

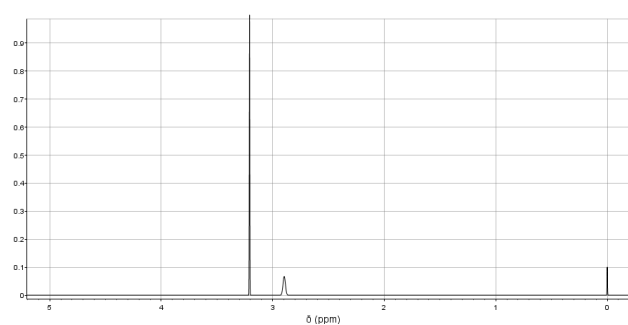
**VCE Chemistry: Unit 3**

**Worksheet 10 – Mixed Spectroscopy**

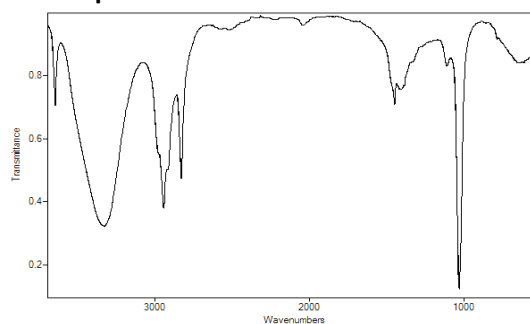
Compound A and B were analysed by  $^1\text{H}$  NMR spectroscopy and the two spectrums were generated.

**Compound A**

**$^1\text{H}$  NMR Spectrum**

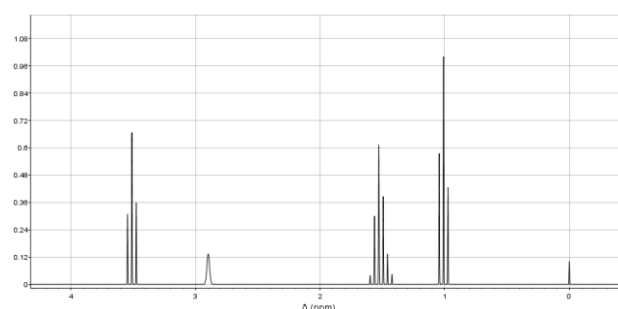


**IR Spectrum**

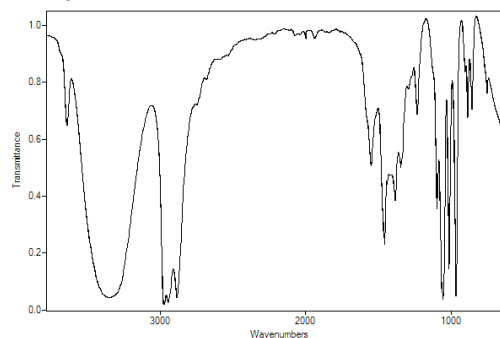


**Compound B**

**$^1\text{H}$  NMR Spectrum**



**IR Spectrum**



a) From the IR spectrums, what can you conclude about compound A and compound B? \_\_\_ / 2 marks

b) What is the fingerprint region? When is it useful to use information in this region? \_\_\_/ 2marks

c) From the  $^1\text{H}$  NMR spectrum for compound A and compound B, what can you conclude? \_\_\_/ 2marks

d) Using the information from the above spectrums, identify compound A and compound B. Provide the systematic names for both compounds. \_\_\_/ 2marks

e) Explain what the term chemical shift means. \_\_\_/ 2 marks

f) Explain why hydrogen experiences splitting in high resolution NMR. \_\_\_/ 2 marks

g) What would happen to the  $^1\text{H}$  NMR spectrum if a stronger magnet were used in the analysis?

\_\_\_/ 1 mark