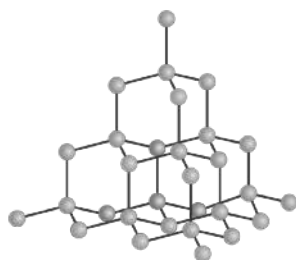
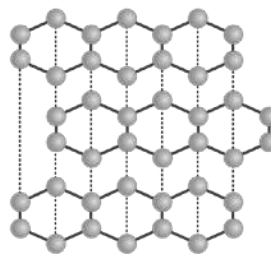


0	1
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The element carbon comes in different forms. The structures of two forms of carbon, graphite and diamond, are shown below. Although they are both forms of carbon, graphite and diamond have different properties.



Diamond



Graphite

0	1	.	1
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Diamond is much harder than graphite. Graphite can conduct electricity but diamond cannot. Explain why. [6 marks]

Because layers of carbon atoms in graphite can either move or slide [1]

This is because there are only weak intermolecular forces or weak forces between the layers [1]

Diamond: in diamond each carbon atom is strongly (covalently) bonded to 4 others [1]

So no carbon atoms are able to move or slide [1]

Graphite: graphite has delocalised or free electrons or a sea of electrons [1]

Which can carry current would charge through the structure [1]

Diamond has no delocalised electrons [1]

(Total 6 marks)

End

TOP TIP : You can say that all of the electrons in the outer shell are used in bonding. The exam board is fussy about you saying that the electrons can move through the structure, that's why it is underlined in the answers to the right.