Nuclear Magnetic resonance spectroscopy – A2 2022 Chemistry P2

1. June/2022/Paper_7405/2/No.6

0 6 This question is about compound **X** with the empirical formula C_2H_4O

Figure 2 shows the infrared spectrum of **X**.

Figure 3 shows the ^{13}C NMR spectrum of **X**.

The ^{1}H NMR spectrum of **X** shows four peaks with different chemical shift values. **Table 3** gives data for these peaks.

Figure 2

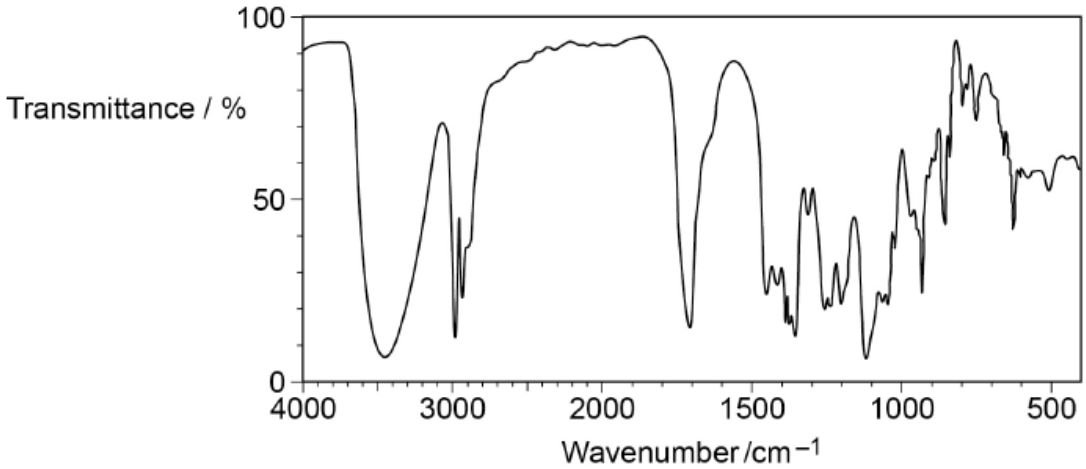

Figure 3

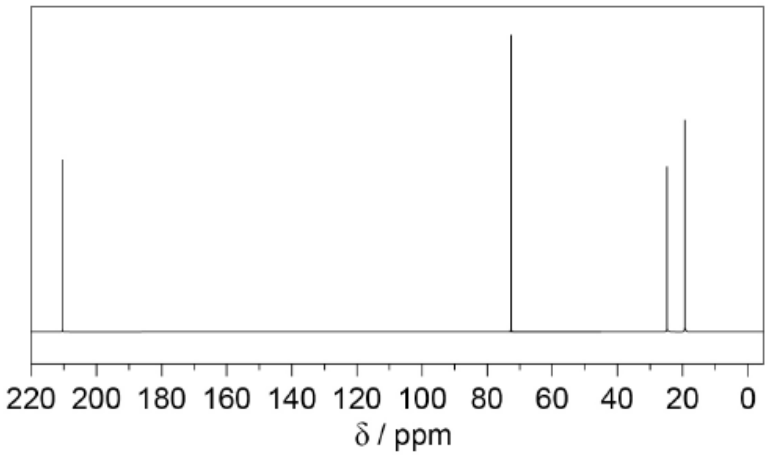

Table 3

Chemical shift δ / ppm	3.9	3.7	2.1	1.2
Splitting pattern	quartet	singlet	singlet	doublet
Integration value	1	1	3	3

Show how information from **Figure 2**, **Figure 3** and **Table 3** can be used to deduce the structure of compound **X**.

[6 marks]