OCR
Oxford Cambridge and RSA

Foundation

GCSE

Chemisty B Twenty First Century Science

J258/02: Depth in Chemistry (Foundation Tier)

General Certificate of Secondary Education

Mark Scheme for June 2022

OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of candidates of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, Cambridge Nationals, Cambridge Technicals, Functional Skills, Key Skills, Entry Level qualifications, NVQs and vocational qualifications in areas such as IT, business, languages, teaching/training, administration and secretarial skills.

It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support, which keep pace with the changing needs of today's society.

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

MARKING INSTRUCTIONS

PREPARATION FOR MARKING

RM ASSESSOR

1. Make sure that you have accessed and completed the relevant training packages for on-screen marking: RM Assessor Online Training; OCR Essential Guide to Marking.
2. Make sure that you have read and understood the mark scheme and the question paper for this unit. These are available in RM Assessor.
3. Log-in to RM Assessor and mark the **required number** of practice responses (“scripts”) and the **required number** of standardisation responses.

MARKING

1. Mark strictly to the mark scheme.
2. Marks awarded must relate directly to the marking criteria.
3. The schedule of dates is very important. It is essential that you meet the RM Assessor 50% and 100% (traditional 50% Batch 1 and 100% Batch 2) deadlines. If you experience problems, you must contact your Team Leader (Supervisor) without delay.
4. If you are in any doubt about applying the mark scheme, consult your Team Leader by telephone, email or via the RM Assessor messaging system.

5. **Crossed Out Responses**
Where a candidate has crossed out a response and provided a clear alternative then the crossed out response is not marked. Where no alternative response has been provided, examiners may give candidates the benefit of the doubt and mark the crossed out response where legible.

Rubric Error Responses – Optional Questions
Where candidates have a choice of question across a whole paper or a whole section and have provided more answers than required, then all responses are marked and the highest mark allowable within the rubric is given. Enter a mark for each question answered into RM assessor, which will select the highest mark from those awarded. (The underlying assumption is that the candidate has penalised themselves by attempting more questions than necessary in the time allowed.)

Multiple Choice Question Responses
When a multiple choice question has only a single, correct response and a candidate provides two responses (even if one of these responses is correct), then no mark should be awarded (as it is not possible to determine which was the first response selected by the candidate).
When a question requires candidates to select more than one option/multiple options, then local marking arrangements need to ensure consistency of approach.

Contradictory Responses
When a candidate provides contradictory responses, then no mark should be awarded, even if one of the answers is correct.

Short Answer Questions (requiring only a list by way of a response, usually worth only **one mark per response**)
Where candidates are required to provide a set number of short answer responses then only the set number of responses should be marked. The response space should be marked from left to right on each line and then line by line until the required number of responses have been considered. The remaining responses should not then be marked. Examiners will have to apply judgement as to whether a 'second response' on a line is a development of the 'first response', rather than a separate, discrete response. (The underlying assumption is that the candidate is attempting to hedge their bets and therefore getting undue benefit rather than engaging with the question and giving the most relevant/correct responses.)

Short Answer Questions (requiring a more developed response, worth **two or more marks**)
If the candidates are required to provide a description of, say, three items or factors and four items or factors are provided, then mark on similar basis – that is downwards (as it is unlikely in this situation that a candidate will provide more than one response in each section of the response space.)

Longer Answer Questions (requiring a developed response)
Where candidates have provided two (or more) responses to a medium or high tariff question which only required a single (developed) response and not crossed out the first response, then only the first response should be marked. Examiners will need to apply professional judgement as to whether the second (or a subsequent) response is a 'new start' or simply a poorly expressed continuation of the first response.

6. Always check the pages (and additional objects if present) at the end of the response in case any answers have been continued there. If the candidate has continued an answer there then add a tick to confirm that the work has been seen.

7. Award No Response (NR) if:
   - there is nothing written in the answer space.

   Award Zero '0' if:
   - anything is written in the answer space and is not worthy of credit (this includes text and symbols).

   Team Leaders must confirm the correct use of the NR button with their markers before live marking commences and should check this when reviewing scripts.

