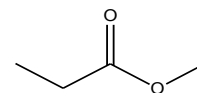
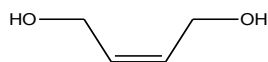
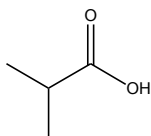
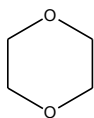


Name(s): _____

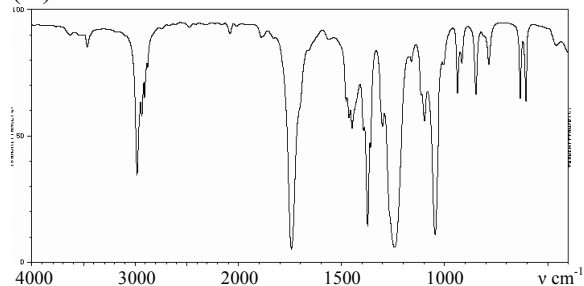
Chem 121

Infrared Problems

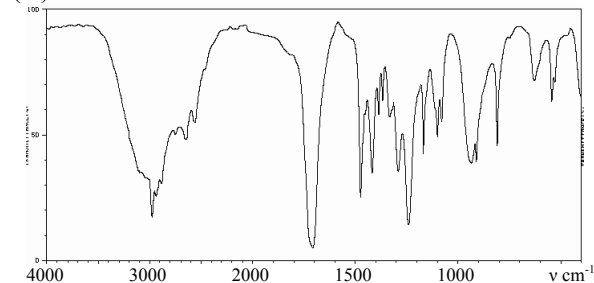
1. The following for compounds all have the formula $C_4H_8O_2$. Match the compound with the correct spectra, and explain your reasoning.



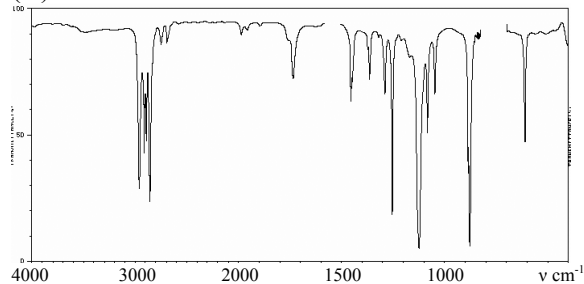
(A)



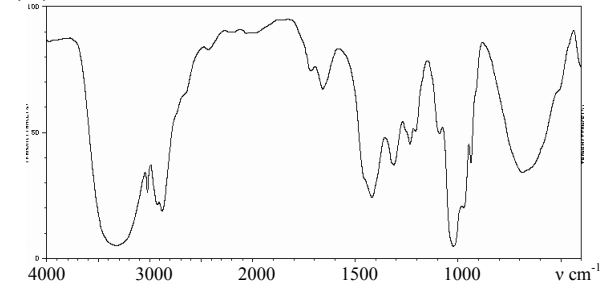
(B)



(C)

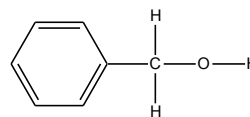
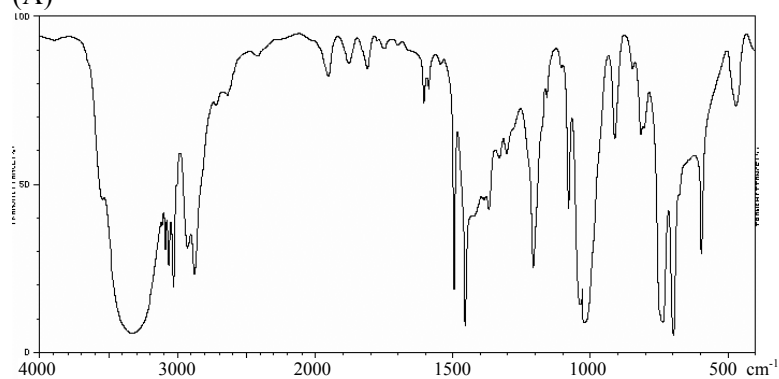


(D)

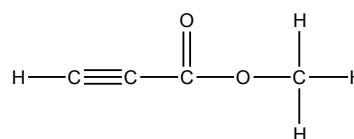
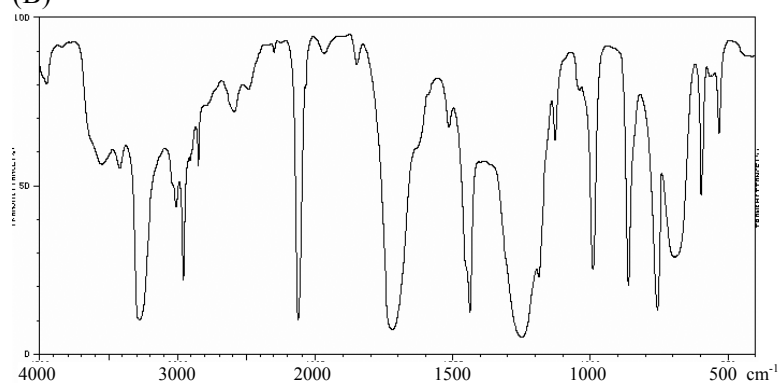


2. Assign the distinctive peaks in the following IR spectra. Color-code your answers.

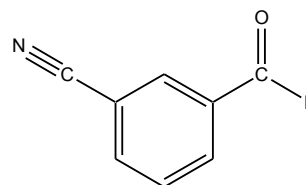
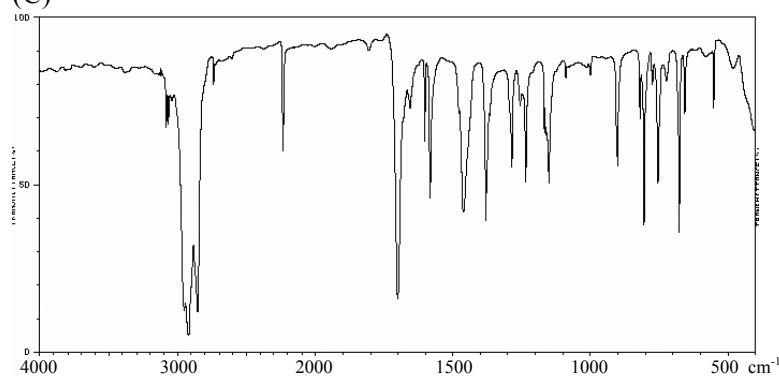
(A)



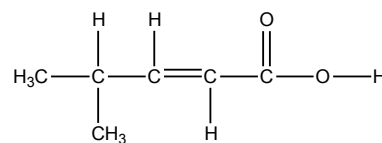
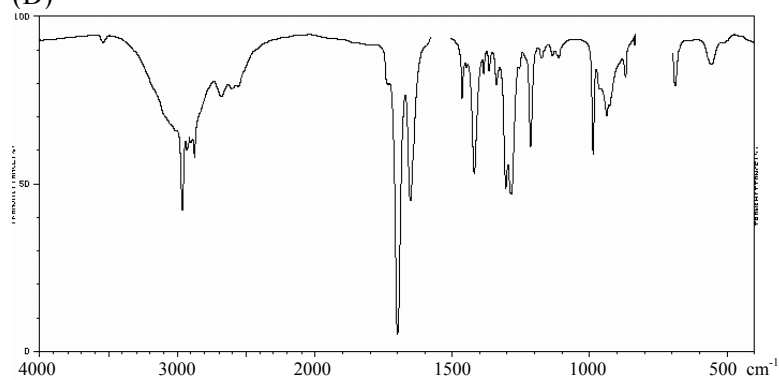
(B)



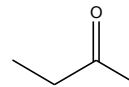
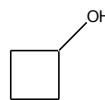
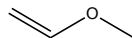
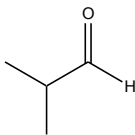
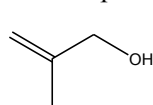
(C)



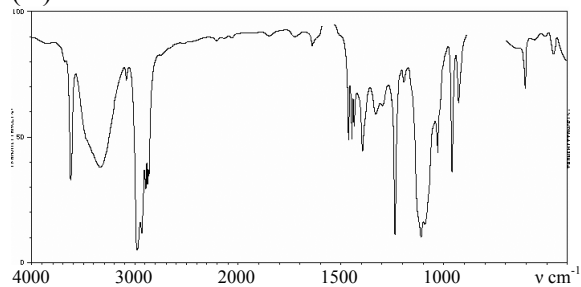
(D)



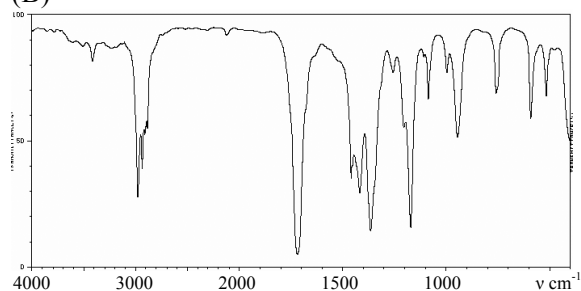
3. Match each IR spectra to the correct molecule shown below. Give an explanation for each answer.



