

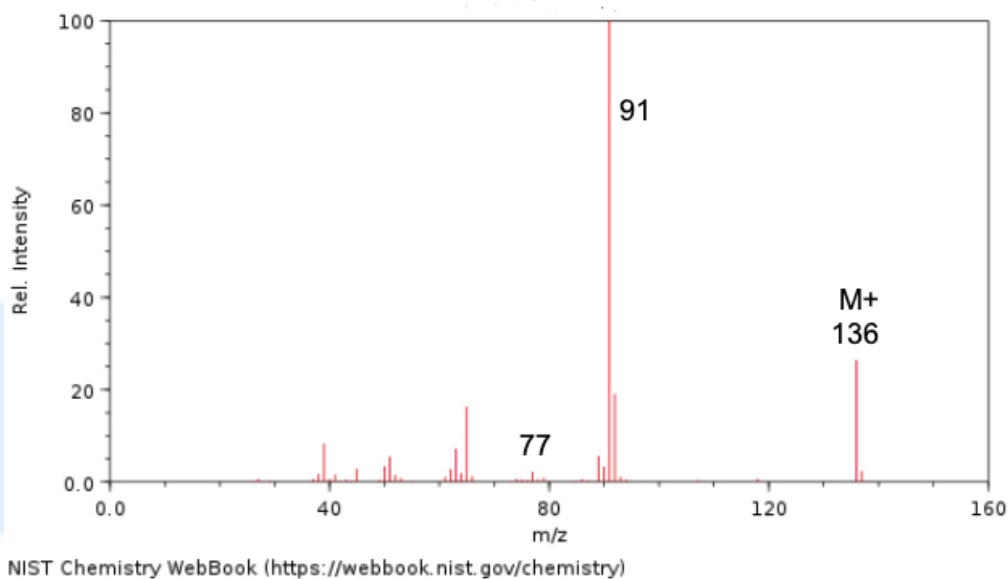
SL & HL Spectroscopic identification of organic compounds: Question 10

Identify **Compound J** from the data (a – d) given and explain how you arrived at your answer

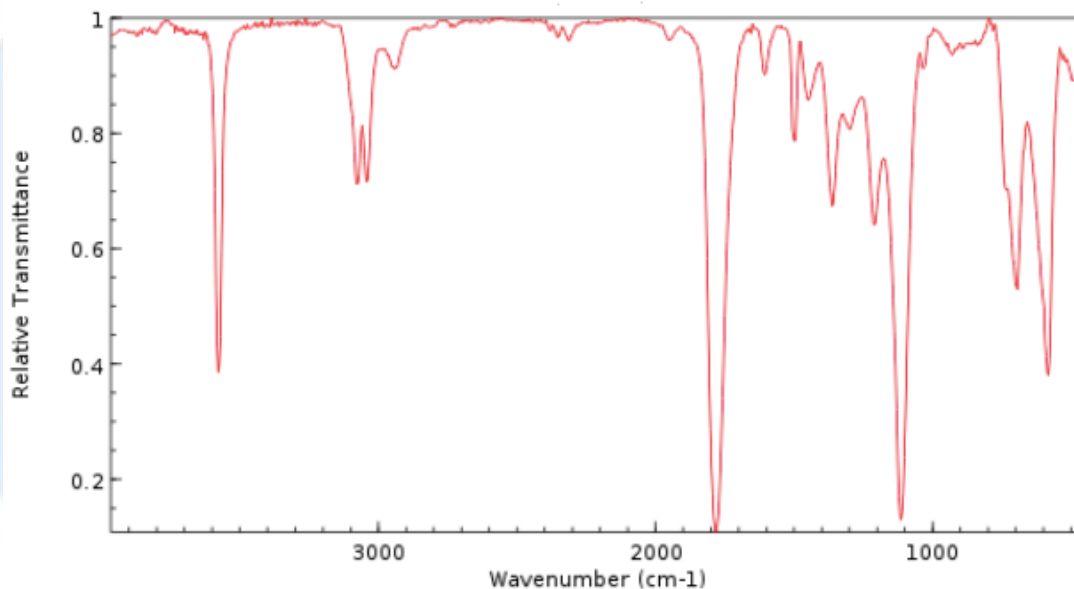
(a) Elemental analysis of **Compound J**

Element	Percentage by mass
Carbon	70.56
Hydrogen	5.93
Oxygen	23.51

(b) Mass spectrum of **Compound J**



(c) Infrared spectrum of **Compound J**



NIST Chemistry WebBook (<https://webbook.nist.gov/chemistry>)

Note that this spectrum is in the gas phase. In the liquid phase there is also a broad absorption present, centred just below 3000 cm⁻¹.

(d) Information about **Compound J** from ¹H NMR spectrum

Position of signal / δ ppm	Integration trace
3.7	2
7.4	5
10.8	1