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Examiners' Report
June 2025

GCSE Combined Science 1SC0 2CF

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June 2025

Publications Code 1SC0_2CF_2506_ER

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Introduction

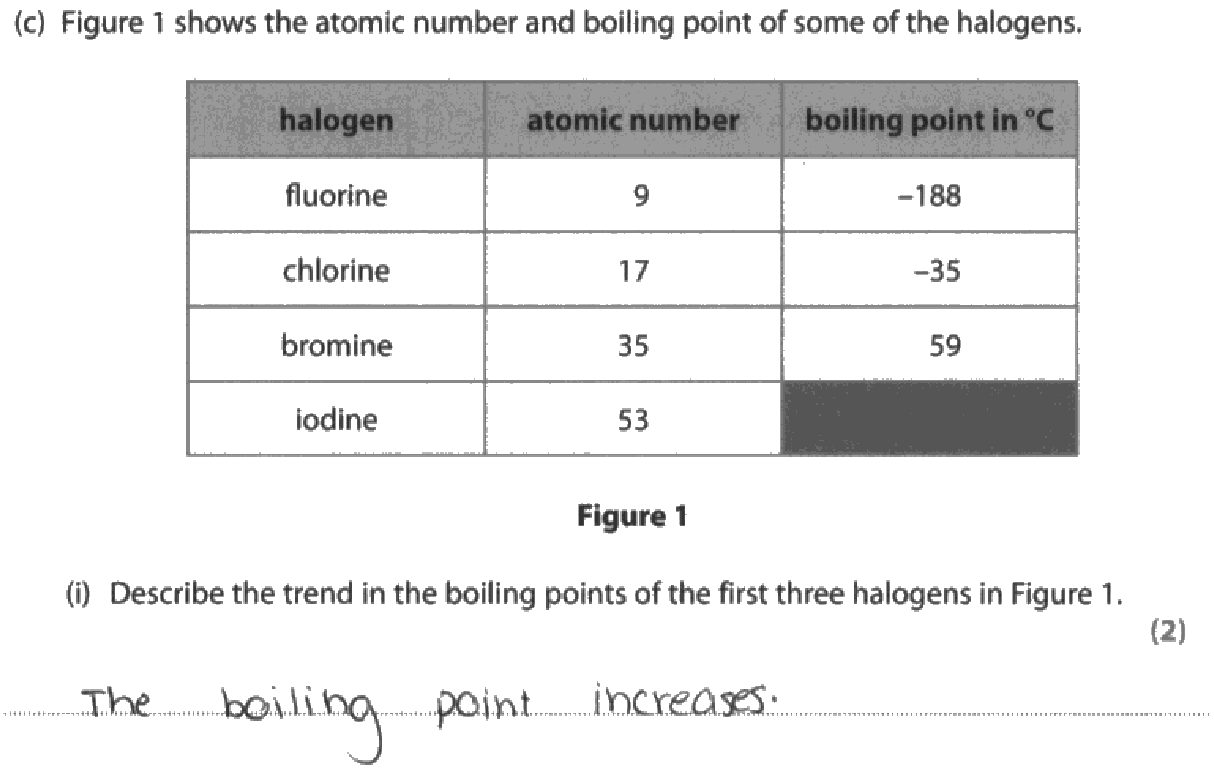
This is the second of two Chemistry Foundation Tier papers in the GCSE Combined Science suite. These questions also form six of the ten questions in GCSE Chemistry Foundation Tier paper 2. Some of the later questions are also found in the Higher Tier Combined Science and Chemistry papers.

Question 1(b)(ii)

It appeared that many of the candidates did not know the test for chlorine, with many writing arbitrary combinations of the colours listed. Some who apparently did inverted the colours. Some confused the colours and uses of litmus with Universal Indicator, phenolphthalein and methyl orange. Frequent errors included orange to red, yellow to red, orange to yellow and yellow to orange. Only a minority mentioned white, indicating limited recognition of the bleaching effect.

Question 1(c)(i)

Most candidates could correctly link the increase in boiling point to increase in atomic number, and often those that did not scored for identifying that the boiling point increased. One issue was the wording of answers – saying that the boiling points 'got hotter' and the phrase 'as you goes down' instead of atomic number increasing. Some candidates just quoted data from the table without giving a trend. Several candidates linked trend to reactivity and boiling point, rather than atomic number. There was some confusion about negative numbers to positive, saying that boiling point decreased because the numbers got smaller.



(c) Figure 1 shows the atomic number and boiling point of some of the halogens.

halogen	atomic number	boiling point in °C
fluorine	9	−188
chlorine	17	−35
bromine	35	59
iodine	53	

Figure 1

(i) Describe the trend in the boiling points of the first three halogens in Figure 1.

(2)

The boiling point increases.

ResultsPlus
Examiner Comments

This scores one mark only – the boiling point does increase – but when is this? When the atomic number increases.

(c) Figure 1 shows the atomic number and boiling point of some of the halogens.

halogen	atomic number	boiling point in °C
fluorine	9	−188
chlorine	17	−35
bromine	35	59
iodine	53	

Figure 1

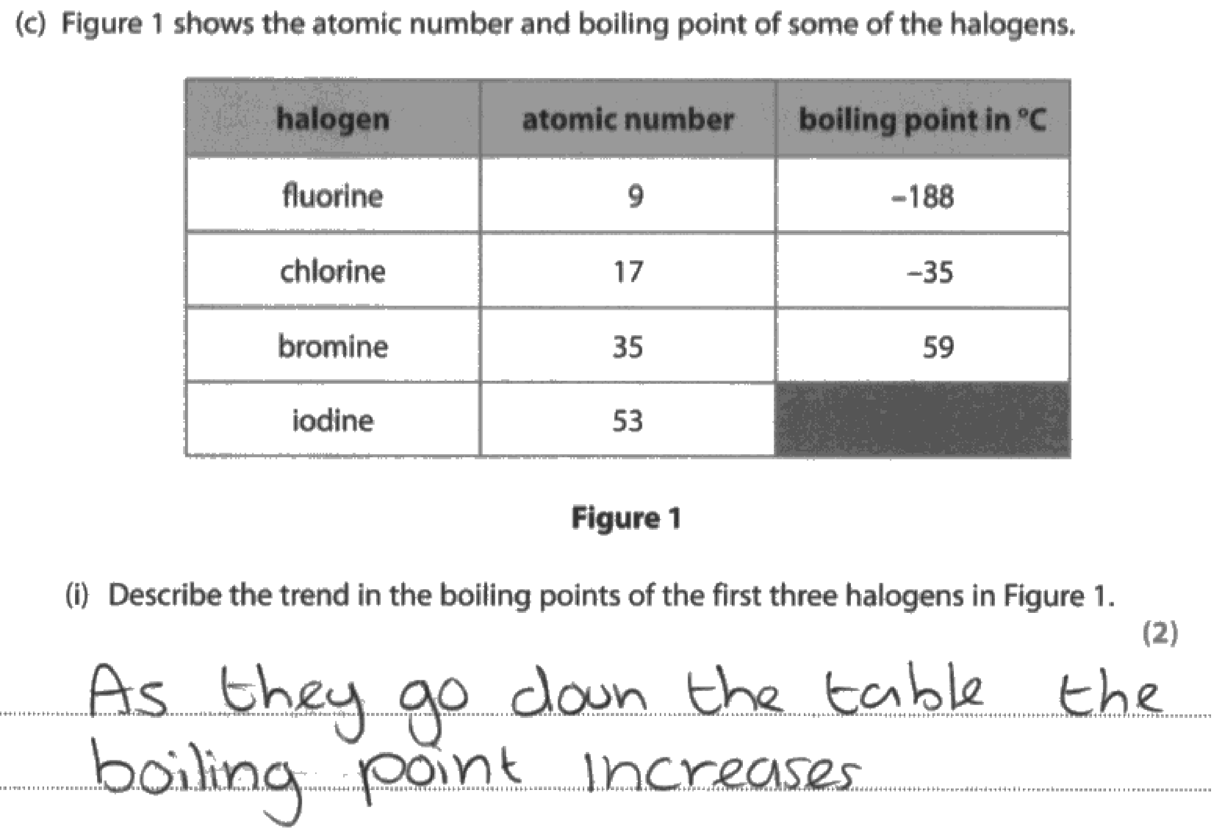
(i) Describe the trend in the boiling points of the first three halogens in Figure 1.

