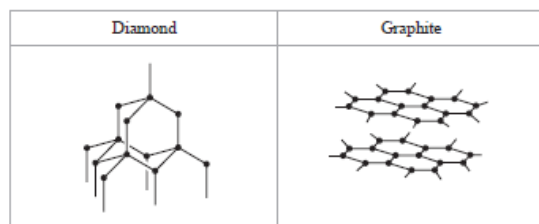


# GRTT INTERNATIONAL GCSE CHEMISTRY

## ACTIVITY 1 - QUESTION

6 Diamond and graphite are two naturally-occurring forms of carbon.

The diagrams below show the arrangement of the carbon atoms in diamond and in graphite. The black dots (•) represent carbon atoms.



(a) Name the type of structure in diamond and explain, in terms of its bonding, why diamond has a high melting point.

(4)

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(b) Explain, in terms of its structure, why graphite can act as a lubricant.

(2)

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(c) The structure of graphite has one feature in common with that of metals. This feature allows graphite to conduct electricity.

Suggest what this feature is and why it allows graphite to conduct electricity.

(2)

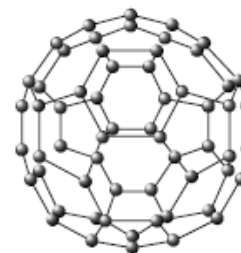
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(d) In 1985, a new form of carbon was discovered. It was called buckminsterfullerene after the architect Buckminster Fuller, who designed buildings with complex geometric shapes.

Buckminsterfullerene ( $C_{60}$ ) has a simple molecular structure containing 60 carbon atoms per molecule. It looks a little bit like a football.



Suggest why buckminsterfullerene has a much lower melting point than diamond.

(2)

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