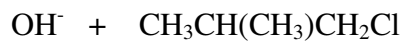
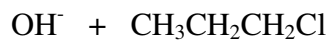
Show the structure of the product(s) when (S)-2-bromobutane reacts with;

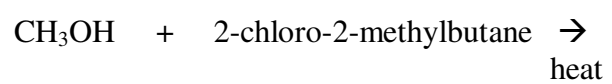
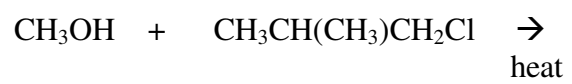
I⁻

$\text{C}\equiv\text{N}^-$

t-butoxide

Indicate the likely mechanism(s) that the following reactions will follow. Draw the structure of the product(s)





Show how this compound might be synthesized using alkyl halides with 3 carbons or less, and any other reagents having three carbons or less. You do not need to show structures or mechanisms, just a list of reagents for each step.

