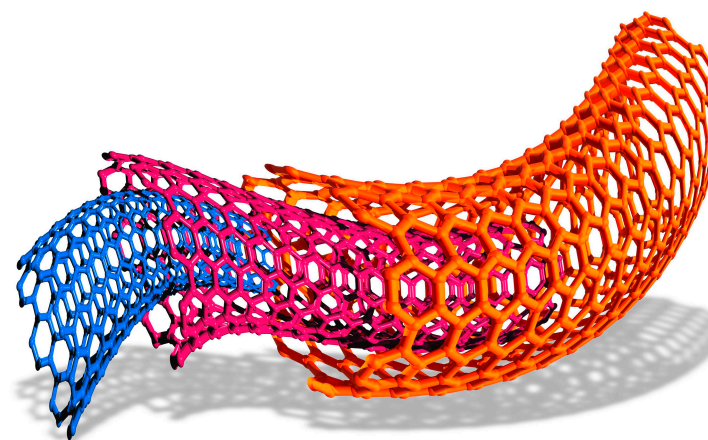


Interactive Example Candidate Responses

Paper 3 (May / June 2016), Question 4

Cambridge IGCSE™
Chemistry 0620



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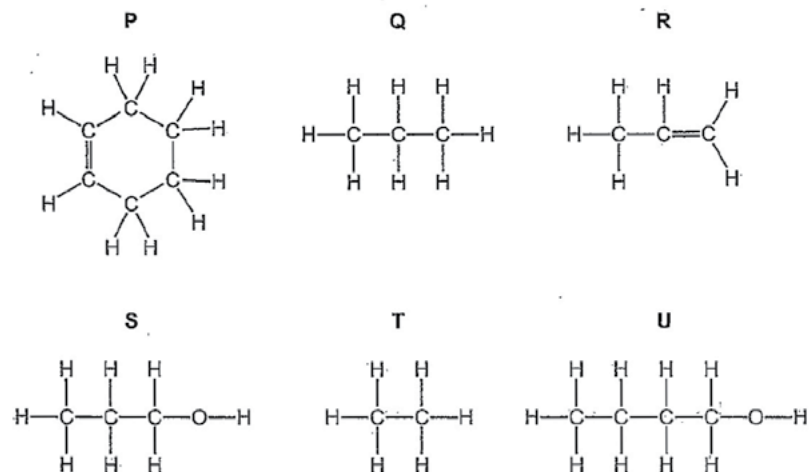
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4 The structures of some organic compounds are shown.



(a) (i) Which **two** of these compounds are alcohols?

Explain your answer.

S and U, they are alcohols because they belong to the same homologous series and have the same functional group. [2]

(ii) Which **two** of these compounds are saturated hydrocarbons?

Q and T. [1]

(b) Methanol and ethanol are alcohols in the same homologous series.

Complete the following sentence about a homologous series using words from the list.

alcohols chemical compounds elements
 functional mixtures physical

A homologous series is a family of similar compounds with similar physical properties due to the same functional group. [3]

Select page

Your Mark

4(a)(i)

4(a)(ii)

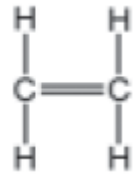
4(b)

4(c)(i)

4(c)(ii)

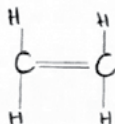
4(c)(iii)

4(c)(iv)

Q4	Mark scheme
(a)(i)	S and U; both have OH (group);
(a)(ii)	Q and T;
(b)	compounds; chemical; functional;
(c)(i)	
(c)(ii)	aqueous bromine is added to (test tube of) ethene/ aqueous bromine is orange; aqueous bromine turns colourless/solution turns colourless;
(c)(iii)	high temperature/heat;
(c)(iv)	$C_{13}H_{28}$;

(c) Ethene is an alkene.

(i) Draw the structure of ethene showing all atoms and all bonds.



