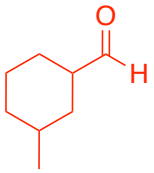
4/5/24

BJM

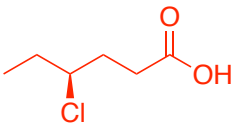
Chemistry 2521 Exam 2 (135 points)

Name: Key

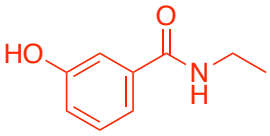
1. (12 pts) Provide structures for the following names:



3-methylcyclohexane-1-carbaldehyde

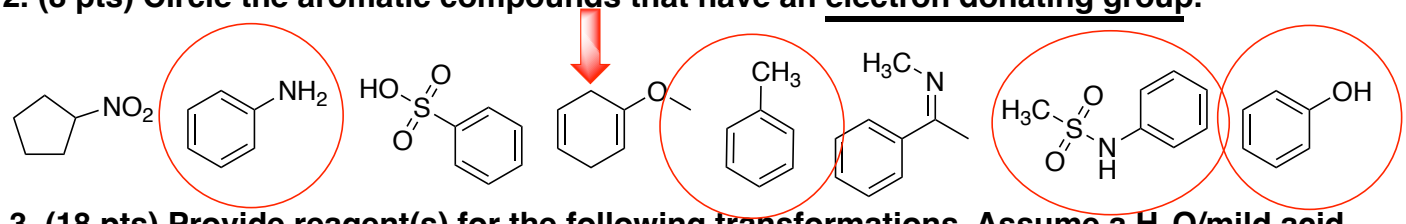


(*S*)-4-chlorohexanoic acid

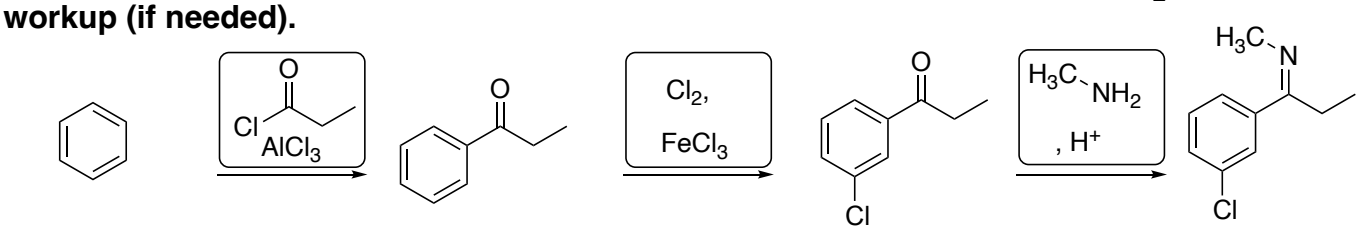


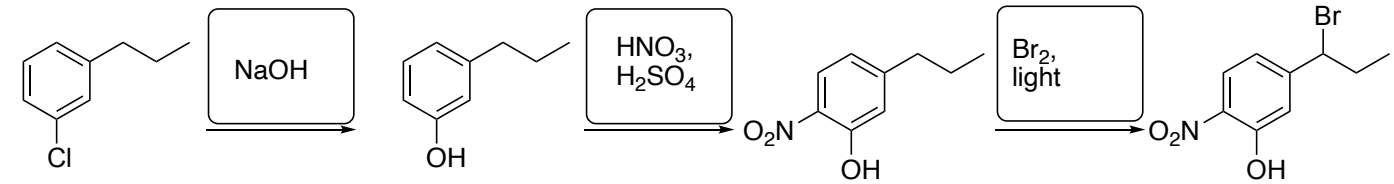
N-ethyl-*meta*-hydroxybenzamide

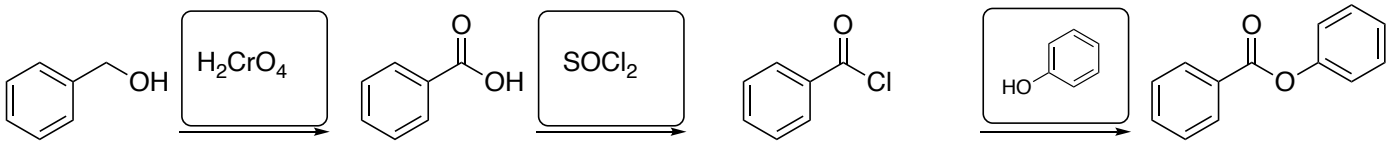
2. (8 pts) Circle the aromatic compounds that have an electron donating group.



