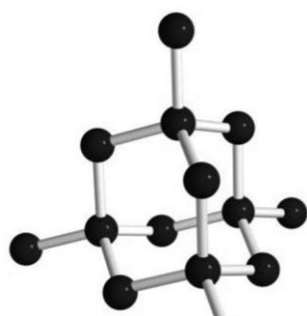


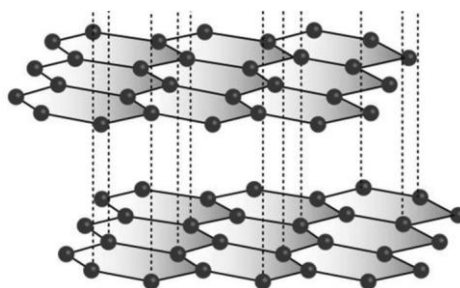
**GCSE Chemistry A (Gateway Science)**  
**J248/03 C1-C3 and C7 Higher (Higher Tier)**

**Question Set 23**

- 1 (a) The diagrams show the structures of two forms of carbon.



**diamond**



**graphite**

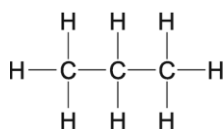
- Graphite is a good conductor of electricity.
- Diamond does **not** conduct electricity.

Use ideas about structure and bonding in diamond and graphite to explain these observations.

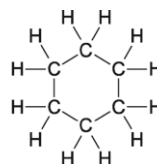
[3]

- (b) Carbon can form many thousands of different compounds.

Two examples are shown below.



**propane**



**cyclohexane**

Why can carbon form many thousands of different compounds?

[1]

- (c) Ethanol contains carbon.

Look at some information about ethanol.

- Melting point =  $-114^{\circ}\text{C}$
- Boiling point =  $78^{\circ}\text{C}$

Predict the state of ethanol at  $25^{\circ}\text{C}$ . How can you tell?

[2]

**Total Marks for Question Set 23: 6**



---

# OCR

Oxford Cambridge and RSA

## **Copyright Information**

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website ([www.ocr.org.uk](http://www.ocr.org.uk)) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact The OCR Copyright Team, The Triangle Building, Shaftesbury Road, Cambridge CB2 8EA.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge