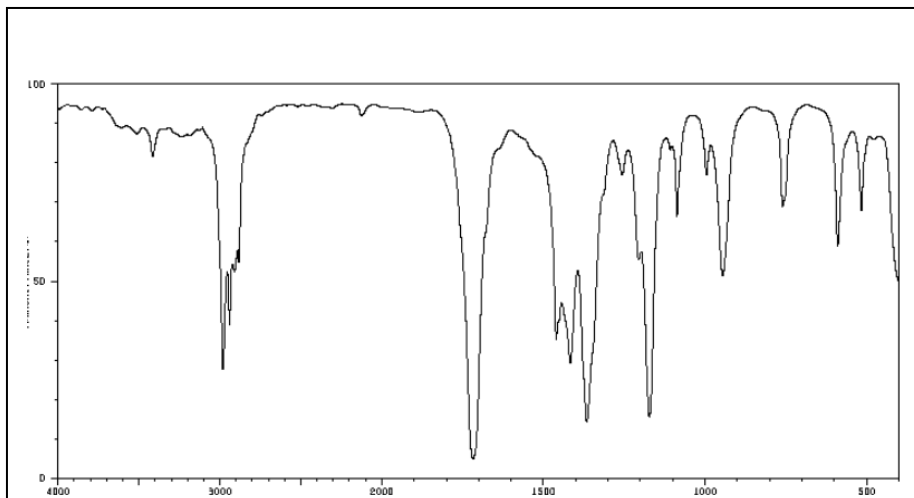


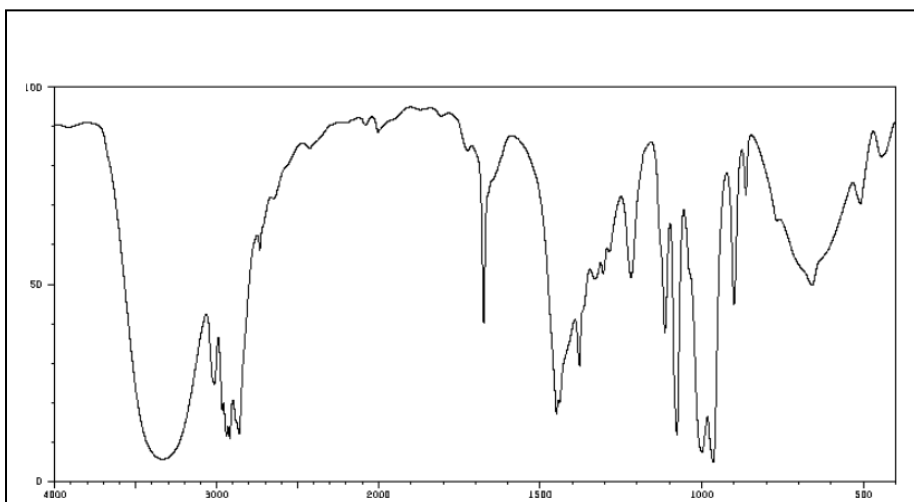
Video worksheet – IR spectroscopy.

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



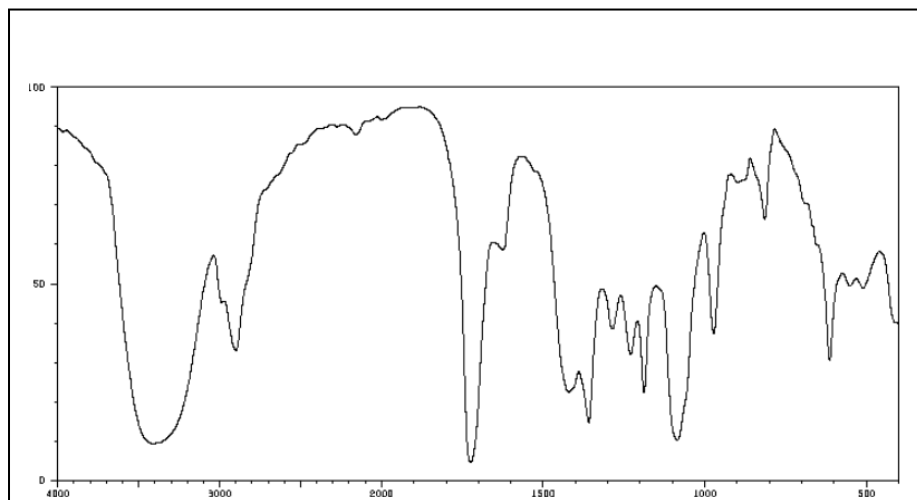
- Apart from a C-H bond identify one other bond type present and justify your decision.
- Draw the skeletal structures of two isomers of this compound.
- Identify the class of compounds that this molecule belongs to given that treatment with $Cr_2O_7^{2-}$ does not produce an organic acid.

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



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

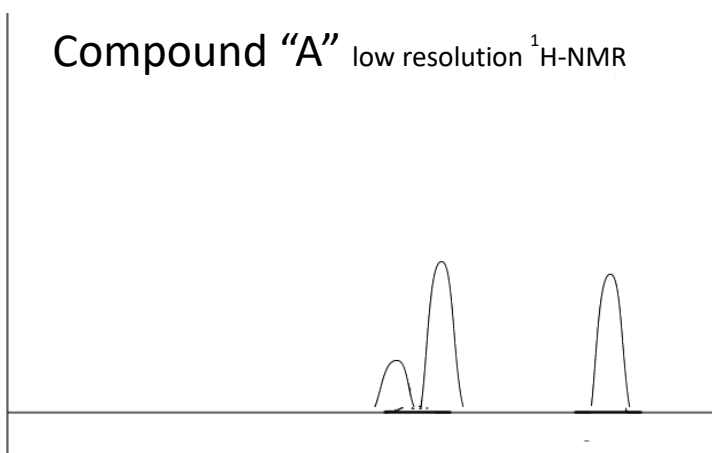
3. Consider the IR spectrum of a compound with the molecular formula $C_3H_6O_2$



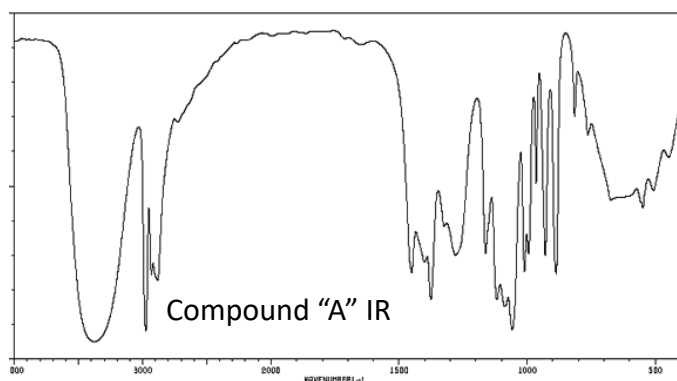
- Identify two possible bond types present. Justify your choice..
- Draw a possible structural formula of this compound given that it is not an aldehyde.

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.

Compound "A" low resolution 1H -NMR



Compound "A" IR



Compound "B" IR