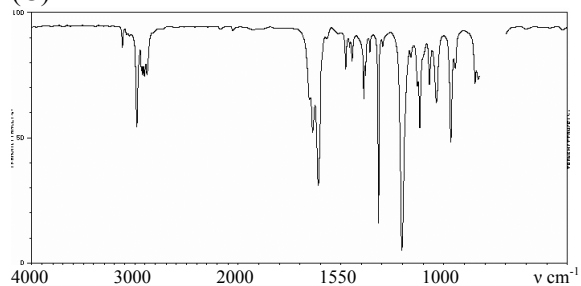
(A)



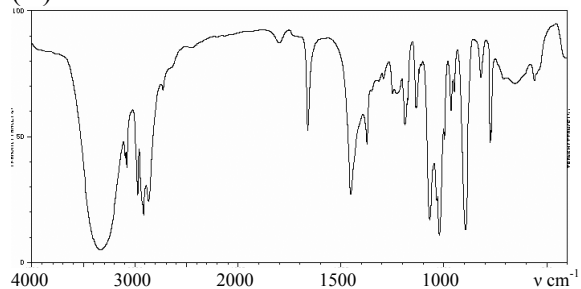
(B)



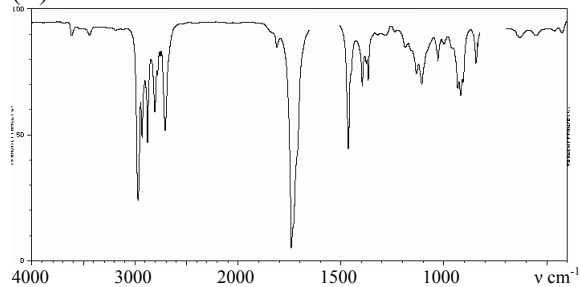
(C)



(D)



(E)

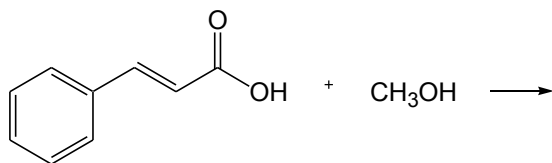


4. The two organic compounds shown below are combined. The IR spectra of these two reactants and the resulting product are shown below.

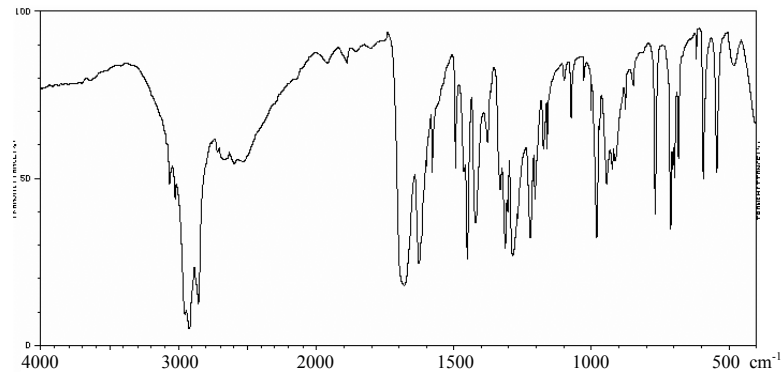
(a) What product do you expect to form in this reaction?

(b) Identify the distinctive peaks in each IR spectra.

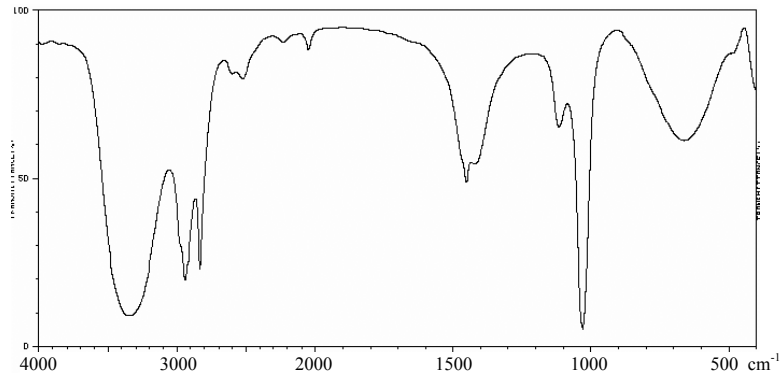
(c) Did this reaction produce the expected product? Use the IR spectra to support your answer.



First reactant:



Second reactant:



Product:

