name: ____________________________________

organic ii lecture
spring 2004
quiz #2
(10 points)

1. how many molecular orbitals are needed to represent the \( \pi \) bond system of the intermediate shown below? (2 points).

\[
\begin{array}{c}
\text{H} \\
\text{H} \\
\text{H}
\end{array}
\]

2. assuming kinetic conditions, predict the structure of the major diels-alder adduct resulting from the following reaction. include any relevant stereochemistry. (3 points, problem 15-30c)

\[
\begin{array}{c}
\text{C}_5H_6 \\
\text{H}
\end{array}
\text{+} \quad \begin{array}{c}
\text{H} \\
\text{C}_2\text{H}_4
\end{array}
\rightarrow
\begin{array}{c}
\text{H} \\
\text{H}
\end{array}
\]

3. three halogenated organic products result from the reaction below. draw the structure of each product and then circle the most stable product. (5 points, see problem 15-29)

\[
\text{NBS, light}
\]