

## **Giant covalent bonding**

1. This question is about diamond and graphite.

a. Explain the structure and bonding in diamond (4)

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b. Use your answer to explain the following properties of diamond

i. Melting and boiling point (3)

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ii. Hardness (3)

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iii. Electrical conductivity (2)

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c. Explain the structure and bonding in graphite (4)

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d. Use your answer to explain the following properties of graphite

i. Melting and boiling point (3)

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ii. Electrical conductivity (3)

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iii. Use as a machine lubricant (2)

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e. Compare the melting points and electrical conductivity of C<sub>60</sub>

fullerene and graphite (4)

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