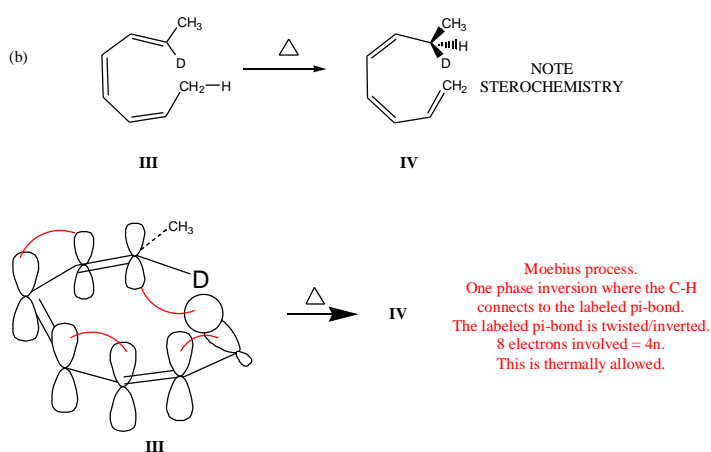
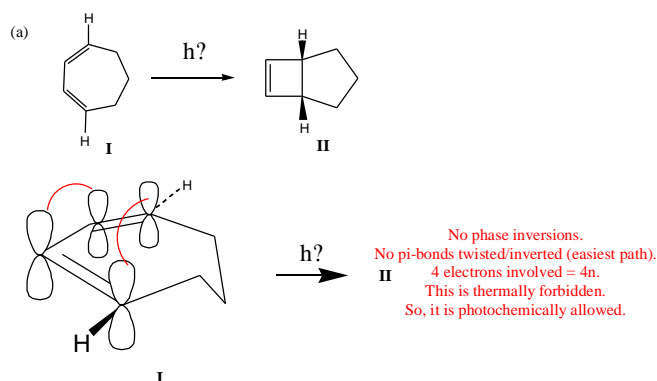


**QUIZ #4 (100 points)**

NAME: \_\_\_\_\_ ANSWER KEY \_\_\_\_\_

Answer all questions as completely as you can. Clearly show your work and reasoning.

1. Draw linking lines to show how the two reactions shown below can proceed by a Dewar-Zimmerman favorable concerted reaction process under the conditions shown. Classify the reaction as aromatic (Huckel) or Mobius, and give the number of electrons involved in the pericyclic process. (60 pts).



2. Describe two experiments that you could do to help you to decide whether a given reaction proceeds by a radical pathway or (maybe) not. Assume that you will NOT be able to observe the typical radical intermediate in situ by EPR spectroscopy, due to its short lifetime. (40 pts)

Run reaction in absence and presence of oxygen = if oxygen is an inhibitor, suggests radical reaction  
 Run reaction in absence and presence of a radical trap = if trap is an inhibitor, suggests radical reaction  
 Run reaction in presence of a radical trap that produces stable radical products = if EPR, suggests radical reaction  
 Run reaction in absence and presence of light = if light accelerates reaction, suggests radical reaction  
 Search for dimeric products of molecular fragmentation – if present, suggests radical reaction