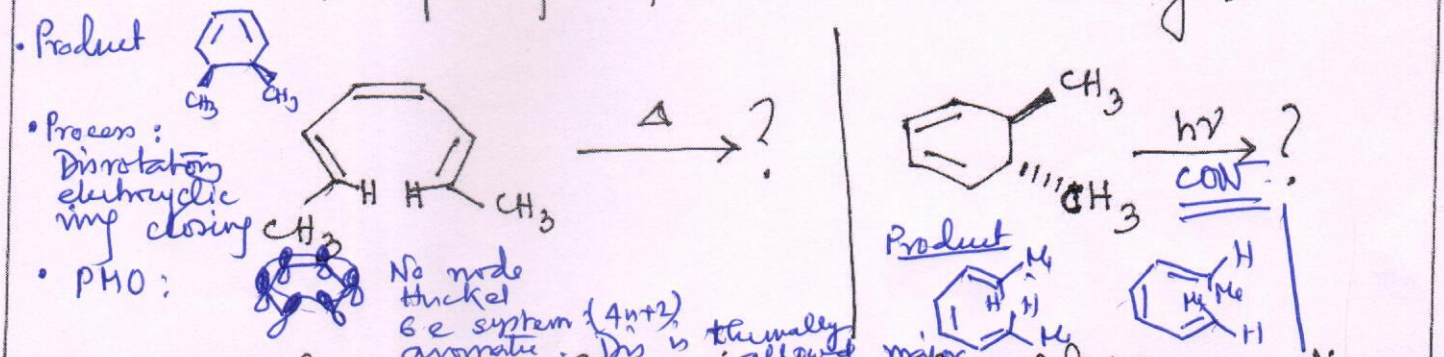
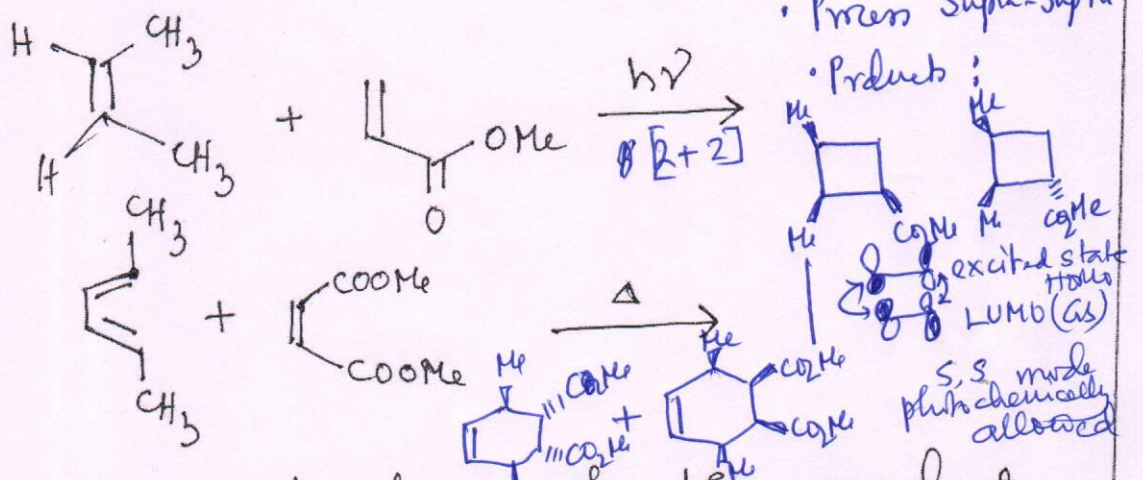
1. Predict the product in the following electrocyclic reactions and indicate the stereochemistry. Explain the outcome with the help of FMO or PMO theory.



2. Consider the following cycloaddition reactions: Classify them as per (m+n) reaction. Also indicate, using FMO/PMO theory, whether the processes go through supra-supra or supra-antara mode?



3. Draw the structure of the product in the following sigmatropic rxns: