Qualification Accredited

Oxford Cambridge and RSA

AS LEVEL

Examiners' report

CHEMISTRY B (SALTERS)

H033

For first teaching in 2015

H033/02 Summer 2024 series

Version 1

ocr.org.uk/science

Contents

Introduction

Our examiners' reports are produced to offer constructive feedback on candidates' performance in the examinations. They provide useful guidance for future candidates.

The reports will include a general commentary on candidates' performance, identify technical aspects examined in the questions and highlight good performance and where performance could be improved. A selection of candidate answers is also provided. The reports will also explain aspects which caused difficulty and why the difficulties arose, whether through a lack of knowledge, poor examination technique, or any other identifiable and explainable reason.

Where overall performance on a question/question part was considered good, with no particular areas to highlight, these questions have not been included in the report.

A full copy of the question paper and the mark scheme can be downloaded from OCR.

Paper 2 series overview

Paper 2 was able to differentiate candidate ability with a wide spread of results being obtained. The questions asked in the paper were to an appropriate level for the paper and responses required, allowing students to show and stretch their understanding.

The difficulty of the paper was normal and in line with those of previous years.

There did not seem to be any candidates who ran short of time on the paper, and missed responses seemed to be due to a lack of knowledge rather than a lack of time.

Candidates who did well on this paper generally:	Candidates who did less well on this paper generally:
• interpreted the questions correctly • identified key ideas and were able to incorporate these into their responses • were able to use qualitative analysis from lessons and adapt these • were able to combine ideas around equilibria and rates of reaction, using these in the correct context • could manipulate mathematical data and formula to arrive at the correct answer for a calculation • understood the use of specific terminology and the differences between a halide and a halogen • understood the practical aspects of chemistry and the set-up of chemical equipment.	• did not identify qualitative analysis results and apply these to their chemistry knowledge • showed misconceptions when answering more complex questions • misused key terms when describing chemical ideas • misremembered calculations or did not manipulate mathematical data with regards to the calculation required • left questions unanswered.

Question 1 (a)

1 'Lo Salt' is a reduced-sodium alternative to regular table salt. Some of the sodium chloride is replaced by potassium chloride.

(a) Two models of the structure of sodium chloride are shown below in **Fig. 1.1** and **Fig. 1.2**.

Fig. 1.1

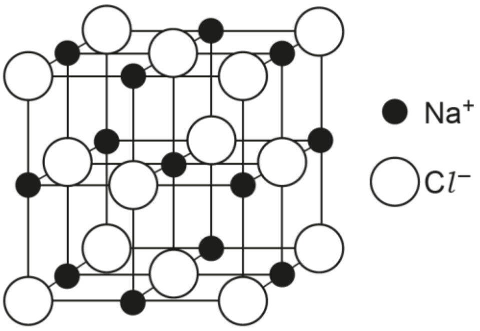
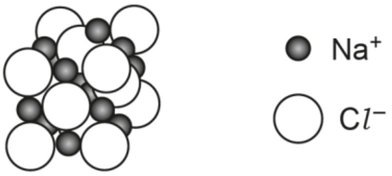


Fig. 1.2



The two models show different features of the structure.

Complete the table with ticks (✓) where a statement is correct for a model.

	Correct for Fig. 1.1	Correct for Fig. 1.2
Model shows the relative sizes of ions		
Model shows how the ions pack together		
Model allows all the ions in the model to be seen		

[2]

Candidates were able to access this question easily. It gave them a good start to the paper and allowed them to build their confidence. Some candidates made minor errors, but generally this was answered well.

Question 1 (b)

(b) Sodium chloride and potassium chloride are both white crystalline solids.

A student wants to distinguish between these two solids.

Name a simple laboratory test the student could use and give the results.

Name of test ....

Results ....

....

....

[3]

Candidates were mostly able to identify the idea that a flame test was required. Candidates were able to remember the purple or lilac colour for potassium, but some misidentified the colour of sodium as orange rather than yellow.

Assessment for learning

Some candidates did not identify the use of a flame test for the metals and focused on the idea that they both contained chlorides. More practical practice on qualitative analysis could be performed to make sure candidates can remember and apply these.

Question 1 (c) (i)

(c) A student has a solid sample of an unknown ionic chloride.

The student uses the following method to calculate the percentage by mass of chlorine in the solid:

- Weigh out 0.94 g of solid and dissolve in deionised water.
- Add excess silver nitrate solution so $AgCl$ precipitates.
- Collect and dry the precipitate. It weighs 2.29 g.

(i) Calculate the percentage by mass of chlorine in the unknown solid.

percentage by mass of chlorine = ... % **[3]**

Many candidates were given 1 mark for this question. Candidates were able to calculate moles of AgCl from the information given, but many were not given MP 2 as they did not multiply by 35.5.

Question 1 (c) (ii)

(ii) The student fails to dry the $AgCl$ precipitate fully.

What effect would this have on the percentage by mass of chlorine calculated?

Explain your answer.

....

....

....

.... **[2]**

Most candidates were able to identify that the percentage by mass of chlorine would be greater than expected. Many candidates were able to follow this line of thinking, identifying that the precipitate contains water. Most candidates were given marks for this question.

Question 1 (d)

(d) Give the formula of another aqueous ion (other than Ag^+) that would form a precipitate with chloride ions.

Give the colour of this precipitate.

Ion ....

Colour of precipitate ....
[1]

Assessment for learning

Only a few candidates were given the mark for this question. Candidates need the opportunity to perform qualitative analysis tests and revisit these in order for them to become second nature.

Question 1 (e) (i)

(e) Some students have a solution of a sodium halide (chloride, bromide or iodide) to identify. They add silver nitrate solution and get an off-white/pale yellow precipitate. This enables them to say that one halide ion is definitely not present.

(i) Which halide ion is definitely **not** present?

Give a reason.

....

....

.... **[2]**

This question was answered well by candidates. Most were able to identify chloride as the missing halide and the correct colour of precipitate for this, and few candidates identified bromide or iodide.

Question 1 (e) (ii)

(ii) Describe further tests they can do on the precipitate to decide which of the remaining halides is present.

....

....

....

.... **[2]**

Many candidates were able to identify the need to add ammonia to the precipitate and identify them. However, there were errors in whether dilute or concentrated ammonia was required to identify the halide and what the result of this would be, meaning some candidates were not given MP2.

Question 1 (f) (i)

(f) A group of students carry out experiments in which they mix halogen solutions with solutions of halides.

(i) The students add aqueous bromine to a solution of a halide. They then shake the resulting solution with hexane which turns purple.

Name the halide ion present, giving your reasons.

....

....

....

.... **[2]**

Misconception

There was some confusion here by candidates regarding the colour of iodine versus iodide. Candidates were able to identify the halide as iodide and were given MP1. However, they then went on to state that the iodide caused the cyclohexane to turn purple, rather than iodine, so were not given MP2. The reverse argument was also seen, with candidates given MP2 for identifying iodine, but not MP1 because they stated that iodine was the halide present.

Question 1 (f) (ii)

(ii) Write an ionic equation for the reaction of bromine with the halide.

[1]

Misconception

This question was not answered as well as it could have been. There was an element of error carried forward (ECF) where candidates identified the incorrect halide, but then wrote a correct ionic equation for the halide selected. Candidates who were given the mark on this question showed a good understanding of the displacement reactions of halides and halogens, but only a few were able to correctly write this equation.

Question 1 (f) (iii)

(iii) A student says:

- Mixing solutions of bromine and sodium chloride would not result in a reaction.
- This is because the chloride ion is a stronger reducing agent than the bromide ion.
- The chloride ion has a lower tendency than the bromide ion to lose an electron.

Comment on these statements, giving the correct chemistry where necessary.

....

....

....

....

....

.... **[3]**

This question was able to differentiate between candidate ability. Candidates who fully understood the ideas and trends of halogens were able to interpret the statements, stating which were correct or incorrect with an understanding of why. Some mistakes occurred when candidates mistook the oxidising ability of chloride versus the reducing ability of chloride, and then were not given MP2. Other errors occurred when explaining bullet 3, where candidates spoke about chlorine losing electrons as opposed to chloride's tendency to lose an electron.

Question 2 (a)

2 Ozone in the stratosphere is broken down more rapidly when chlorofluorocarbons (CFC) are present.

(a) The concentration of ozone in part of the atmosphere is 0.000021%.

Calculate this concentration of ozone in ppm.

concentration = ... ppm **[1]**

Candidates gave a mixture of responses to this question, with errors introduced because they 'moved' the decimal point incorrectly. Some candidates gave an answer of 2.1, while others gave an answer of 2.1×10^{-10}. However, many were able to correctly convert the concentration to ppm.

Question 2 (b)

(b) Ozone in the stratosphere is exposed to high energy ultraviolet radiation.
This radiation sometimes breaks bonds.

Describe another effect that high energy ultraviolet radiation can have on a molecule.

....

.... **[1]**

Misconception

? Although many candidates were able to discuss electrons being ionised, excited, or the production of radicals, many focused on the idea of bonds vibrating, mistaking this with IR spectroscopy.

Question 2 (c)

(c) Calculate the frequency, in Hz, of ultraviolet radiation with a wavelength of 2.55×10^{-5} cm.

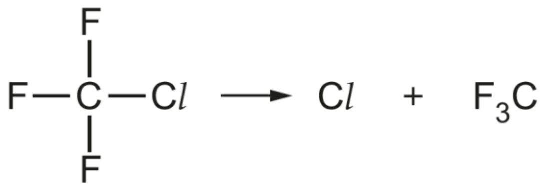
frequency = ... Hz **[2]**

Many candidates were given MP1 by correctly identifying the equation required and rearranging it. However, some combined frequency calculations with Planck's constant so were not given marks for this question. Fewer candidates were given 2 marks for this question because they did not convert the wavelength from cm to m.

Question 2 (d) (i)

(d) The CFC $CClF_3$ undergoes homolytic bond fission in the stratosphere.

(i) Add 'half curly arrows' to show how the bond breaks.



[1]

Many candidates identified the need to use half errors to show homolytic fission. Some used full arrows, or showed the half arrows as coming from the wrong part of the molecule, but this question was answered well by most candidates.

Question 2 (d) (ii)

(ii) Explain why the C–Cl bond breaks in this reaction rather than the C–F bond.

....

.... **[1]**

Most candidates were given the mark for this question as they were able to use the idea of the C-Cl bond being easier to break.

Question 2 (d) (iii)

(iii) Chlorine atoms in the stratosphere catalyse the conversion of ozone into oxygen.

Complete the following two equations to show how this happens.

$Cl + O_3 \rightarrow$ .... $+ O_2$

.... + ... $\rightarrow Cl + O_2$

[1]

This question was also answered well. Candidates were able to show the formation of ClO_2 and then the reaction of this with O. However, some tried to change the equation to form additional O_2.

Question 2 (d) (iv)

(iv) Ozone is also present in the troposphere where it is a pollutant.

Give **one** problem caused by ozone in the troposphere.

.... **[1]**

Many candidates were able to identify photochemical smog, with a few only stating 'smog'. Generally, this was a well answered question with candidates showing a great understanding.

Question 2 (e)

(e) 0.327 g of a CFC produces 65.0 cm^3 of vapour at a pressure of 101 000 Pa and a temperature of 293 K.

Calculate the M_r of this CFC.

Give your answer to an **appropriate** number of significant figures.

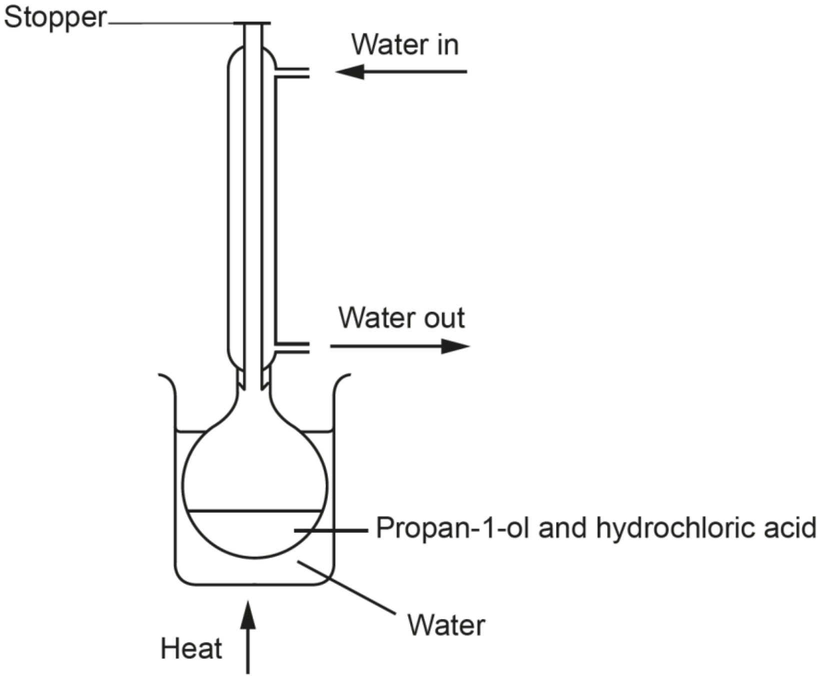
M_r = ... **[5]**

Common errors in the answering of this question were around the conversion of volume. Candidates often did not leave pressure as the value stated, converting this to kPa before entering the values into the equation. Another common error here was the use of significant figures, with candidates using 4 or more. Some of candidates combined moles with M_r in order to calculate the M_r of the CFC.

Question 2 (f)

(f) 1-chloropropane, $CH_3CH_2CH_2Cl$, is another organic compound containing chlorine. 1-chloropropane is made by reacting propan-1-ol, $CH_3CH_2CH_2OH$, with concentrated hydrochloric acid.

A student sets up the following apparatus to heat the propan-1-ol and hydrochloric acid under reflux.



Identify **two** mistakes that the student has made in setting up this apparatus. (Assume that clamps and supports are present.)

Mistake 1: ....

....

....

Mistake 2: ....

....

.... **[2]**

Misconception

Many candidates were given either 1 mark or no marks for this question. The idea of the water in and water out on the condenser being the wrong way around was answered well. However, candidates focused on the idea that the water bath should not be used and direct heat should be used instead. Some candidates also discussed the use of heaters, drawing on the methods used when teaching reflux. They also discussed the need to add a thermometer, confusing reflux with distillation. That a stopper was present seemed to be overlooked by candidates. Alternate methods for reflux should be discussed when teaching, to remove these candidate misconceptions.

Question 3 (a)

3 Most diesel fuel is made from crude oil. However, biodiesel, made from vegetable oils, is increasingly being used.

(a) Diesel fuel made from crude oil often undergoes incomplete combustion in vehicle engines. The pollutants carbon monoxide and carbon particulates are formed.

$C_{12}H_{26}$ is a typical hydrocarbon found in diesel.

Write an equation for the **incomplete** combustion of $C_{12}H_{26}$ to give equal amounts of carbon monoxide and carbon.

[1]

Some candidates seemed to misread this question. There was a mixed response, with some given the mark while others were not due to either not balancing the equation, incorrect balancing, showing incomplete combustion with just CO and no C present, or in some cases showing complete combustion.

Question 3 (b)

(b) $C_{14}H_{30}$ is another hydrocarbon found in diesel.

2.50 g of $C_{14}H_{30}$ is **completely** burned in oxygen.

Calculate the volume of CO_2 formed (in dm^3) at RTP.

volume of CO_2 = ... dm^3 **[2]**

Most candidates were given the first MP for the moles of hydrocarbon present. However, some candidates were not given the second MP because they did not include the ratio of hydrocarbon to oxygen from the previous question. In many responses, candidates multiplied the moles by 24 and left this as the volume.

Question 3 (c)

(c) Biodiesel produces lower emissions of carbon monoxide and carbon.
It also produces less of other pollutants, such as sulfur dioxide, compared with diesel.

How is sulfur dioxide formed in a diesel engine?

....

.... **[1]**

Assessment for learning

Most candidates were not given the mark for this question. They seemed to identify the sulfur as being in the air or from the engine, rather than from the diesel itself. A clear understanding of the compounds in diesel and petrol is needed for them to then identify where these compounds can appear from.

Question 3 (d)

(d) A student says that biodiesel is both sustainable and carbon neutral because it is made from vegetable oils.

Comment on the validity of both parts of this statement.

Sustainable ....

....

Carbon neutral ....

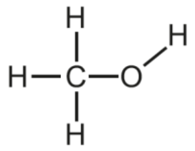
....
[2]

This was another question that was able to separate out candidate ability. Candidates showed an understanding of the term 'sustainable', but they did not always clearly explain this. They also referred to the idea that plants can be grown, rather than the idea that they could be regrown. A number also focused on the idea that land was being taken away and not used to grow food, missing the idea behind the question. Some candidates referred to vegetables being grown, rather than understanding where the vegetable oil comes from.

When discussing the carbon neutral side of the question, many candidates referred to carbon rather than carbon dioxide. Those candidates that understood the link between 'carbon neutral' and the production of carbon dioxide were able to explain how biodiesels were either carbon neutral or not, referring to the idea that carbon dioxide was released in transport and production.

Question 3 (e) (i)

(e) Methanol is a reactant in the reaction that produces biodiesel.



methanol

(i) State and explain the C–O–H bond angle in a methanol molecule.

C–O–H bond angle = ...°

Explanation of bond angle.

....

....

....

....

....

.... **[4]**

Assessment for learning

This is a common question regarding bond angles and electron pair repulsion; however, some candidates were not given many marks. The diagram seemed to confuse some candidates, who stated the incorrect bond angle for the C-O-H bond.

Other errors included the incorrect identification of bonding pairs and lone pairs of electrons. Candidates who drew this out were given the second marking point. Some candidates referred to the electrons present, without discussing electron dense areas or electron pairs.

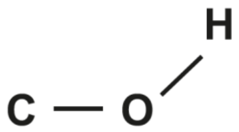
When discussing repulsion of electron pairs, again candidates did not include the word 'pair'. Candidates were able to identify the idea that lone pairs reduced the bond angle between atoms by 2.5°, but did not identify that this causes the lone pairs to repel more.

Candidates need to learn specific terminology and identify both common and uncommon examples of shapes of molecules in order to allow them to adapt their understanding to questions.

Question 3 (e) (ii)

(ii) Complete the diagram to show the three-dimensional structure of a methanol molecule.

Use solid and dashed wedges to represent bonds where necessary.



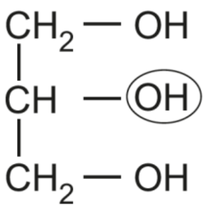
[1]

Most candidates were given a mark for this question. There was a clear understanding of the need for a straight, a wedge and a line bond. However, some candidates were not given the mark because they placed the straight bond at a 180° angle with the C-O bond. Some candidates showed the straight bond at 90° and, although this was given the mark, it is not good technique.

Question 3 (f)

(f) The other product in the reaction to produce biodiesel is propane-1,2,3–triol.

The structure of propane-1,2,3–triol is shown below.



Classify the circled OH group as primary, secondary or tertiary.

Explain your answer.

....

....

.... **[2]**

This question showed a clear understanding by candidates on the positioning of hydroxyl groups. Candidates were able to identify the alcohol as secondary, with only a few candidates identifying it as either primary or tertiary. Candidates who identified the correct terminology were then able to describe why this was secondary, with most focusing on the idea that two carbons were attached, rather than one hydrogen.

Question 3 (g) (i)

(g) Fuels such as diesel contain many alkanes.

(i) Draw the **skeletal** formula for the molecule shown below.

$CH_3CH_2CH(CH_3)CH_2CH(CH_2CH_3)CH(CH_3)CH_2CH_3$

[1]

Candidates were able to reimagine this as a skeletal structure, with many candidates answering this question correctly.

Question 3 (g) (ii)

(ii) **Name** the molecule shown below.

Name:.. **[1]**

Candidates were able to identify the molecule as a pentane with 3 methyl groups. Some candidates incorrectly identified the branches as 2,2-dimethyl-3-methyl, but generally this question was answered well by most.

Question 3 (g) (iii)

(iii) Alkanes have no double bonds and no benzene rings.

Give words that are used to describe these features of the alkanes.

No double bonds ....

No benzene rings ....

_ **[1]**

This question showed a mixture of responses. Candidates could identify the idea that no double bonds meant the molecule was saturated, but then gave an incorrect response for there being no benzene rings. Some candidates clearly misread the question and stated this meant it was aromatic, while others stated that this meant the molecule was alicyclic, making a link for a ring even though this was not implied. Many candidates were able to identify this as aliphatic.

Question 3 (h)*

(h)* An organic compound **A**, has the following composition by mass:

3.7 g of compound **A** contains 1.8 g carbon, 0.3 g of hydrogen, the rest of its mass is oxygen.

The infrared and mass spectra of compound **A** are shown below.

Infrared spectrum of compound A

Item removed due to third party copyright restrictions

Mass spectrum of compound A

Item removed due to third party copyright restrictions

You may do rough work on this page but it will not be marked.

Use the information on page 12 to deduce the structural formula of compound **A**.

Explain your reasoning, giving evidence from the mass data and both of the spectra.

....

....

....

....

....

.... **[6]**

There was a clear spread of marks for this question. Most candidates were able to complete the empirical formula calculation, showing clear steps and a clear understanding of how the calculation is completed.

When discussing the mass spectra, there was some confusion of the M/Z peak being either 75 or 76. Most candidates were able to determine this by calculating the M_r of the empirical molecule and then used this to show that empirical and molecular formula are the same. However, candidates who misread the M/Z peak also did not make the link between the two. Although candidates were able to use the CH_3CO^+ peak in their explanation, they did not use this as a reasoning for the structure of the ester.

When identifying the peaks on the infra-red spectra, candidates often did not pick a specific absorbance. Many quoted the range from the data sheet without specifying where the peak actually appeared. Candidates were able to identify the C-O and C=O peak. However, some then identified the C-H peak as an O-H peak as they had decided the molecule was a carboxylic acid and tried to make the evidence fit the identification, rather than the other way around.

Candidates who gave a response in Level 3 response were able to identify the molecule as an ester, correctly show the structure of the ester, and identify the absence of the O-H peak in the infra-red spectra.

Exemplar 1

	C	H	O
mass	1.8	0.3	1.6
Mr	12	1	16
mol	0.15	0.3	0.1
ratio	1.5	3	1
	3	6	2

empirical formula = $C_3H_6O_2$

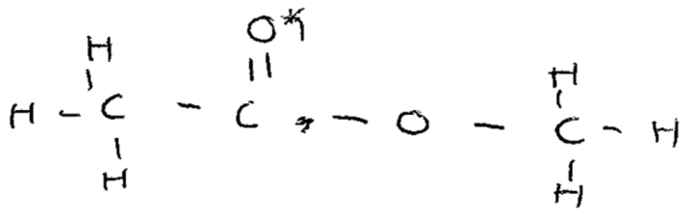
the highest peak on the mass spectrum is 74. $C_3H_6O_2$ has the Mr of 74 so can say that is the molecular formula

On the infared, there is a sharp peak at 1250 cm^{-1} this indicates a C-O. we can say it is not of an alcohol or carboxylic acid. **[6]**

Extra answer space if required.

as no broad peaks between 2500 - 3600. there is a sharp peak at 1750 which indicates a C=O of an ester so we can conclude A is an ester with molecular formula $C_3H_6O_2$

so structural formula CH_3COOCH_3



Exemplar 2 shows a clear and logical reasoning from the data given. The empirical formula is clearly set out, the identification of the M/Z peak is related to the empirical formula, and the correct identification of both peaks that are present and peaks that are missing from the infra-red spectra is also clearly identified. The candidate does not use the CH_3CO^+ peak from the mass spectra, but still uses the information present to show the correct formula of the ester.

Question 4 (a) (i)

4 A student investigates the equilibrium in **Equation 4.1**.

$$2NO_2(g) \rightleftharpoons N_2O_4(g) \qquad \Delta H = -58\,kJ\,mol^{-1} \qquad \textbf{Equation 4.1}$$

$NO_2(g)$ is brown and $N_2O_4(g)$ is colourless.

(a)
(i) Write the expression for the K_c for the equilibrium in **Equation 4.1**.

[1]

Candidates were able to show the expression for K_c. Some errors were made when reactants and products were the wrong way round, but generally the expression was shown correctly.

Question 4 (a) (ii)

(ii) At a certain temperature, the numerical value of K_c for the equilibrium shown in **Equation 4.1** is 285.

In an equilibrium mixture at this temperature, $[N_2O_4] = 4.2 \times 10^{-2}\,mol\,dm^{-3}$.

Calculate $[NO_2]$ in this equilibrium mixture in $mol\,dm^{-3}$.

$[NO_2]$ = ... $mol\,dm^{-3}$ **[2]**

Candidates could be given MP1 even if the expression was inverted from the previous question as an ECF was used between them. Rearrangement of the expression could be performed, but candidates tended not to be given the second MP because they did not use square root to negate the presence of the $[NO_2]^2$.

Question 4 (a) (iii)

(iii) The equilibrium is then set up at a higher temperature.

Will the value of K_c increase, decrease or stay the same?

Explain your answer.

....

....

....

....

....

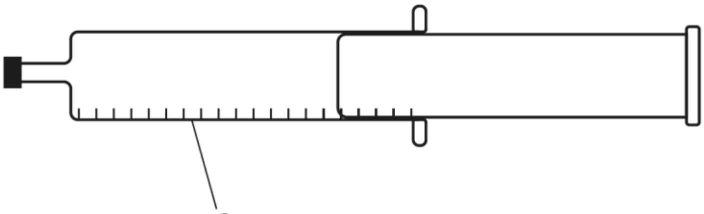
.... **[3]**

Most candidates were able to identify that the value of K_c would decrease. However, this was not always linked to the evidence of the enthalpy change for the reaction. Most candidates were given the first MP for identifying the reaction as exothermic and the last MP for the change in K_c. However, the reasoning for the change was not always clear or understood. Candidates identified that the equilibrium would shift to the reactants' side, but others stated the incorrect movement to the reactants, or that the molecules would be moving faster due to an increase in heat and this would increase the rate of reaction. Candidates who were given the second MP showed a clear overall understanding of equilibria.

Question 4 (b)*

(b)* The student has a sealed gas syringe containing the mixture of the two gases from **Equation 4.1**.

The mixture is brown because of the presence of NO_2.



The student pushes in the plunger to compress the gases.
The mixture slowly becomes lighter brown and then stays that colour.
There are no leaks.

Give chemical explanations of why the reaction is quite slow and why the mixture becomes lighter brown and then does not change.

....

....

....

....

....

.... **[6]**

Candidates were able to show an understanding of the concepts of equilibria and how these relate to the question. However, when discussing how this also relates to the rate of reaction, candidates either did not discuss this or discussed this incorrectly.

When discussing the idea of the rate of reaction in the syringe, candidates were able to identify that molecules would collide to react, but focused on the space in the syringe and the number of molecules there rather than the change of rate that would be affected by an increase of pressure. They also discussed the lack of an increase of temperature, or missing the presence of a catalyst as to the reason why the rate was slow, rather than the energy present in the molecules and activation energy.

Candidates were clear on why the mixture became lighter and were able to identify that N_2O_4 is colourless. They were also able to use the equation from the previous part of the question to identify the shift in equilibrium and the resulting colour this will form. However, candidates did not always follow this line of reasoning to identify that the shift in equilibrium was to reduce the pressure within the syringe. Some candidates discussed the idea of the syringe may have leaks which detracted from their explanation.

When discussing the reasoning why the mixture does not change, candidates were stronger in their understanding. Many candidates were able to identify that in a dynamic equilibrium the rate of the forward and backward reaction was the same, with some identifying that the equilibrium had now been re-established. A few candidates were then able to follow this line of reasoning by identifying that the concentration of NO_2 had now become constant.

Exemplar 2

The mixture becomes lighter brown as the reaction takes place as some of the brown NO_2 is reacting to form colourless N_2O_4 and the concentration of NO_2 decreases. The colour stops changing when equilibrium is reached as the concentrations of both substances (reactant & produce) remain constant. The reaction is quite slow because it takes place at room temperature so the particles have a lower average kinetic energy, resulting in less frequent successful collisions.

Equilibrium favours the forwards reaction as there are fewer moles of product than reactant. As the pressure in the syringe increases, the **[6]**

Extra answer space if required.

concentration of [illegible] N_2O_4 increases as equilibrium shifts to the left.

Exemplar 2 shows a clear logical explanation for what has occurred inside the syringe. The discuss both the equilibria and the idea behind the rate of the reaction, and they explain the reasons why the reaction is slow. The response is concise, but also gets to the point of the explanation required for the question.

Copyright information

Question 1 (a) Fig 1.1 and Fig 1.2 show different views of sodium chloride structure

Question 2 (f) Diagram of reflux apparatus

Supporting you

Teach Cambridge

Make sure you visit our secure website **Teach Cambridge** to find the full range of resources and support for the subjects you teach. This includes secure materials such as set assignments and exemplars, online and on-demand training.

Don't have access? If your school or college teaches any OCR qualifications, please contact your exams officer. You can forward them this link to help get you started.

Reviews of marking

If any of your students' results are not as expected, you may wish to consider one of our post-results services. For full information about the options available visit the OCR website.

Access to Scripts

We've made it easier for Exams Officers to download copies of your candidates' completed papers or 'scripts'. Your centre can use these scripts to decide whether to request a review of marking and to support teaching and learning.

Our free, on-demand service, Access to Scripts is available via our single sign-on service, My Cambridge. Step-by-step instructions are on our website.

Keep up-to-date

We send a monthly bulletin to tell you about important updates. You can also sign up for your subject specific updates. If you haven't already, sign up here.

OCR Professional Development

Attend one of our popular professional development courses to hear directly from a senior assessor or drop in to a Q&A session. Most of our courses are delivered live via an online platform, so you can attend from any location.

Please find details for all our courses for your subject on **Teach Cambridge**. You'll also find links to our online courses on NEA marking and support.

Signed up for ExamBuilder?

ExamBuilder is a free test-building platform, providing unlimited users exclusively for staff at OCR centres with an Interchange account.

Choose from a large bank of questions to build personalised tests and custom mark schemes, with the option to add custom cover pages to simulate real examinations. You can also edit and download complete past papers.

Find out more.

Active Results

Review students' exam performance with our free online results analysis tool. It is available for all GCSEs, AS and A Levels and Cambridge Nationals (examined units only).

Find out more.

You will need an Interchange account to access our digital products. If you do not have an Interchange account please contact your centre administrator (usually the Exams Officer) to request a username, or nominate an existing Interchange user in your department.

Need to get in touch?

If you ever have any questions about OCR qualifications or services (including administration, logistics and teaching) please feel free to get in touch with our customer support centre.

Call us on
01223 553998

Alternatively, you can email us on
support@ocr.org.uk

For more information visit
- **ocr.org.uk/qualifications/resource-finder**
- **ocr.org.uk**
- **facebook.com/ocrexams**
- **twitter.com/ocrexams**
- **instagram.com/ocrexaminations**
- **linkedin.com/company/ocr**
- **youtube.com/ocrexams**

We really value your feedback

Click to send us an autogenerated email about this resource. Add comments if you want to. Let us know how we can improve this resource or what else you need. Your email address will not be used or shared for any marketing purposes.

I like this **I dislike this**

CAMBRIDGE
UNIVERSITY PRESS & ASSESSMENT