(2)

As the Atomic number increases, so does the boiling point.

ResultsPlus
Examiner Comments

When describing a trend, both variables (here, atomic number and boiling point) should be mentioned. This response scored two marks.



(c) Figure 1 shows the atomic number and boiling point of some of the halogens.

halogen	atomic number	boiling point in °C
fluorine	9	−188
chlorine	17	−35
bromine	35	59
iodine	53	▨

Figure 1

(i) Describe the trend in the boiling points of the first three halogens in Figure 1.

(2)

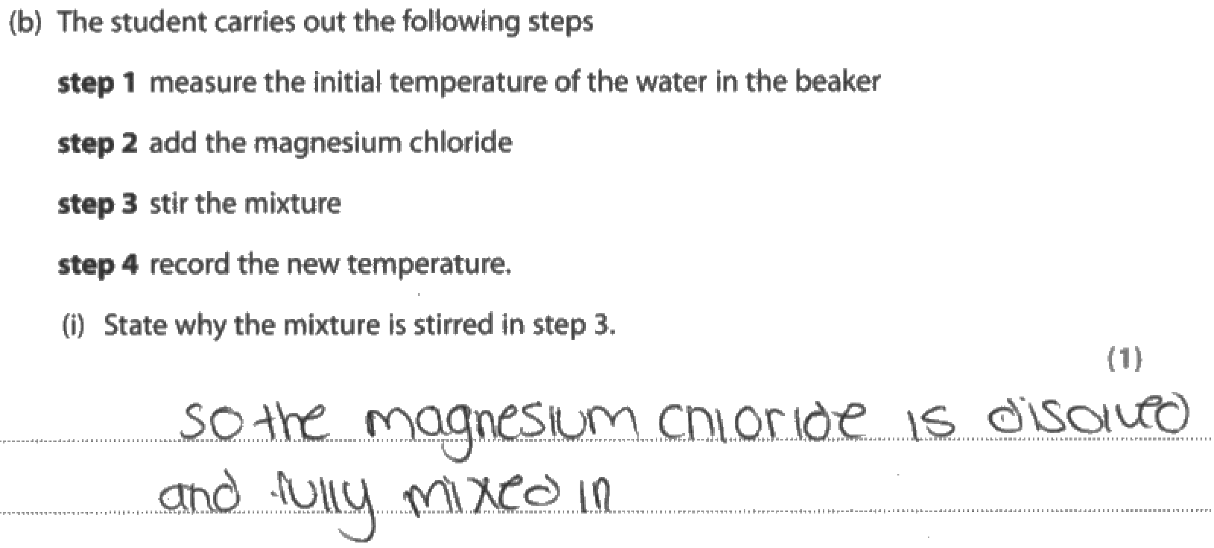
As they go down the table the boiling point increases

ResultsPlus
Examiner Comments

This answer scored one mark – 'down the table' is too vague. How were the elements arranged in the table? It is by atomic number.

Question 2(b)(i)

Most candidates were able to explain the purpose of the stirring, sometimes in colloquial terms such as ‘making it react’. Incorrect answers were mainly about making the experiment accurate/better (without explaining how) and some answers confused dissolving with melting. Some candidates gave answers such as ‘preventing it from sitting at the bottom’ without giving enough explanation as to what this meant in terms of the reaction.



(b) The student carries out the following steps

step 1 measure the initial temperature of the water in the beaker

step 2 add the magnesium chloride

step 3 stir the mixture

step 4 record the new temperature.

(i) State why the mixture is stirred in step 3.

(1)

so the magnesium chloride is disolved

and fully mixed in

ResultsPlus
Examiner Comments

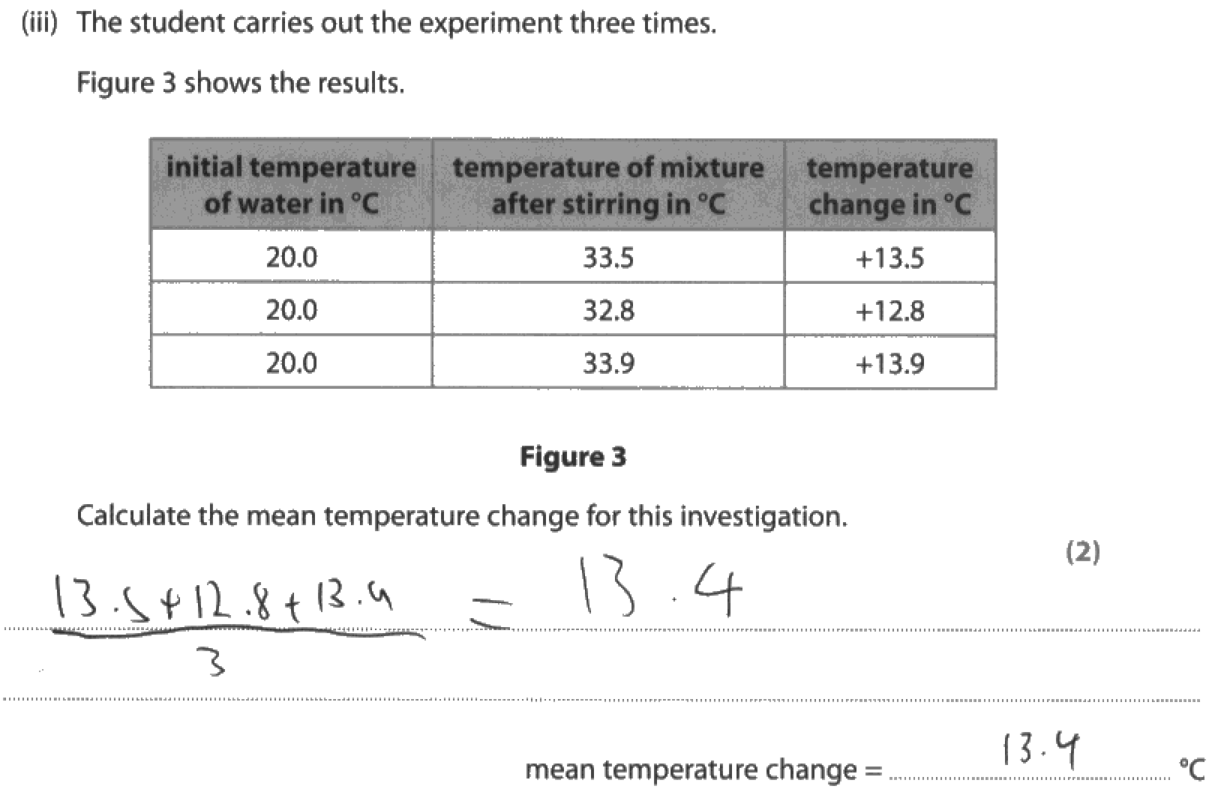
This is a good answer that states the purpose of the stirring – to mix the solid so that it dissolves. It scores one mark.

Question 2(b)(ii)

There was a reasonable response to the ideas of a lid and using a polystyrene cup or insulation. Some were unable to express this clearly enough, for example saying ‘cover the beaker’ which was not precise enough. One incorrect concept was adding more of the reactants. Another was using a water bath/Bunsen burner to maintain the temperature (or less frequently to keep the experiment cool, occasionally with ice). Another misconception was that the method had to be altered to improve how the magnesium chloride was added, in order to make the addition faster. Adding less water or changing to a conical flask were also not uncommon suggestions.

Question 2(b)(iii)

Many candidates attempted this and got it completely correct, with many pleasingly showing their working clearly. Working is important because some scored one mark for adding the values even if the division was incorrect. Quite a few had the correct idea but did not press equals before dividing by 3 resulting in an incorrect final answer. A small number divided by 2 rather than 3. Some calculated the average of the temperature of the mixture (column 2, 33.4°C) rather than the temperature change (column 3).



(iii) The student carries out the experiment three times.

Figure 3 shows the results.

initial temperature of water in °C	temperature of mixture after stirring in °C	temperature change in °C
20.0	33.5	+13.5
20.0	32.8	+12.8
20.0	33.9	+13.9

Figure 3

Calculate the mean temperature change for this investigation.

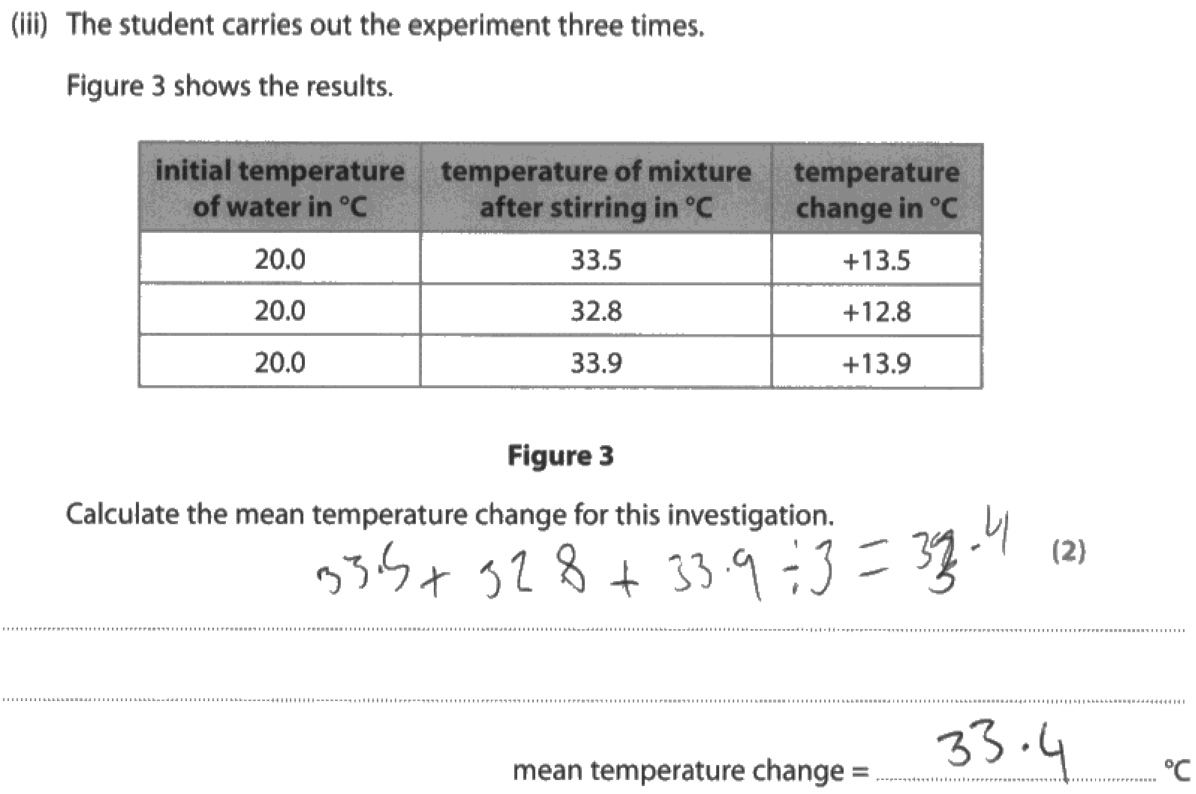
(2)

$$\frac{13.5+12.8+13.9}{3} = 13.4$$

mean temperature change = 13.4 °C

ResultsPlus
Examiner Comments

This answer fully shows the working. This is useful because if a mistake is made (there is none in this case), the examiner can see and part marks may be awarded.



(iii) The student carries out the experiment three times.

Figure 3 shows the results.

initial temperature of water in °C	temperature of mixture after stirring in °C	temperature change in °C
20.0	33.5	+13.5
20.0	32.8	+12.8
20.0	33.9	+13.9

Figure 3

Calculate the mean temperature change for this investigation. **(2)**

33.5 + 32.8 + 33.9 ÷ 3 = 33.4

mean temperature change = 33.4 °C

ResultsPlus
Examiner Comments

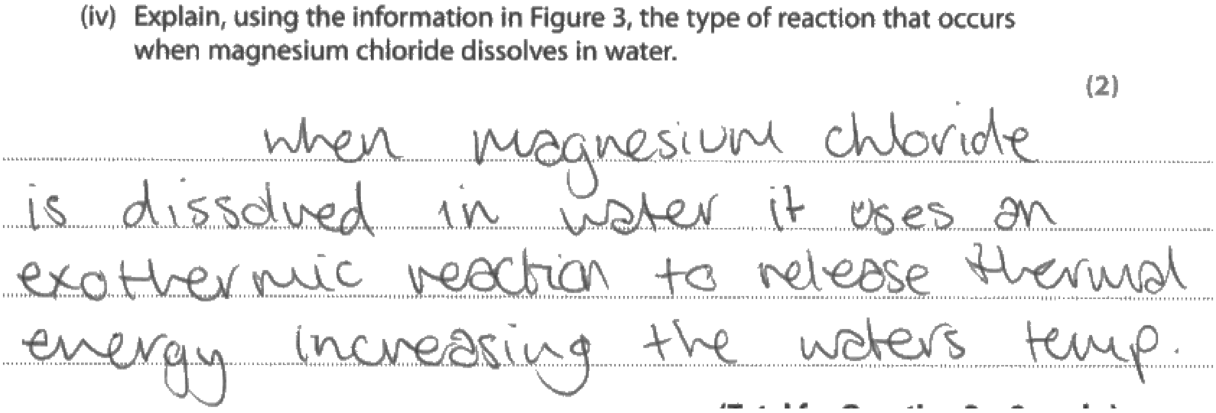
This scored one mark. The wrong temperatures have been averaged.

ResultsPlus
Examiner Tip

Double check calculations! In this case, the working is not set out clearly (it looks like only 33.9 is divided by 3) so be careful how you set out the working.

Question 2(b)(iv)

Many candidates got confused between endothermic and exothermic reactions, although most understood that exo- means gives out heat and endo- means takes it in; the issue was in applying it to the temperature increase. Some stated that energy was taken in despite observing a temperature increase. Misunderstandings around heat loss, heat gain, and the direction of energy transfer led to contradictory or inaccurate explanations. However, many who did not get full marks identified that the temperature increased. Incorrect responses included that it was: a chemical reaction, displacement, dissolution, evaporation and distillation. Others tried to give a description – fizzing, bubbling, popping etc.



(iv) Explain, using the information in Figure 3, the type of reaction that occurs when magnesium chloride dissolves in water.

(2)

when magnesium chloride is dissolved in water it uses an exothermic reaction to release thermal energy increasing the waters temp.

ResultsPlus
Examiner Comments

This is a well explained answer that scores two marks – it mentions that the type of reaction is exothermic, and explains why – because heat is released that increases the temperature.

(iv) Explain, using the information in Figure 3, the type of reaction that occurs when magnesium chloride dissolves in water.

(2)

An exothermic reaction happens as the magnesium chloride dissolved.

ResultsPlus
Examiner Comments

This scored one mark – the question says explain… the type of reaction is correct (exothermic), but there is no explanation as to the evidence for this.

(iv) Explain, using the information in Figure 3, the type of reaction that occurs when magnesium chloride dissolves in water.

(2)

~~[illegible]~~ goes fizzy when it reacts with the water.

ResultsPlus
Examiner Comments

The question says explain the type of reaction – but no reaction type has been given. It scored zero marks.

ResultsPlus
Examiner Tip

Make sure that you read the question carefully and know what you are being asked for.

Question 3(c)(i)

Many candidates grasped at the vague idea of a reaction occurring, but not necessarily being able to say what changes would then be observed. Some managed to get the colour change mark, some the oxidation mark. Unfortunately, some explained their answer by saying that ‘zinc reacts with the oxygen’ which is in the question so was not credited. Many responses were in relation to the movement of the syringe, which of course happens whether there is a reaction or not, or assumed that a gas would be produced. Incorrect observations included: steam forming, zinc cooling, bangs, liquids forming, noises, smells, zinc glowing, appearance of smoke, zinc rusting, zinc moving towards a syringe. Not many answers identified that the gas volume would decrease due to oxygen being used up during the reaction.

(c) The percentage of oxygen in air can be measured using the apparatus shown in Figure 5.

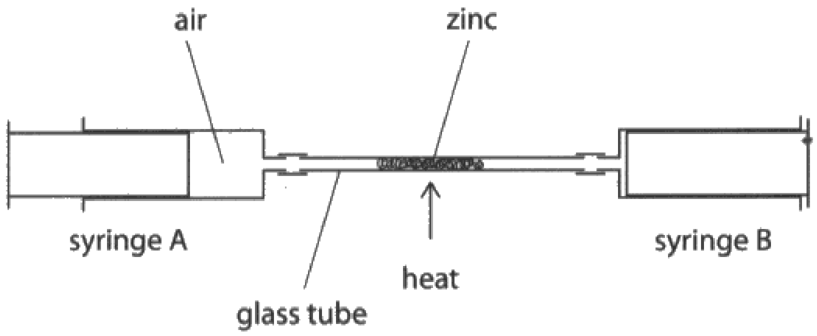


Figure 5

The oxygen in the air reacts with the heated zinc.

(i) Explain **one** change that would be seen during the reaction.

(2)

the zinc woud change colow

due to the heat and oxygen

reacting with it.

ResultsPlus
Examiner Comments

This scored one for the change in colour – but the explanation – "due to...oxygen reacting with it" cannot score because this is stated in the question.

(c) The percentage of oxygen in air can be measured using the apparatus shown in Figure 5.

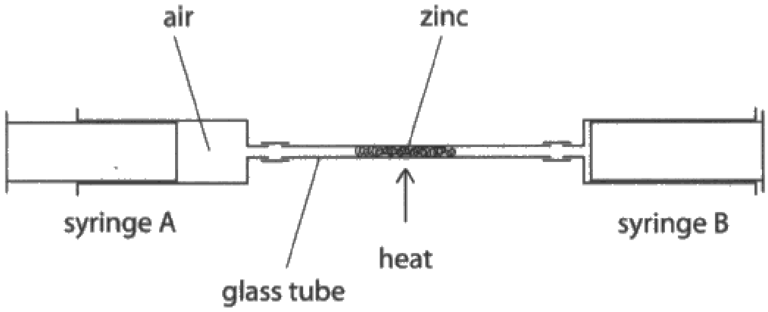


Figure 5

The oxygen in the air reacts with the heated zinc.

(i) Explain **one** change that would be seen during the reaction.

(2)

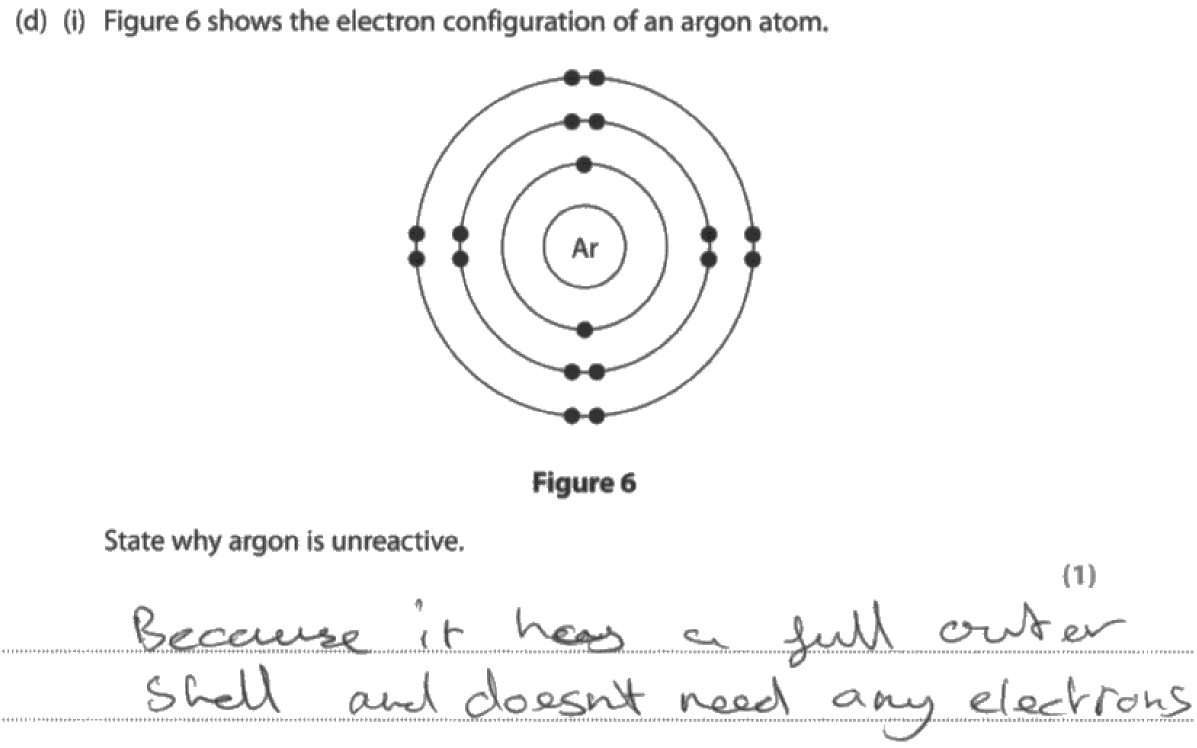
Syringe B would Start to move back as the gas makes its way through

ResultsPlus
Examiner Comments

The syringes are moved back and forth in the experiment, so this comment cannot score.

Question 3(d)(i)

Most candidates gave a good answer here, but not all expressed themselves with clarity. Some stated that ‘they had a full shell’ missing the word outer, or commented that they had ‘full outer shell**s**’. Others less convincingly mentioned ‘balanced’ or ‘even’ or ‘equal’ electrons on the shells or quoted the electronic configuration. Some answers went on to explain that an atom with a full outer shell of electrons does not ‘need’ to lose or gain electrons. Several used the word atoms when they meant electrons, or talked about neutrons or protons. Others stated that it was neutral or stated ‘because it is in group 0’. Others again just repeated the question in other words, giving answers such as: they do not react, are inert or are inactive.



(d) (i) Figure 6 shows the electron configuration of an argon atom.

Figure 6

State why argon is unreactive.

(1)

Because it has a full outer
shell and doesnt need any electrons

ResultsPlus
Examiner Comments

A 'full outer shell (of electrons)' is correct.

(d) (i) Figure 6 shows the electron configuration of an argon atom.

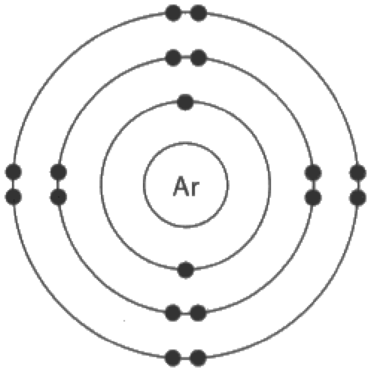


Figure 6

State why argon is unreactive.

(1)

Argon is unreactive because ~~it has~~ it is a group 0 element

ResultsPlus
Examiner Comments

Argon is in group 0 – but an answer in terms of electrons is needed – that is why Figure 6 is given.

(d) (i) Figure 6 shows the electron configuration of an argon atom.

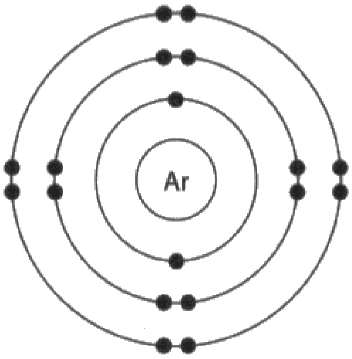


Figure 6

State why argon is unreactive.

(1)

Becaus all the outershells are full with the right amount of electrons.

ResultsPlus
Examiner Comments

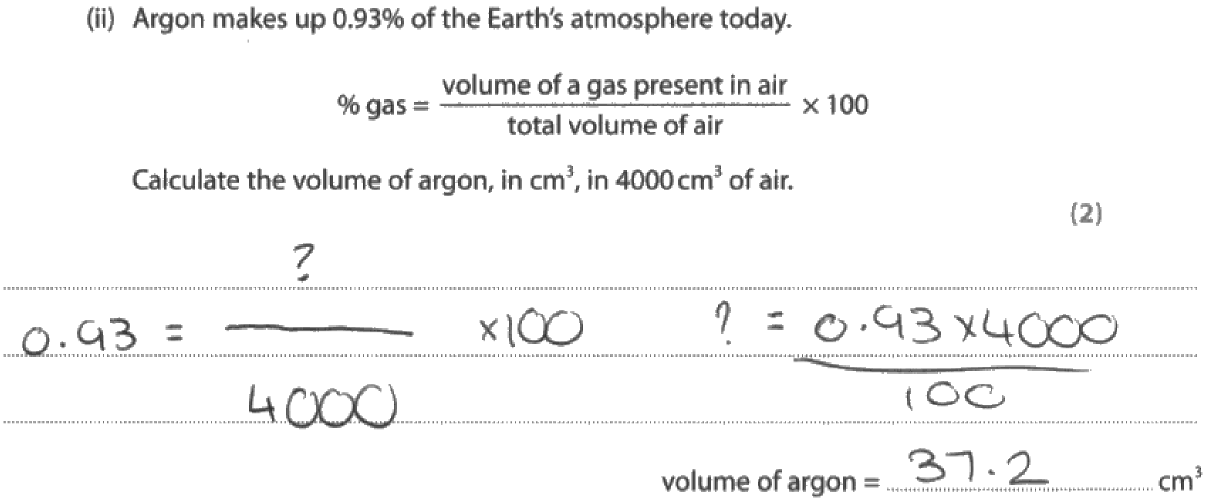
You need to express yourself carefully – the atom only has one outer shell.

