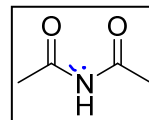
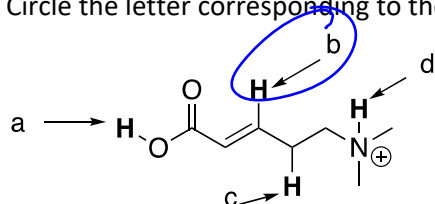


Name: _____

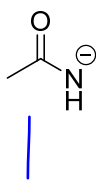
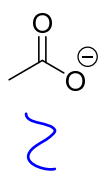
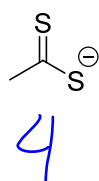
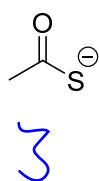
1. What is the hybridization and molecular geometry for the nitrogen atom molecule below? (1 point)

a. sp^2 , bentc. sp^2 , trigonal planarb. sp^3 , tetrahedrald. sp^3 , trigonal pyramidal

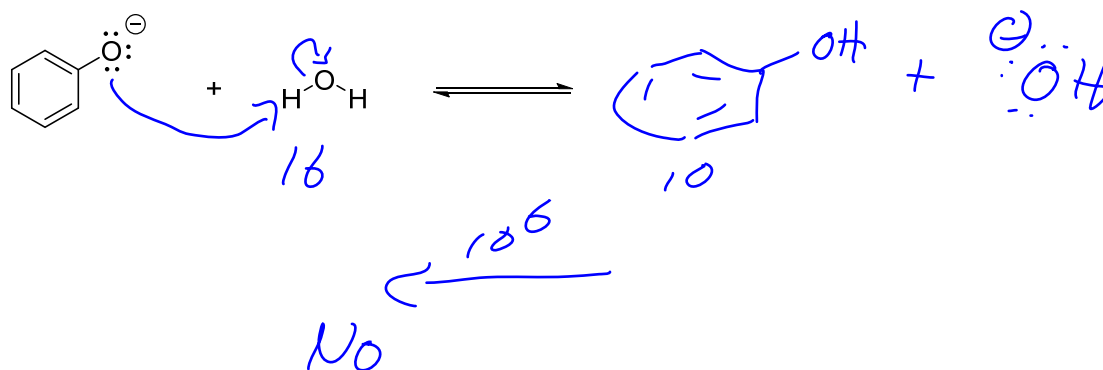
2. Circle the letter corresponding to the **LEAST ACIDIC** proton? (1 point)



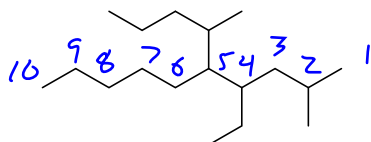
3. Rank the following bases from **MOST BASIC (1)** to **LEAST BASIC (4)**. (2 points)



4. a. Provide products and curved arrows for the following acid base reaction.
b. Determine whether the acid is a suitable choice for this protonation. Use pK_a values to justify your answer. (4 points)



5. Provide the IUPAC name for the following molecule. (2 points)



4-methyl-2-methyl-5-(1-methylbutyl)decane