

Many different materials are needed to build a car.



(a) (i) Suggest a property of glass that makes it useful for making a car windscreen.

..... [1]

(ii) Some car bodies are now built from aluminium instead of steel.

One advantage of using aluminium is that it is less dense than steel.

Write down **one other advantage** of building car bodies from aluminium instead of steel.

..... [1]

(b) Look at the table.

It shows information about some of the materials used to build a car.

Material	Density in g/cm <sup>3</sup>	Electrical conductivity	Flexibility
aluminium	2.7	very high	low
glass	2.5	very low	low
PVC	1.4	very low	high
steel	7.8	high	low

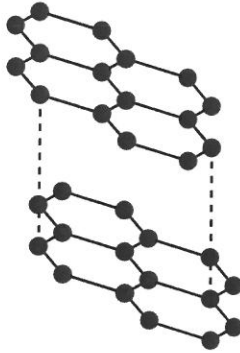
Explain why PVC is used for covering the electrical wires in a car.

Use the information from the table.

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.....  
..... [2]

[Total: 4]

Graphite is one of the allotropes of carbon.



(a) Graphite is used to make pencil leads.

Explain why the properties of graphite make it suitable for pencil leads.

.....  
.....  
.....  
..... [2]

(b) Graphite is used as an electrode in electrolysis.

This is because it conducts electricity and has a high melting point.

(i) Explain why graphite can conduct electricity. Use the diagram to help you.

.....  
..... [1]

(ii) Explain why graphite has a high melting point. Use the diagram to help you.

.....  
.....  
.....  
..... [2]

[Total: 5]

Paraffin is a liquid fuel.

Paraffin releases heat energy when it burns in air.

Jenna wants to find out how much energy is released when she burns 1 g of paraffin.

She decides to use the paraffin to heat some water.

Write about how she does the experiment. You may wish to include a labelled diagram.

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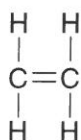
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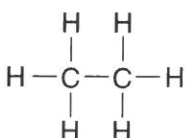
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This question is about compounds containing carbon.

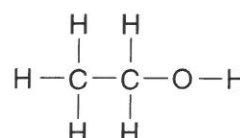
Look at the displayed formulas of some compounds.



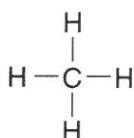
compound A



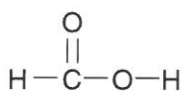
compound B



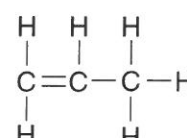
compound C



compound D



compound E



compound F

(a) What is the **molecular formula** for compound B?

.....

[1]

(b) Explain why compound B is a hydrocarbon but compound C is not a hydrocarbon.

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.....  
.....  
.....

[3]

(c) Two compounds are **unsaturated**.

Which two?

..... and .....

[1]

[Total: 5]