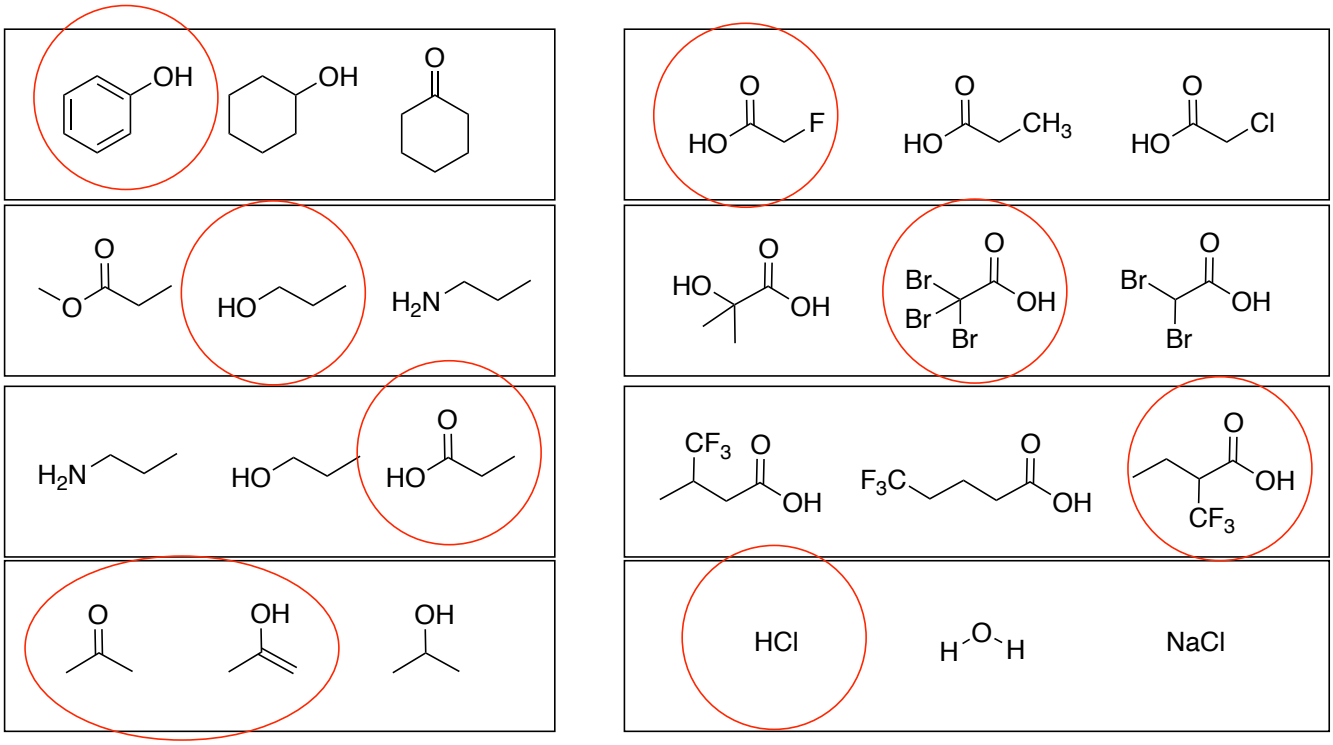
3. (18 pts) Provide reagent(s) for the following transformations. Assume a H_2O/mild acid workup (if needed).



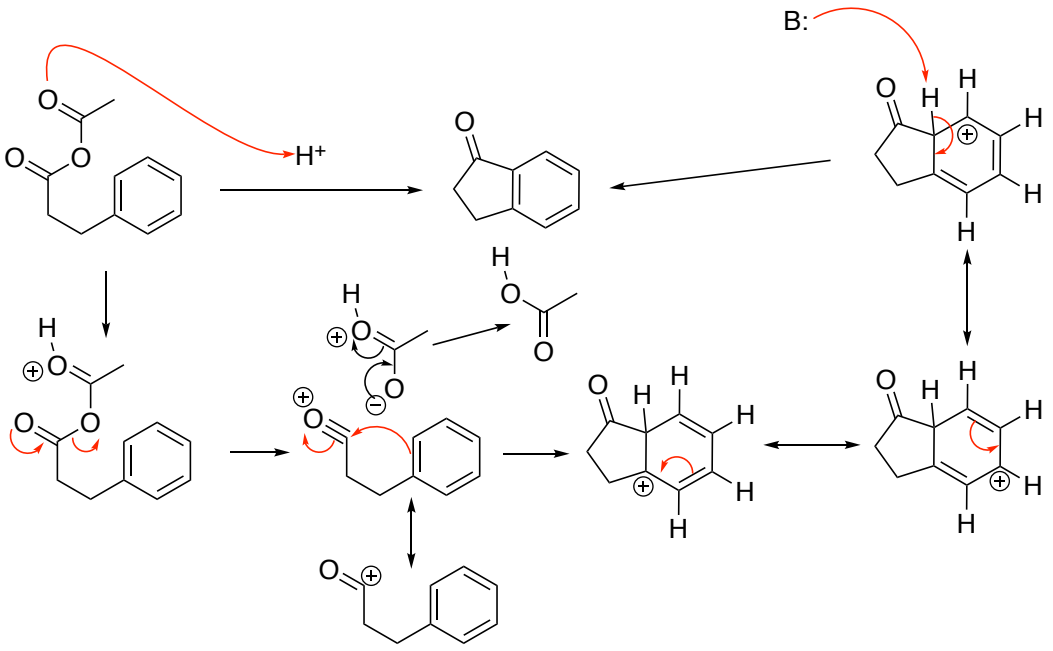




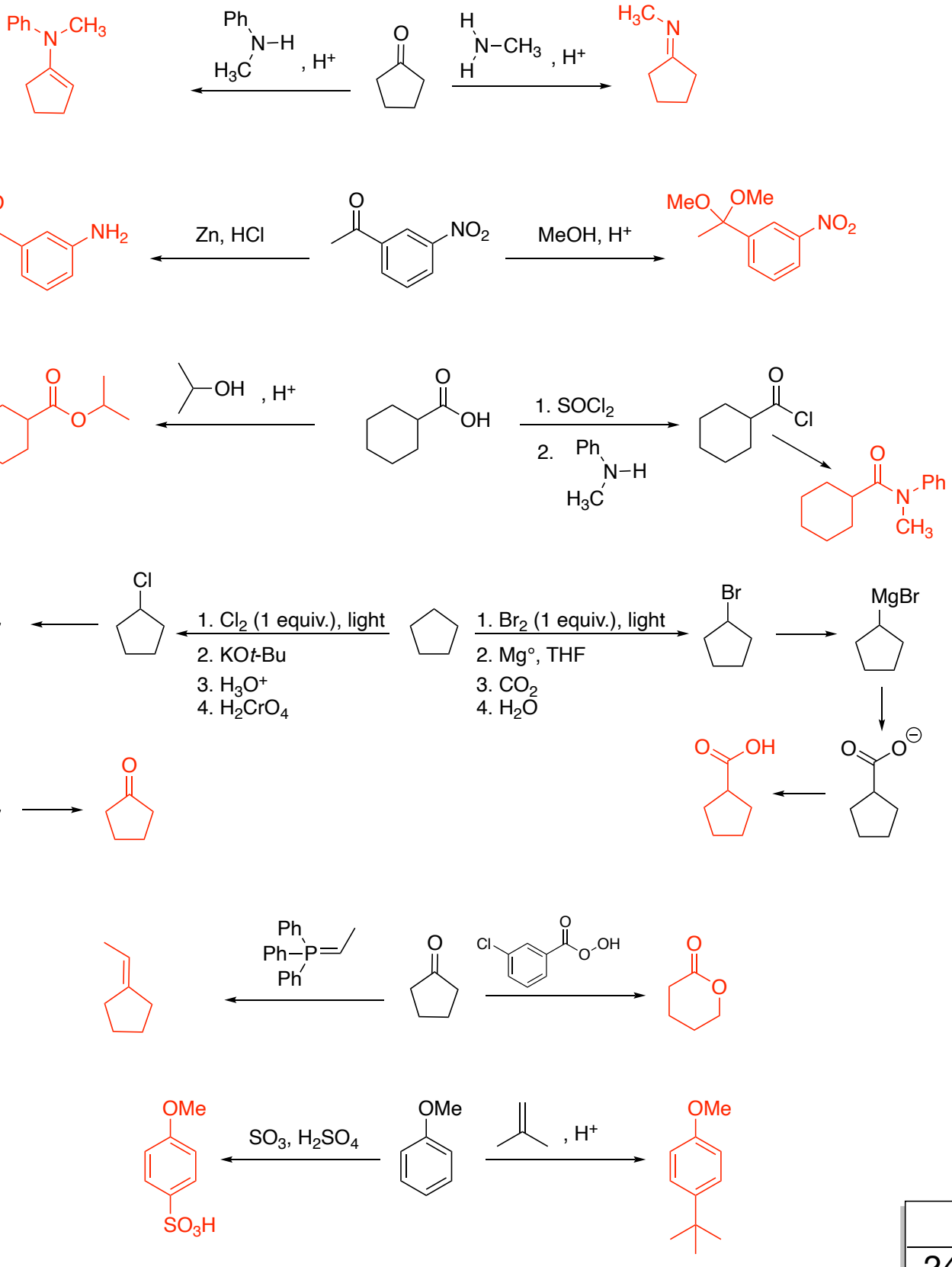
4. (24 pts) Circle the strongest acid in each series.



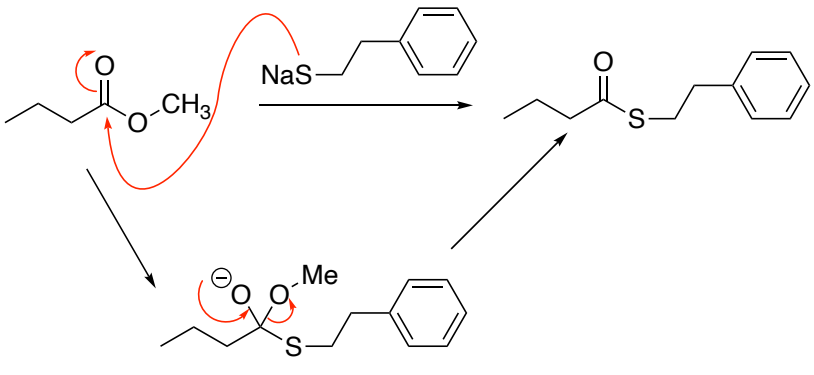
5. (27 pts) Draw a detailed arrow-pushing mechanism for the following transformation. Include all resonance structures that show distribution of charge.



6. (24 pts) Give the major product for the following reactions. For multiple step reactions, give intermediate products (show your work) for partial credit.



7. (7 pts) **Draw a detailed arrow-pushing mechanism for the following transformation. Include all resonance structures that show distribution of charge.**



8. (15 pts) **Provide a retrosynthetic analysis of the following compound that contains 13 carbons. You can use benzene and any other carbon containing starting materials of 3 carbons or less.**