

MARK SCHEME

GCSE

CHEMISTRY

AQA - TRIPLE SCIENCE

C7 - TEST 3

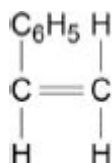
ORGANIC CHEMISTRY

Intermediate

Mark schemes

1.

(a)



1

(b) polymerisation

1

(c) monomers

1

many

1

polymers

1

must be in this order

(d) **Level 2:** Scientifically relevant features are identified; the way(s) in which they are similar / different is made clear and (where appropriate) the magnitude of the similarity / difference is noted.

3-4

Level 1: Relevant features are identified and differences noted.

1-2

Level 1: Relevant features are identified and differences noted.

1-2

No relevant content

0

Indicative content

for coated paper cups – accept converse for poly(styrene)

advantages

- produced from a renewable resource
- biodegradable so breaks down

disadvantages

- higher energy costs
- greater use of fossil fuels and consequent pollution
- not recyclable so uses landfill

[9]

2.

(a) fermentation

1

- (b) (i) turns cloudy / milky / white
ignore bubbles
 because carbon dioxide is produced
allow CO₂ produced
- (ii) filter paper

1
1
1

[4]

3. (a) C₅H₁₂

1

(b) 2:5

1

(c) **A**

1

(d) **A**

1

(e) carbon dioxide

1

water

1

(f) propane

1

(g) (8 × 1) + (3 × 12)

1

= 44

1

an answer of 44 scores 2 marks

[9]

4. (a) (i) mixture (of different substances)

1

(ii) boiling (points)

1

(iii) distillation

1

(b)	(i)	combustion	1
	(ii)	(reactant)	
		oxygen	
		<i>allow correct formulae</i>	1
		(products)	
		<i>products in any order</i>	
		carbon dioxide	
		<i>allow carbon or carbon monoxide</i>	
		and	
		water	
		<i>allow water vapour or steam or hydrogen oxide</i>	1
	(iii)	(burning sulfur) produces sulfur dioxide / SO_2	
		<i>allow it / sulfur reacts with oxygen ignore sulfur oxide</i>	1
		causes acid rain	1
(c)	(i)	propane is a fuel	1
	(ii)	double bond drawn between carbon atoms	
		<i>do not allow any other bonds or symbols</i>	1
	(iii)	orange to colourless	1
	(iv)	poly(pentene)	
		<i>allow polymer(s)</i>	1
			[12]

5.	<p>(a) oxygen <i>allow correct answer shown in box if answer line blank</i></p>	1	
	<p>(b) vinegar <i>allow correct answer shown in box if answer line blank</i></p>	1	
	<p>(c) C</p>	1	
	<p>(d) Ester</p>	1	
	<p>(e) pleasant smell volatile <i>allow low boiling point / evaporates</i></p>	1	
			[6]
6.	<p>(a) (i) bar drawn between 84 and 86</p>	1	
	<p>(ii) sulfur dioxide linked to acid rain</p>	1	
	<p>carbon particles linked to global dimming</p>	1	
	<p>(b) (i) any one from:</p> <ul style="list-style-type: none"> • plants / trees <u>absorb</u> (carbon dioxide) • coal ' <u>locks up</u>' (carbon dioxide) 	1	
	<p>(ii) it <u>increases</u> the amount (of CO₂)</p> <p>because carbon in coal (forms carbon dioxide) <i>accept because carbon / coal burns / reacts <u>with oxygen</u> (to produce CO₂)</i></p>	1	
			[6]
7.	<p>(a) (i) distillation</p>	1	
	<p>(ii) condense (at different temperatures) <i>accept they / fractions / hydrocarbons have different boiling points ignore melting point / size of molecule</i></p>	1	

(b) contains hydrocarbons

1

has a high boiling point

1

(c) C_5H_{12}

1

[5]

8.

(a) hydrogen

ignore formulae

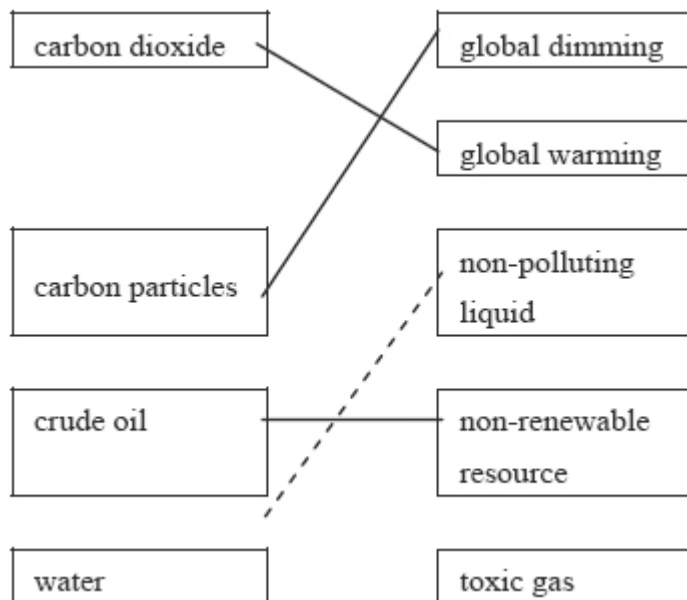
1

(b) any **two** from:

- different sized molecules / more or less (carbon) atoms (in molecules)
ignore different densities
- fuels have different boiling points
- fuels condense at different temperatures

2

(c)



all three correct = 3 marks

two correct = 2 marks

one correct = 1 mark

3

[6]

9.

- (a) (i) fractional distillation
both words required
accept fractionation 1
- (ii) any **one** from
ethane
propane
butane 1
- (b) (i) carbon dioxide 1
water (vapour)
accept steam
do not credit symbols 1
- (ii) carbon monoxide
accept CO
do not credit soot or carbon oxide 1

[5]