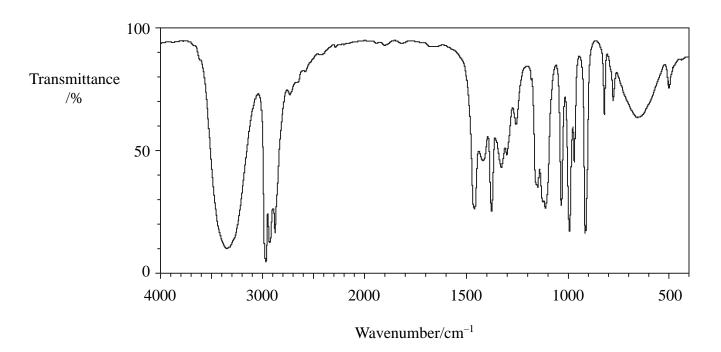
- 1 This question is about compounds X, $C_4H_{10}O$, and Y, C_4H_8O .
 - (a) Compound \mathbf{X} , $C_4H_{10}O$, can be oxidized to compound \mathbf{Y} , C_4H_8O . The infrared spectrum of \mathbf{X} is given below.

Infrared Spectrum of X

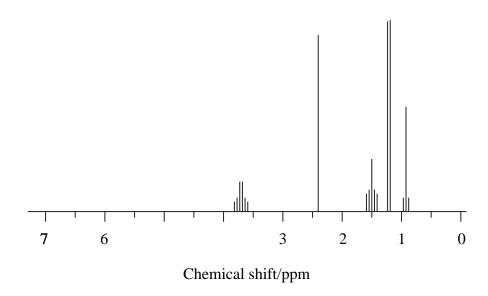


What can be deduced about the structures of \boldsymbol{X} and \boldsymbol{Y} using all this information and the data booklet? Justify your answer.

(4)

(b) Below are the nmr spectra of \boldsymbol{X} and \boldsymbol{Y} .

nmr spectrum of X



nmr spectrum of Y

