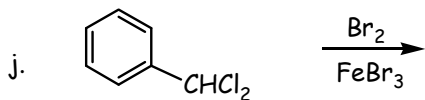
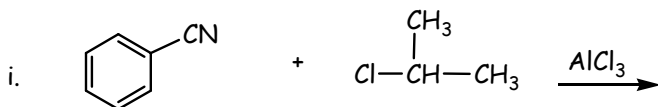
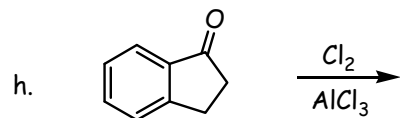
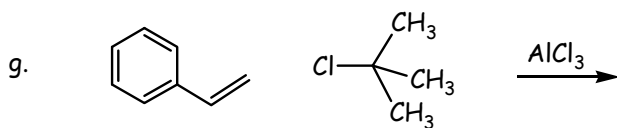
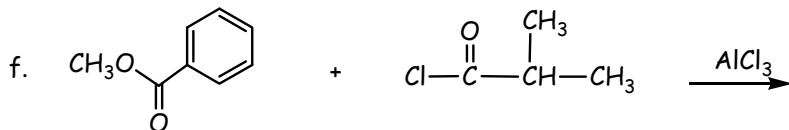
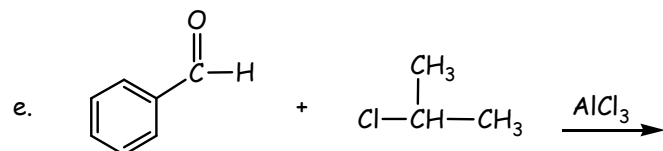
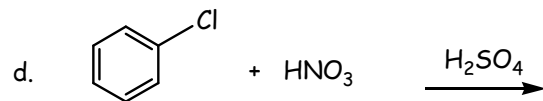
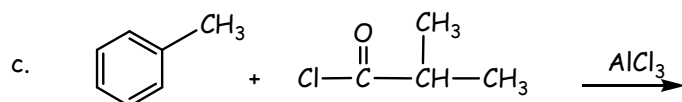
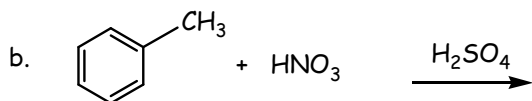
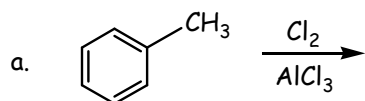


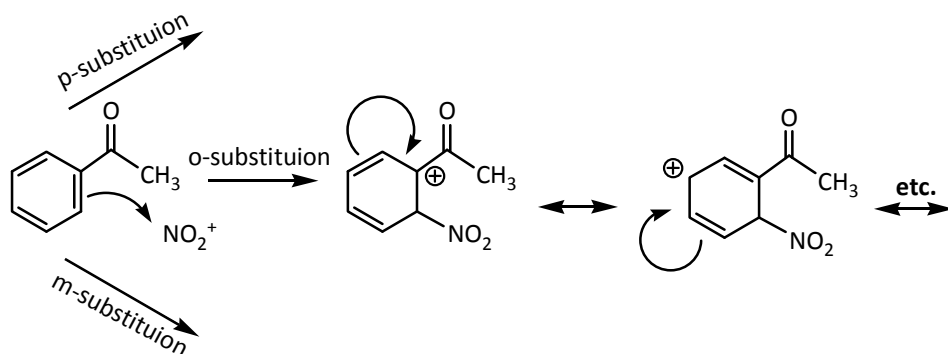
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1. Ortho/para-director versus meta-director. Predict which monosubstituted isomer is preferred.

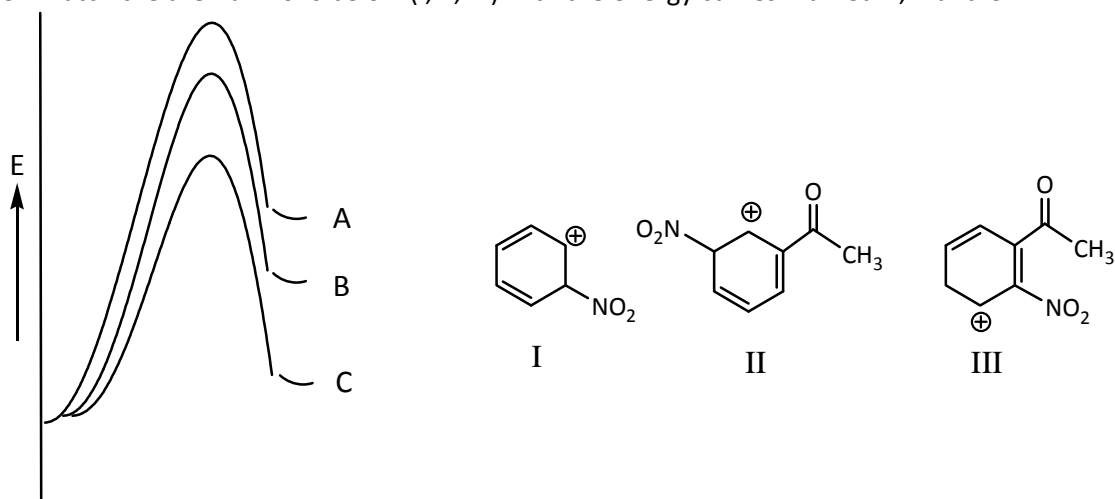


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2. Consider the mechanism for nitration of acetophenone. Draw the first step for substitution at the ortho, para and meta position. Draw all resonance structures for each of the 3 arenium ion intermediates. This means arrow pushing to convert between resonance structures.



3. Match the arenium ions below (I, II, III) with the energy curves marked A, B and C.



- a. The relative energy for arenium ion (I) is: A B C
 b. The relative energy for arenium ion (II) is: A B C
 c. The relative energy for arenium ion (III) is: A B C