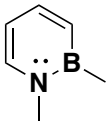
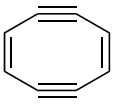
CHE 310 – 002 & 003
Lecture Homework #38

Due: Monday, April 29, 2019, 10:00 am.

9. Fill in the blank to identify each structure below as ***aromatic***, ***antiaromatic*** or ***neither***. Consider each compound only in the resonance structure shown. You may assume all compounds are planar unless their structure obviously prevents it.





_____ _____ _____ _____

2. Provide the major product(s). Clearly indicate the stereochemistry in your structures where appropriate. Where more than one stereoisomer is formed you only need to draw one of the stereoisomeric products. Other stereoisomers should be indicated by writing, "***+ enantiomer***" or "***+ diastereomer***", as appropriate. Check the boxes on the right to indicate whether the reaction product solution would be optically active ($[\alpha]_D \neq 0$) or not optically active ($[\alpha]_D = 0$). Under the check boxes indicate why that box was chosen (possible answers are single enantiomer, diastereomers, racemic, meso and achiral)

a  $\xrightarrow[H_2SO_4]{HNO_3}$ $[\alpha]_D \neq 0$ ☐ $[\alpha]_D = 0$ ☐

b  $\xrightarrow[AlCl_3]{CH_3Cl}$ $[\alpha]_D \neq 0$ ☐ $[\alpha]_D = 0$ ☐

3. Provide the complete mechanism for the reaction below to give the product(s) shown. Each mechanism must include the following:
   - Proper arrows to show all electron motion.
   - The structure of all reactive intermediates including stereochemistry where appropriate.

a  $\xrightarrow[FeBr_3]{Br_2}$