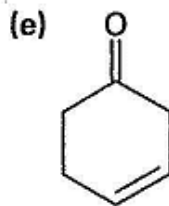
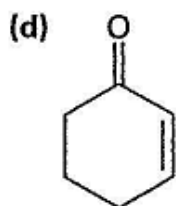
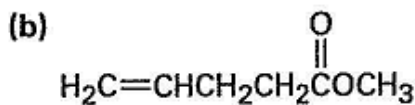
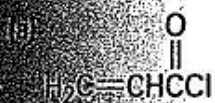
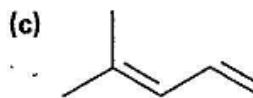
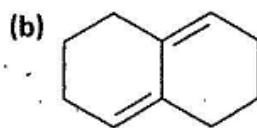
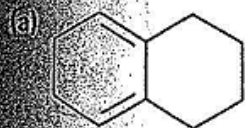


**Problem 14.8**

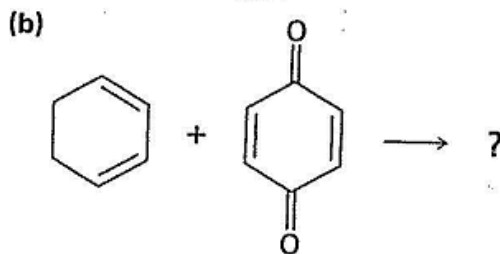
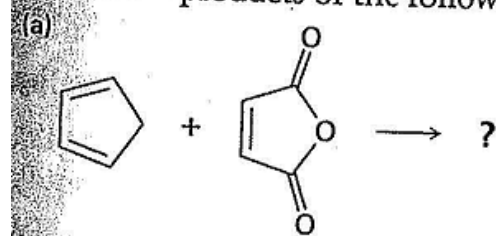
Which of the following alkenes would you expect to be good Diels–Alder dienophiles?

**Problem 14.9**

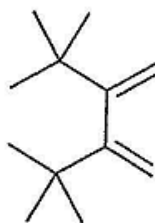
Which of the following dienes have an *s*-cis conformation, and which have an *s*-trans conformation? Of the *s*-trans dienes, which can readily rotate to *s*-cis?

**Problem 14.26**

Predict the products of the following Diels–Alder reactions:

**Problem 14.27**

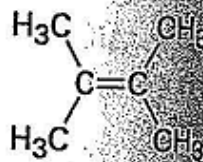
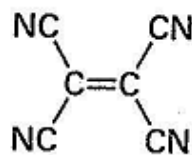
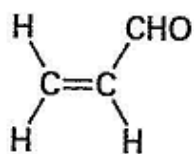
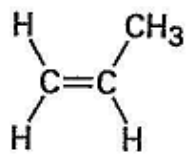
2,3-Di-*tert*-butyl-1,3-butadiene does not undergo Diels–Alder reactions. Explain.



2,3-Di-*tert*-butyl-1,3-butadiene

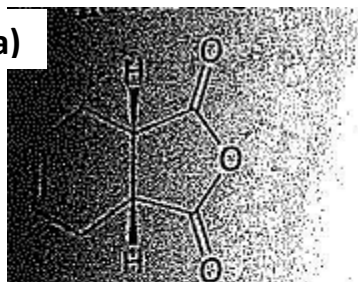
**Problem 14.32**

Rank the following dienophiles in order of their expected reactivity in the Diels-Alder reaction.

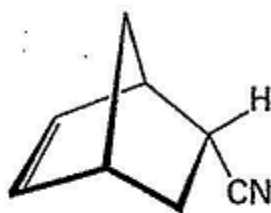
**Problem 14.35**

How could you use Diels-Alder reactions to prepare the following products? Show the starting diene and dienophile in each case.

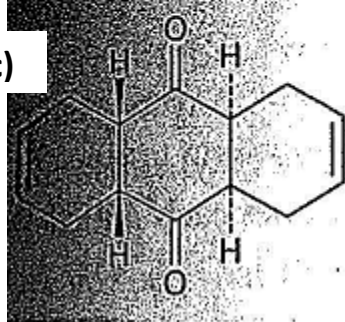
a)



(b)



c)



(d)