[1]

(ii) Describe how aqueous bromine is used to show that ethene is an unsaturated compound.

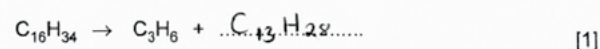
Aqueous bromine is mixed with ethene and it becomes decolourised showing it is an unsaturated compound. [2]

(iii) Ethene is manufactured by cracking.

State the conditions needed for cracking.

There has to be a heat supply. [1]

(iv) Complete the chemical equation for the cracking of hexadecane, $C_{16}H_{34}$, to form propene and one other hydrocarbon.



[1]

[Total: 11]

Select
page

Your
Mark

4(a)(i)

4(a)(ii)

4(b)

4(c)(i)

4(c)(ii)

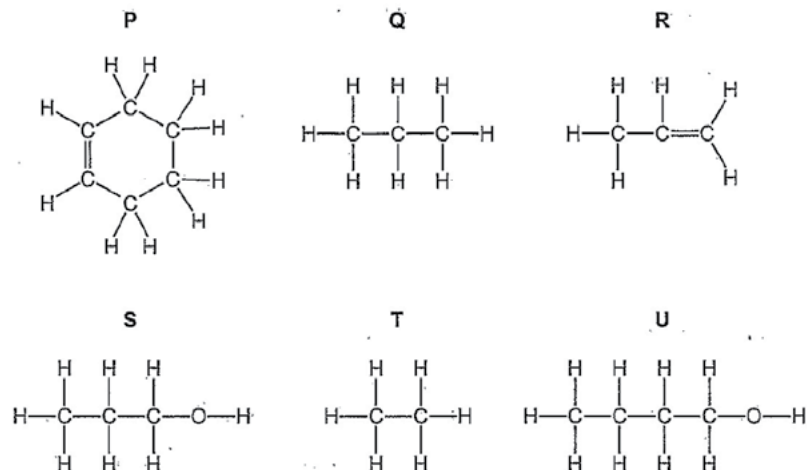
4(c)(iii)

4(c)(iv)

Q4 Mark scheme

(a)(i)	S and U; both have OH (group);
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4 The structures of some organic compounds are shown.



(a) (i) Which **two** of these compounds are alcohols?

Explain your answer.

S and U because these
structures are drawn like this. [2]

(ii) Which **two** of these compounds are saturated hydrocarbons?

Q & R [1]

(b) Methanol and ethanol are alcohols in the same homologous series.

Complete the following sentence about a homologous series using words from the list.

alcohols chemical compounds elements
 functional mixtures physical

A homologous series is a family of similar mixtures, with similar
physical properties due to the same elements group. [3]

Select
page

Your
Mark

4(a)(i)

4(a)(ii)

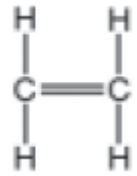
4(b)

4(c)(i)

4(c)(ii)

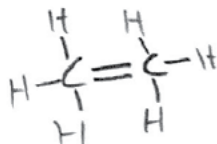
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(c)(iv)	$C_{13}H_{28}$;

(c) Ethene is an alkene.

(i) Draw the structure of ethene showing all atoms and all bonds.



[1]

(ii) Describe how aqueous bromine is used to show that ethene is an unsaturated compound.

Add Aqueous bromine to the ethene
and add little drops of acid.

[2]

(iii) Ethene is manufactured by cracking.

State the conditions needed for cracking.

Stable

[1]

(iv) Complete the chemical equation for the cracking of hexadecane, $C_{16}H_{34}$, to form propene and one other hydrocarbon.



[1]

[Total: 11]

Select
page

Your
Mark

4(a)(i)

4(a)(ii)

4(b)

4(c)(i)

4(c)(ii)

4(c)(iii)

4(c)(iv)

Q4 Mark scheme

(a)(i)	S and U; both have OH (group);
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(c)(iv)	$C_{13}H_{28}$;

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