Intermolecular Forces

Question Paper

Level	A Level
Subject	Chemistry
Exam Board	Edexcel
Topic	Bonding & Structure
Sub Topic	Intermolecular Forces
Booklet	Question Paper
Paper Type	Open-Response

Time Allowed: **8 minutes**

Score: **/6**

Percentage: **/100**

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	777.5%	70%	62.5%	57.5%	45%	<45%

1 The boiling temperatures of fluorine and two of its compounds are given below.

Substance	F_2	CH_3F	HF
T_b/K	85	195	293

(a) A molecule of F_2 has 18 electrons.

Which intermolecular force depends to a large extent on the number of electrons in the molecule?

(1)

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(b) Calculate the number of electrons in a molecule of CH_3F.

(1)

(c) Explain why the boiling temperature of CH_3F is greater than that of F_2, referring to the intermolecular forces present.

(1)

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(d) Explain why the boiling temperature of HF is the highest in the series.

(2)

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(e) Explain why the values of the boiling temperatures for Cl_2, CH_3Cl and HCl do not follow the same trend as F_2, CH_3F and HF.

(1)

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(Total for Question = 6 marks)