

**GCE A level Chemistry A (H432)**  
**H432/02 Synthesis and analytical techniques**

**Question Set 26**

1\*. Analysis of an unknown organic compound produced the following results.

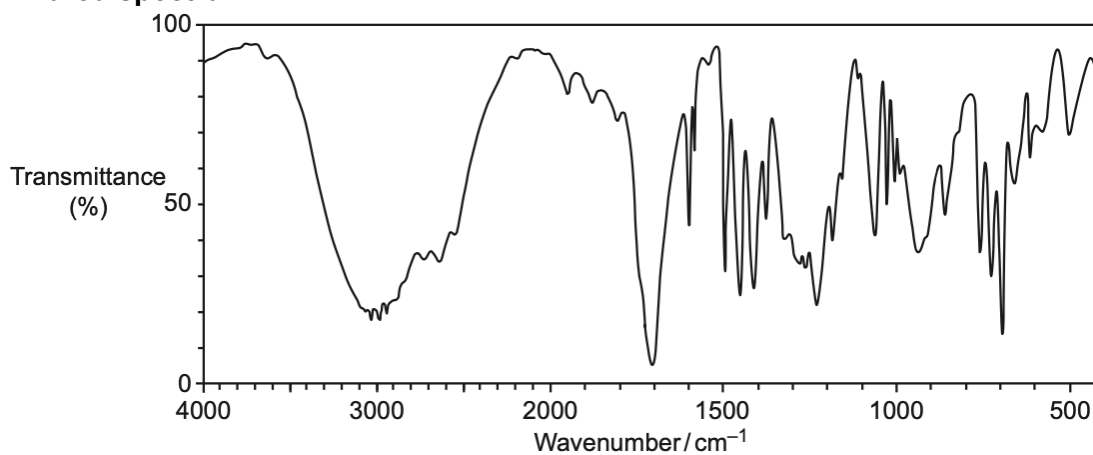
**Elemental analysis by mass**

C: 73.17%; H: 7.32%; O: 19.51%

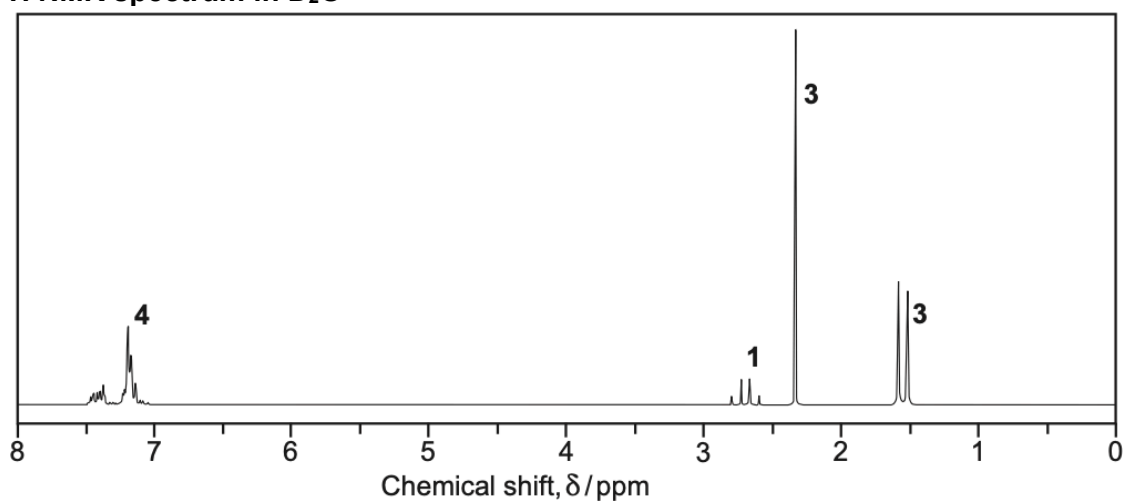
**Mass spectrum**

Molecular ion peak at  $m/z = 164.0$

**Infrared spectrum**



**<sup>1</sup>H NMR spectrum in D<sub>2</sub>O**



The numbers by the peaks are the relative peak areas.

Use the results to suggest **one** possible structure for the unknown compound.

Show **all** your reasoning.

[6]

**Total Marks for Question Set 26: 6**

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