Question 3(d)(ii)

Many candidates were able to access one mark by multiplying 4000 by 0.98, getting 3720, showing some understanding of the calculation process.

However, few achieved full marks due to difficulties with converting percentages and rearranging the equation, even though it was provided.

Many candidates attempted to substitute the numbers found in the question into the expression without any rearrangement. Hence, a frequent answer was 0.93/4000 and then x 100 (or occasionally /100). This gave a common incorrect response of 0.02325 – whereas about 1% of 4000 cannot, of course, be this low a volume. Several candidates had calculated the correct value and then continued with another calculation for an incorrect value on the final answer line (which is the one examiners use).



(ii) Argon makes up 0.93% of the Earth's atmosphere today.

$$\% \text{ gas} = \frac{\text{volume of a gas present in air}}{\text{total volume of air}} \times 100$$

Calculate the volume of argon, in cm^3, in 4000 cm^3 of air.

(2)

$$0.93 = \frac{?}{4000} \times 100 \qquad ? = \frac{0.93 \times 4000}{100}$$

volume of argon = 37.2 cm^3

Examiner Comments

A well set out answer showing the rearrangement of the expression.

(ii) Argon makes up 0.93% of the Earth's atmosphere today.

$$\% \text{ gas} = \frac{\text{volume of a gas present in air}}{\text{total volume of air}} \times 100$$

Calculate the volume of argon, in cm^3, in 4000 cm^3 of air.

(2)

0.93 × 4000 = 3720

3720 × 100 = 372000

volume of argon = 372 000 cm^3

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Examiner Comments

This answer has x 100, not /100. About 1% of 4000cm^3 cannot be 372000cm^3!

Question 4(a)(i)

Most candidates knew that the alkali metals were in group 1, although some suggested group 7, group 2 or group 5, or even more than one group.

Question 4(b)(i)

The colours of Universal Indicator were not at all well known, with all sorts of colours given. Whilst some got the correct change to blue, less frequently was the initial green colour correct. Most, it appeared, did not remember the reaction and it is doubtful that they understood what was happening to the water, or remembered the right colour the Universal Indicator would start at neutral and then go after adding the alkali metal.

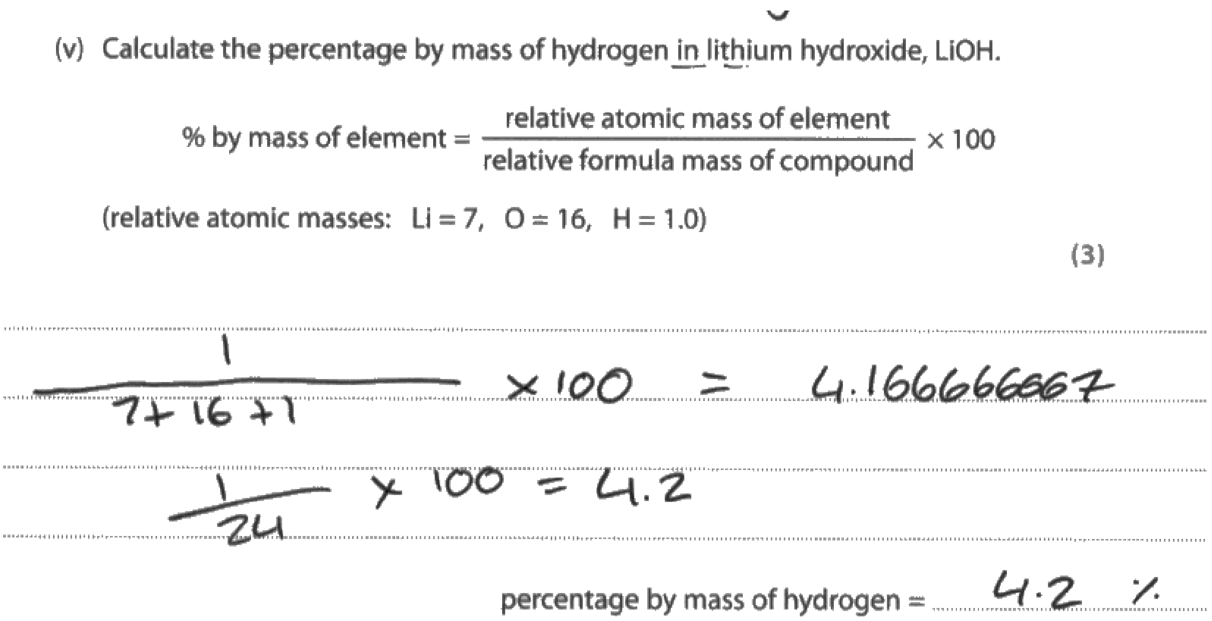
Question 4(b)(iv)

Some candidates had the idea of lost electrons, some of these identifying the idea of losing one electron. Some knew that the idea was related to electrons, but said that lithium was either losing OR gaining electrons, therefore losing the mark. Several responses suggested gaining of protons caused a positive charge. Other answers confused the process, with some incorrectly stating that an ion is formed by “gaining a positive” or by “losing an ion.”

Question 4(b)(v)

Most candidates managed to calculate the Mr of LiOH as 24. From that point, some managed to complete the rest of the method correctly. Some candidates made attempts at generating a value by dividing the Ar values into each other and then multiplying the evaluation by 100. Evaluated outcomes included 8/16 x 100 = 50%, 24/24 x 100 = 100%, 24/12 x 100 = 200%, 24/8 x 100 = 300%, 1 x 16 x 7 = 112%, 24/1 x 100 = 2400%.

Some lost out on the third mark due to incorrect rounding, answering 4.16.



(v) Calculate the percentage by mass of hydrogen in lithium hydroxide, LiOH.

$$\% \text{ by mass of element} = \frac{\text{relative atomic mass of element}}{\text{relative formula mass of compound}} \times 100$$

(relative atomic masses: Li = 7, O = 16, H = 1.0)

(3)

$$\frac{1}{7+16+1} \times 100 = 4.166666667$$

$$\frac{1}{24} \times 100 = 4.2$$

percentage by mass of hydrogen = 4.2 %

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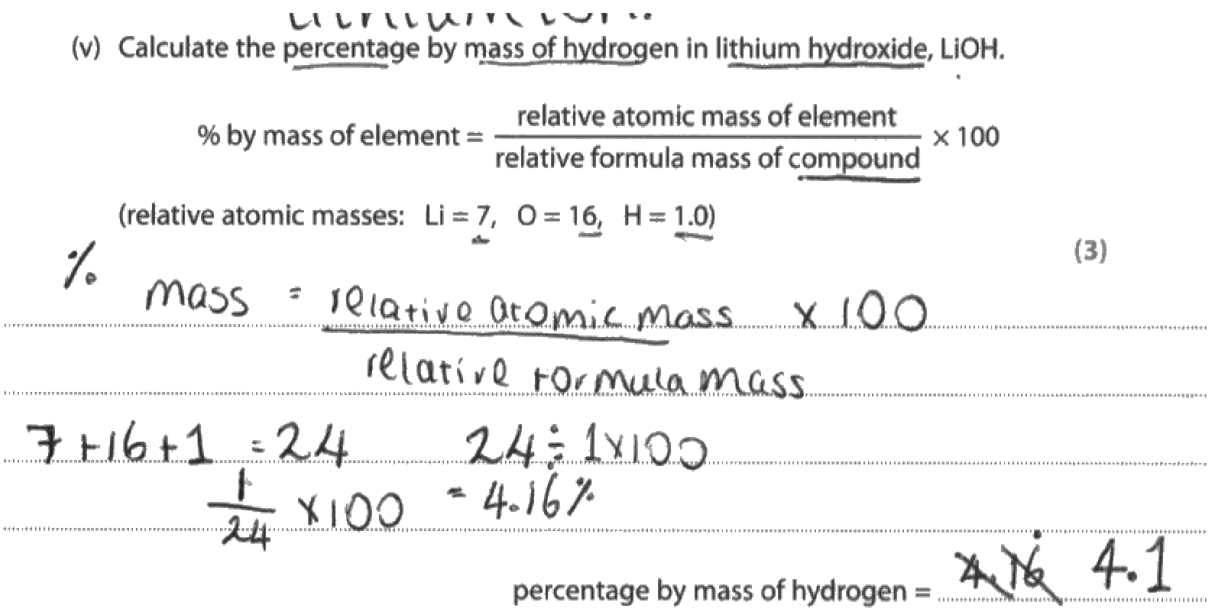
A very well set out answer. It shows the sum, with the '24' worked out. It is good to show the calculator answer (4.16666...) and then this is rounded correctly.



(v) Calculate the percentage by mass of hydrogen in lithium hydroxide, LiOH.

$$\% \text{ by mass of element} = \frac{\text{relative atomic mass of element}}{\text{relative formula mass of compound}} \times 100$$

(relative atomic masses: Li = 7, O = 16, H = 1.0)

(3)

$$\% \text{ mass} = \frac{\text{relative atomic mass}}{\text{relative formula mass}} \times 100$$

$7+16+1 = 24$ $\quad$ $24 \div 1 \times 100$

$\frac{1}{24} \times 100 = 4.16\%$

percentage by mass of hydrogen = ~~4.16~~ 4.1

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Examiner Comments

Everything is correct – and clearly shown (although repeating the given formula is not needed), but the answer has been incorrectly rounded so loses one mark.

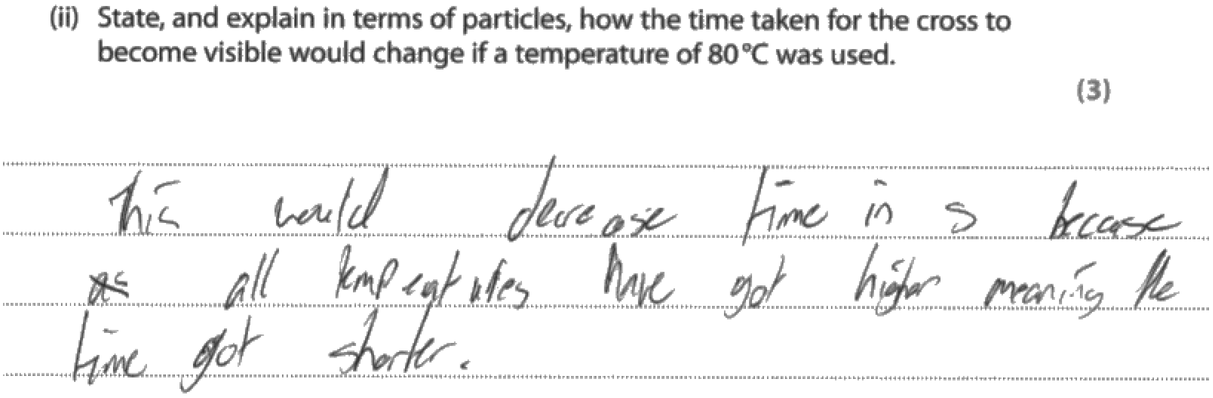
Question 5(b)(i)

The volume or amount of reaction mixture was the most common correct answer, but the full range of answers given in the mark scheme were seen, including keeping the cross or observer the same. Incorrect responses were often down to vagueness such as ‘reaction mixture’ or ‘the amount’. Incorrect conceptions included keeping the surface area the same, keeping the temperature the same (which was a variable) and keeping time the same.

Question 5(b)(ii)

Many candidates were able to gain two marks as they recognised that increasing the temperature meant particles have more energy/ move more, and therefore the time for the reaction to occur would decrease. Particles moving faster was often mentioned, as was the idea of more collisions, however many candidates failed to specify these collisions were more frequent or more successful. It was clear though that several candidates were thinking about a similar practical, but not the same one, as they were referring to the cross disappearing, not appearing more quickly (which was not penalised if the concepts were correct). Several candidates contradicted their answers, suggesting that less time taken means a slower rate.

A common misconception was that the cross will become visible faster because the particles would evaporate faster at 80°C. Other answers were confused about particle movement and talked about particles vibrating.



(ii) State, and explain in terms of particles, how the time taken for the cross to become visible would change if a temperature of 80 °C was used.

(3)

this would decrease time in s because ~~as~~ all temperatures have got higher meaning the time got shorter.

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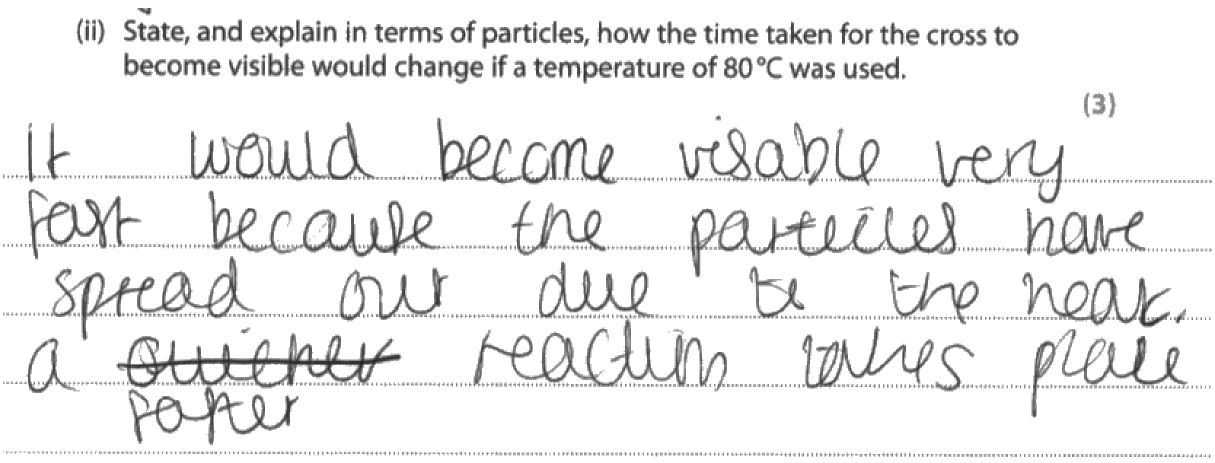
Examiner Comments

The correct reduction in time is given but there is no explanation. This response scored one mark.



(ii) State, and explain in terms of particles, how the time taken for the cross to become visible would change if a temperature of 80 °C was used.

(3)

It would become visable very fast because the particles have spread out due to the heat. a ~~quicker~~ reaction takes place faster

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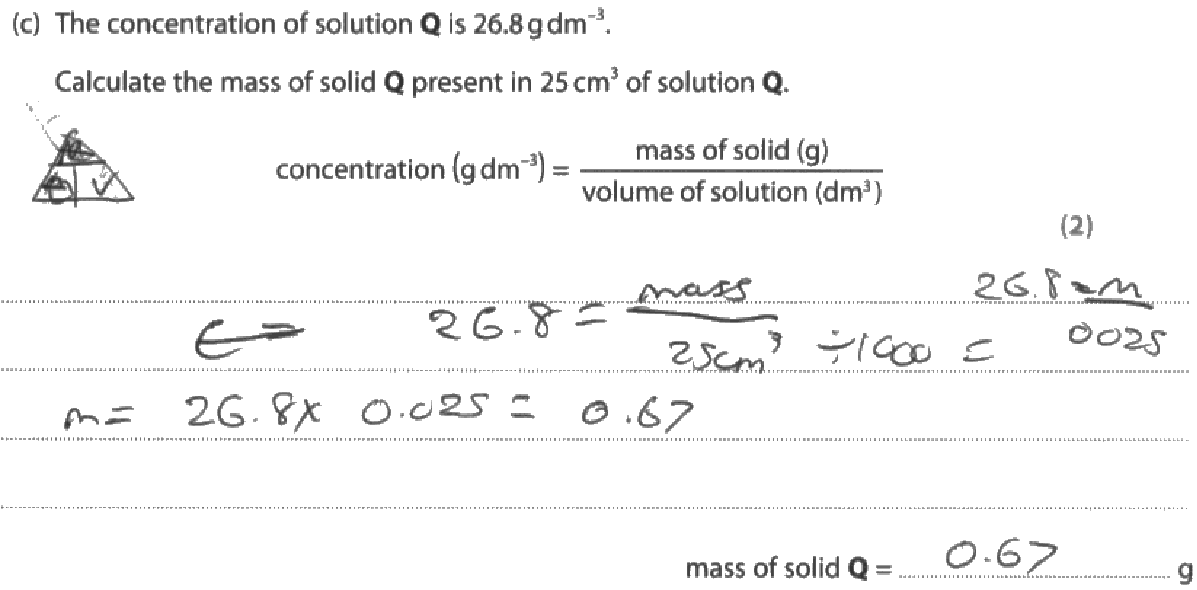
Examiner Comments

It will be 'very fast' – but is this more or less than 10s? It is important to be precise – 'faster than at 60 o C' would have been better. The explanation about spreading out is not correct.

Question 5(c)

Most candidates multiplied the correct values but did not change the volume to the correct unit and so got 670 (one mark). Lots of one mark answers were scored for 0.67 to varying powers of 10 indicating an incorrect, or no, volume unit conversion.

The most common errors evaluated were 25 / 26.8 = 0.93 or 26.8 / 25 = 1.072.



(c) The concentration of solution **Q** is 26.8 g dm^{-3}.

Calculate the mass of solid **Q** present in 25 cm^3 of solution **Q**.

$$\text{concentration } (\text{g dm}^{-3}) = \frac{\text{mass of solid (g)}}{\text{volume of solution (dm}^3)}$$

(2)

$\Leftarrow$ $26.8 = \frac{mass}{25cm^3}$ $\div 1000 =$ $26.8 = \frac{m}{0025}$

$m = 26.8 \times 0.025 = 0.67$

mass of solid **Q** = 0.67 g

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Examiner Comments

Fully set out and with the conversion to dm^3.

(c) The concentration of solution **Q** is 26.8 g dm^{-3}.

Calculate the mass of solid **Q** present in 25 cm^3 of solution **Q**.

$$\text{concentration } (g\,dm^{-3}) = \frac{\text{mass of solid (g)}}{\text{volume of solution } (dm^3)}$$

(2)

$26.8 = \frac{?}{25cm^3}$

$26.8 \times 25 = 670$

mass of solid **Q** = 670 g

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Examiner Comments

The formula given says that the volume must be in dm^3, so $25cm^3$ needs to be converted. This response scored one mark.

Question 5(d)

A large majority of candidates scored one mark for increased rate of reaction. However, many fewer managed to gain the second mark about the collisions or activation energy. Many referred to the idea of catalysts not being used up in the reaction, which is not, of course, an explanation.

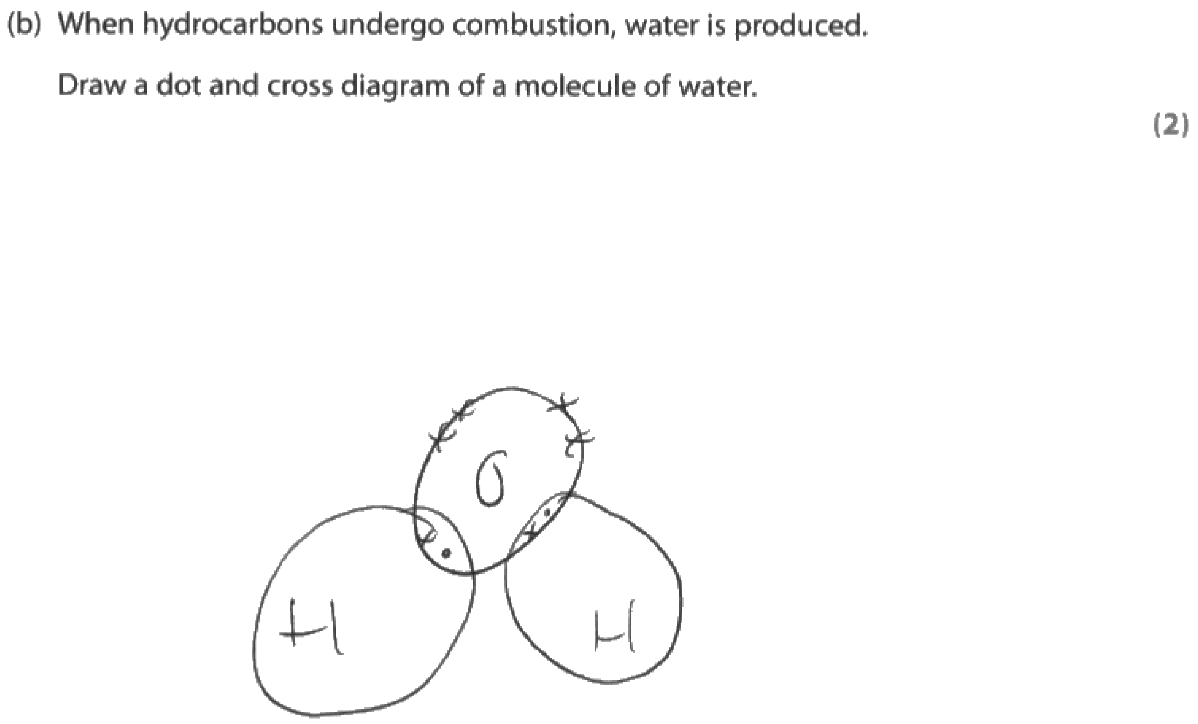
Incorrect responses included: catalysts increase temperature; the rate goes down or changes; it is an enzyme which is liable to denaturing; there is an additional material present it will make the reaction take longer.

Question 6(b)

Although there were some clearly drawn correct responses, there were a lot of random dots and crosses grouped on the page – or blanks. Many understood the fact that there is a shared pair of electrons but then could not complete the rest of the diagram correctly. Several drew ball and stick diagrams.

Some incorrectly showed two oxygen atoms and one hydrogen atom.

Frequent misconceptions included the molecular structure of water, one giant and joined electron configuration of the molecule with or without the label H_2O in the middle, or double or triple bonds, or an OH. Regularly candidates depicted structures of hydrocarbons, such as CH_4, or ionic configurations. Other mistakes were the additional shells/additional electrons. More obscure answers included fractional distillation diagrams, reaction profile graphs, droplets of water, metallic bonding, beakers of water, three circles labelled H, 2 and O respectively, diagrams of CO_2.



(b) When hydrocarbons undergo combustion, water is produced.

Draw a dot and cross diagram of a molecule of water.

(2)

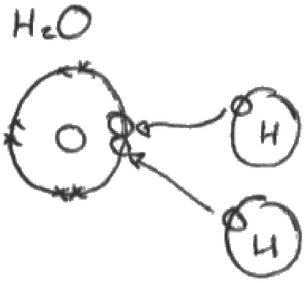
ResultsPlus
Examiner Comments

A clearly set out answer.

(b) When hydrocarbons undergo combustion, water is produced.

Draw a dot and cross diagram of a molecule of water.

(2)



ResultsPlus
Examiner Comments

Water is a covalent molecule, so the atoms must be clearly shown sharing electrons (best shown by overlapping shells). This is not shown in this example. This response scored zero marks.

Question 6(c)

Surprisingly few answers, given this routine calculation, managed to gain full marks. Some managed to get one by correctly calculating the number of moles, but not knowing how to proceed from there. Some incorrectly divided the values, or inverted them. It was clear that many did not understand what the question was asking. Those who had practised doing the calculation in a table format appeared to score better.

It was not uncommon for candidates to multiply and conclude with a numerical answer for example, (12 x 0.96) + (1 x 0.32) = 11.84. Less frequently candidates added the numbers in the question together to generate a final value, no formula, such as 0.96 + 0.32 = 1.28.

Question 6(d)

Candidates were often able to identify the uses correctly – especially kerosene, and sometimes the properties – but to score full marks they did not often have a knowledge of cracking. For converting fuel oil to kerosene, attempts included generic statements about heating it, or saying fractional distillation is used. A large number inverted the relative properties of the two fractions, for example candidates thought that the boiling point of kerosene is higher than that of fuel oil because it was higher in the column. Mention of melting points, density and environmental implications – not asked for in the question – was notable. Candidates sometimes discussed other fractions in the column, eg bitumen, which was disregarded.

