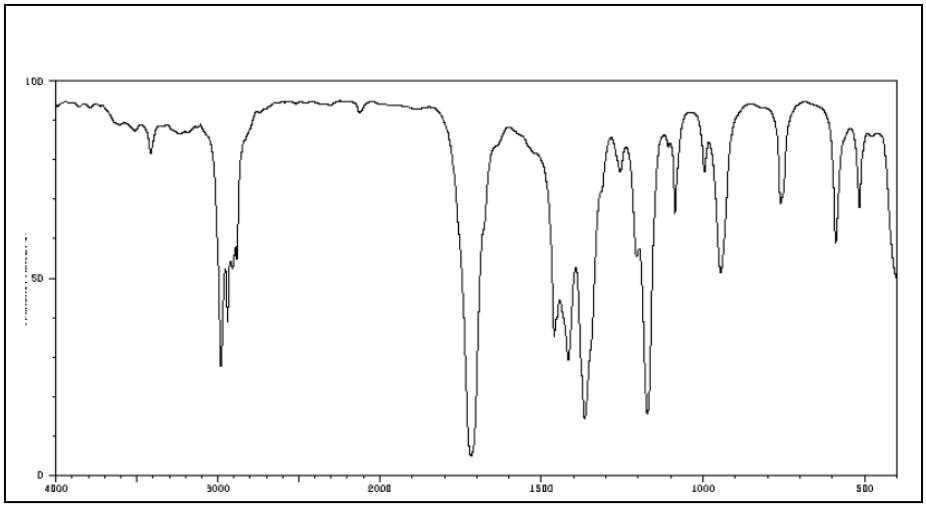
Video worksheet – IR spectroscopy.

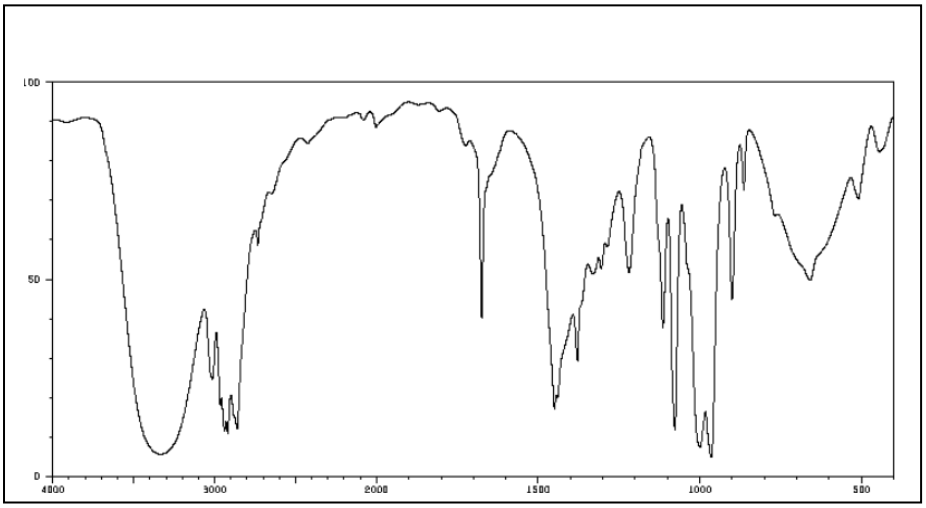
1. Consider the IR spectrum of a compound with the molecular formula C_4H_8O.



a. Apart from a C-H bond identify one other bond type present and justify your decision.
b. Draw the skeletal structures of two isomers of this compound.

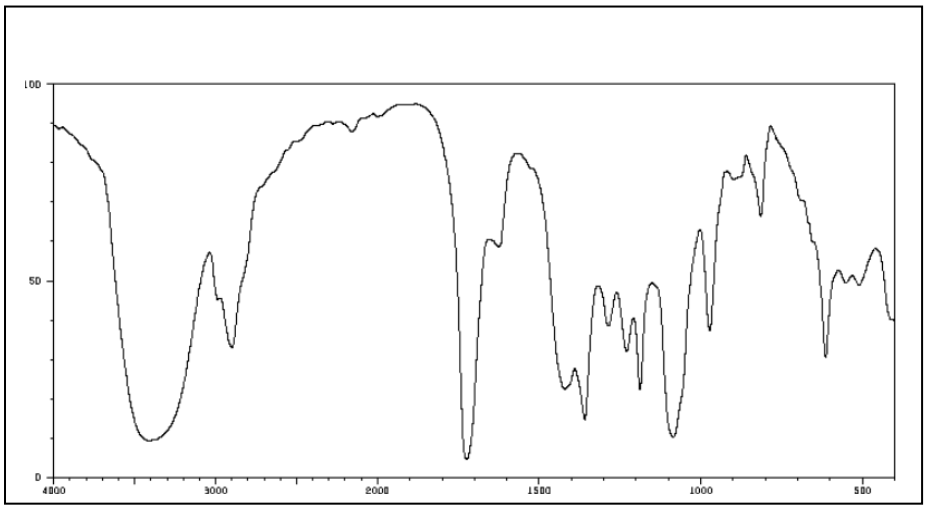
c. Identify the class of compounds that this molecule belongs to given that treatment with $Cr_2O_7^{2-}$ does not produce an organic acid.

2. Consider the IR spectrum of a compound also with the molecular formula C_4H_8O



a. Identify two possible bond types present. Justify your choice.
b. Draw the structural formulae of four geometric isomers of this compound.
c. Name the four molecules you have drawn.

3. Consider the IR spectrum of a compound also with the molecular formula $C_3H_6O_2$



a. Identify two possible bond types present. Justify your choice..
b. Draw a possible structural formula of this compound given that it is not an aldehyde.

4. Consider the IR and HNMR spectra of two compounds with the molecular formula $C_4H_{10}O_2$
Identify compound "A" using the information presented. Justify your reasoning.