

AS level Chemistry A

H032/02 Depth in chemistry

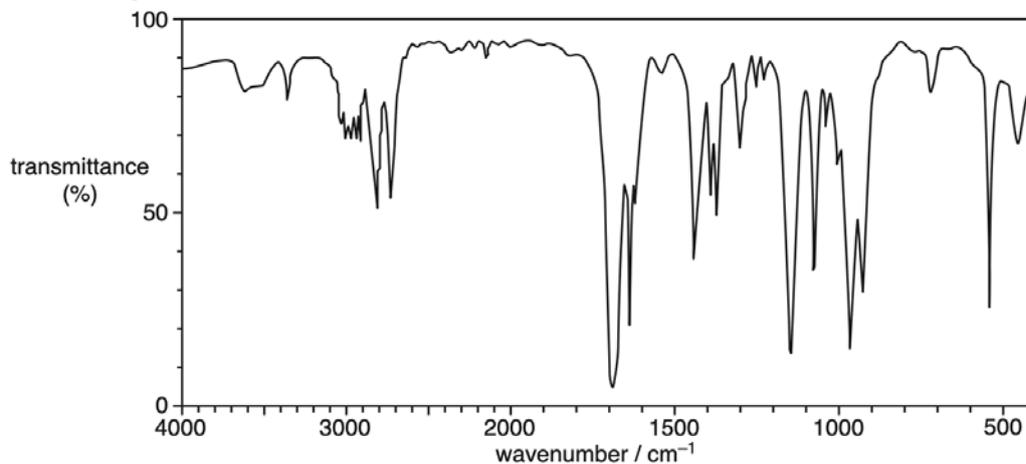
Question Set 13

1. Compound **F** is a *trans* stereoisomer which is a useful intermediate in organic synthesis.

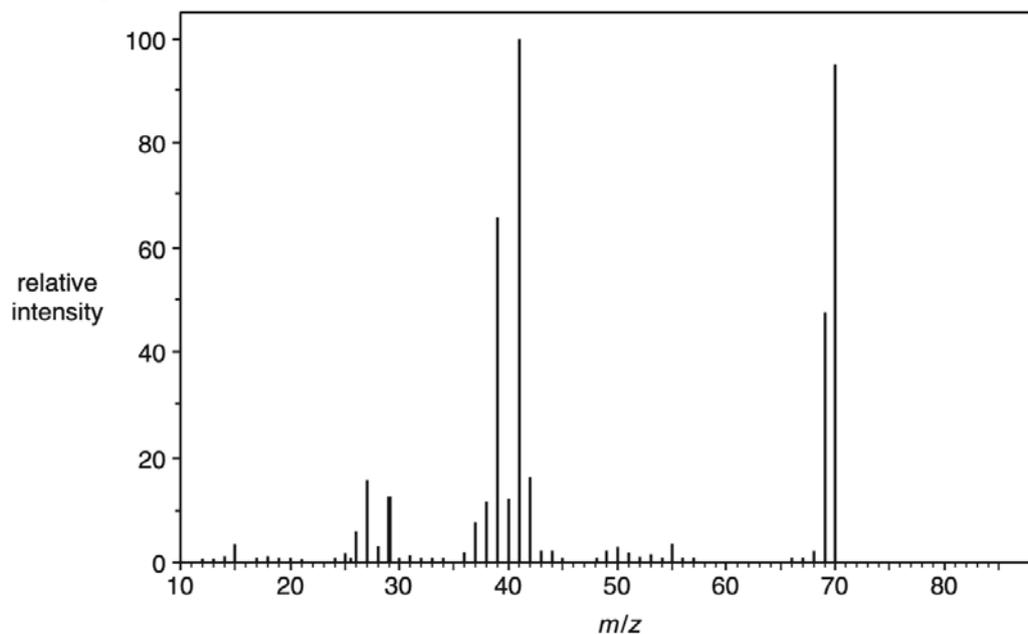
The results of elemental and spectral analysis of compound **F** are shown below.

Percentage composition by mass: C, 68.6 %; H, 8.6 %; O, 22.8 %.

Infrared spectrum



Mass spectrum



In the mass spectrum, the peak with the greatest relative intensity is caused by the loss of a functional group from the molecular ion of compound **F**.

Determine the structure of compound **F**.

Explain your reasoning and show your working.

[6]

Total Marks for Question Set 7: 6

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