*(d) Crude oil is separated into useful products called fractions using fractional distillation.

Figure 9 shows a fractional distillation column and the fractions kerosene and fuel oil.

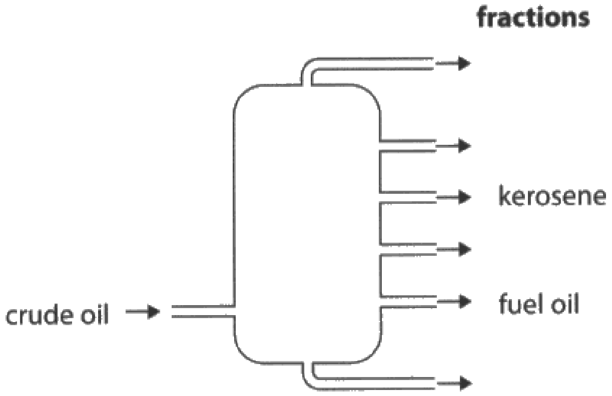


Figure 9

Kerosene and fuel oil have different uses depending on their properties.

Describe the properties and uses of kerosene and fuel oil.
Include in your answer

- the difference in boiling point
- the difference in viscosity
- the difference in ease of ignition
- their uses and how fuel oil can be converted into kerosene.

(6)

~~fuel oil~~ kerosene is for the use of planes, as they need large amants of energy

Fuel oil is for the transport and energy for vans and cars

As fuel oil is further down the fractional distillation column it reaches a higher

Boiling point

ResultsPlus
Examiner Comments

A Level 1 answer. A correct use of kerosene has been given (although 'fuel for planes' would be better), but no correct use for fuel oil. One correct property comparison is also given, but the other properties are not mentioned. There is no reference to cracking.

*(d) Crude oil is separated into useful products called fractions using fractional distillation.

Figure 9 shows a fractional distillation column and the fractions kerosene and fuel oil.

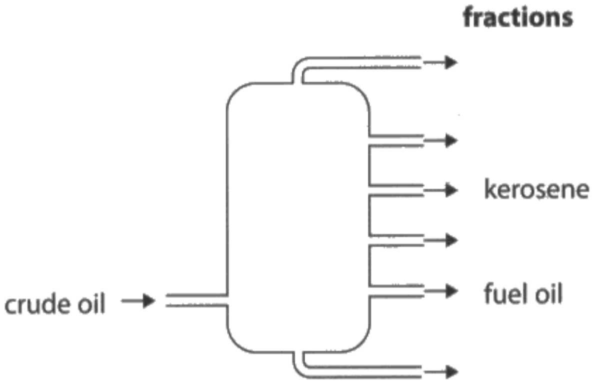


Figure 9

Kerosene and fuel oil have different uses depending on their properties.

Describe the properties and uses of kerosene and fuel oil.
Include in your answer

- the difference in boiling point
- the difference in viscosity
- the difference in ease of ignition
- their uses and how fuel oil can be converted into kerosene.

(6)

Kerosene is typically used to fuel aircrafts. Kerosene has a lower boiling point as kerosene is in a higher fraction than fuel oil, and it is in a cooler fraction (the fractions get cooler as they go up, and they are further away from the burning). Kerosene is less viscous than fuel oil, as it is not as thick and does not need to be. Furthermore, kerosene is easier to ignite due to the fact that there are less bonds binding the hydrocarbon and it is a shorter chain, therefore the bonds are easier to break.

However, fuel oil is typically used to fuel ships. Fuel oil has a higher boiling point as fuel oil is in a lower fraction, and fuel oil is also harder to ignite. This is because the hydrocarbon has more bonds binding it together, and the chain of molecules are longer, which makes the bonds harder to break. Additionally, fuel oil is more viscous than kerosene, as the chains are kept longer and it is more thick and gloopy - which it needs to be, in order to serve its purpose of fueling ships. Fuel oil can be converted into kerosene if it is burnt for longer, and is then kept more cool. The bonds will have broken more, and the chain of molecules will be shorter, as well as the viscosity will have decreased - making it easier to use and more flexible; it will also be in the correct condition for use.

ResultsPlus
Examiner Comments

This is a Level 2 answer. There are correct uses for the fractions and correct property comparisons (even though the chemistry is not fully correct – this is a 'describe' question not an 'explain' one). Whilst the candidate attempts to describe cracking it is not correct and has no merit, so the answer cannot reach Level 3.

*(d) Crude oil is separated into useful products called fractions using fractional distillation.

Figure 9 shows a fractional distillation column and the fractions kerosene and fuel oil.

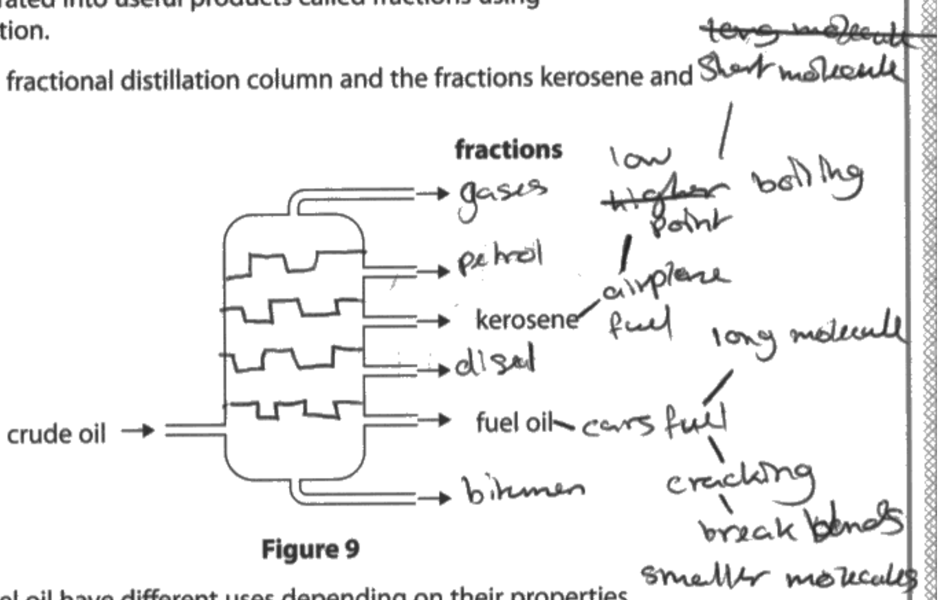


Figure 9

Kerosene and fuel oil have different uses depending on their properties.

Describe the properties and uses of kerosene and fuel oil.
Include in your answer

- the difference in boiling point
- the difference in viscosity
- the difference in ease of ignition
- their uses and how fuel oil can be converted into kerosene.

(6)

~~kero~~ kerosene has a low boiling point compared to fuel oil which have a high boiling point. This is because fuel oil is more viscos than kerosene, meaning fuel oil have long ~~small~~ chain of molecules and kerosene have small chain of moleculs. kerosene and fuel oil both have different uses; kerosene being used for airplane fuel and fuel oil being used for cars and trucks. Because they have different boiling points this ~~means~~ shows how easy it is to ignite kerosene and how difficult it is to ignite fuel oil. Fuel oil can be turned into kerosene by using cracking; this means long chained molecules are getting broken down into smaller chained molecules like kerosene or petrol.

ResultsPlus
Examiner Comments

This is a Level 3 answer. A use for kerosene is given. At least two property comparisons are correctly made. Cracking is mentioned, and a description of this in terms of molecules. Just a use for fuel oil is missing.

Paper Summary

On the basis of the answers in this paper, candidates are advised to:

- Learn fully tests for gases.
- Understand the difference between exothermic and endothermic reactions and how these can be detected by temperature changes.
- Understand the difference between the shells and the outer shell of an atom.
- Practise how to do a ‘sense check’ on calculation answers, including using percentages.
- Practise common calculations found in past papers, such as the percentage by mass of an element in a compound.
- Learn the colours of Universal Indicator in acids, neutral solutions and alkalis.
- Understand the reason that a catalyst increases the rate of reaction.
- Practise drawing the dot and cross diagrams of molecules in the specification.

Grade boundaries

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