8. The RM Assessor **comments box** is used by your Team Leader to explain the marking of the practice responses. Please refer to these comments when checking your practice responses. **Do not use the comments box for any other reason.**

   If you have any questions or comments for your Team Leader, use the phone, the RM Assessor messaging system, or email.

9. Assistant Examiners will send a brief report on the performance of candidates to their Team Leader (Supervisor) via email by the end of the marking period. The report should contain notes on particular strengths displayed as well as common errors or weaknesses. Constructive criticism of the question paper/mark scheme is also appreciated.

10. For answers marked by levels of response:

Read through the whole answer from start to finish, using the Level descriptors to help you decide whether it is a strong or weak answer. The indicative scientific content in the Guidance column indicates the expected parameters for candidates' answers, but be prepared to recognise and credit unexpected approaches where they show relevance. Using a 'best-fit' approach based on the skills and science content evidenced within the answer, first decide which set of level descriptors, Level 1, Level 2 or Level 3, best describes the overall quality of the answer.

Once the level is located, award the higher or lower mark:

The higher mark should be awarded where the level descriptor has been evidenced and all aspects of the communication statement (in italics) have been met.

The lower mark should be awarded where the level descriptor has been evidenced but aspects of the communication statement (in italics) are missing.

In summary:

The skills and science content determines the level.

The communication statement determines the mark within a level.

Level of response questions on this paper are **4c** and **6c**

11. Annotations available in RM Assessor

Annotation	Meaning
	Correct response
	Incorrect response
	Omission mark
BOD	Benefit of doubt given
CON	Contradiction
RE	Rounding error
SF	Error in number of significant figures
ECF	Error carried forward
L1	Level 1
L2	Level 2
L3	Level 3
NBOD	Benefit of doubt not given
SEEN	Noted but no credit given
I	Ignore

12. Abbreviations, annotations and conventions used in the detailed Mark Scheme (to include abbreviations and subject-specific conventions).

Annotation	Meaning
I	alternative and acceptable answers for the same marking point
✓	Separates marking points
DO NOT ALLOW	Answers which are not worthy of credit
IGNORE	Statements which are irrelevant
ALLOW	Answers that can be accepted
( )	Words which are not essential to gain credit
__	Underlined words must be present in answer to score a mark
ECF	Error carried forward
AW	Alternative wording
ORA	Or reverse argument

13. **Subject-specific Marking Instructions**

INTRODUCTION

Your first task as an Examiner is to become thoroughly familiar with the material on which the examination depends. This material includes:

- the specification, especially the assessment objectives
- the question paper
- the mark scheme.

You should ensure that you have copies of these materials.

You should ensure also that you are familiar with the administrative procedures related to the marking process. These are set out in the OCR booklet **Instructions for Examiners**. If you are examining for the first time, please read carefully **Appendix 5 Introduction to Script Marking: Notes for New Examiners**.

Please ask for help or guidance whenever you need it. Your first point of contact is your Team Leader.

The breakdown of Assessment Objectives for GCSE (9-1) in Biology/Chemistry/Physics/Combined Science B:

	Assessment Objective
AO1	**Demonstrate knowledge and understanding of scientific ideas and scientific techniques and procedures.**
AO1.1	Demonstrate knowledge and understanding of scientific ideas.
AO1.2	Demonstrate knowledge and understanding of scientific techniques and procedures.
AO2	**Apply knowledge and understanding of scientific ideas and scientific enquiry, techniques and procedures.**
AO2.1	Apply knowledge and understanding of scientific ideas.
AO2.2	Apply knowledge and understanding of scientific enquiry, techniques and procedures.
AO3	**Analyse information and ideas to interpret and evaluate, make judgements and draw conclusions and develop and improve experimental procedures.**
AO3.1	Analyse information and ideas to interpret and evaluate.
AO3.1a	Analyse information and ideas to interpret.
AO3.1b	Analyse information and ideas to evaluate.
AO3.2	Analyse information and ideas to make judgements and draw conclusions.
AO3.2a	Analyse information and ideas to make judgements.
AO3.2b	Analyse information and ideas to draw conclusions.
AO3.3	Analyse information and ideas to develop and improve experimental procedures.
AO3.3a	Analyse information and ideas to develop experimental procedures.
AO3.3b	Analyse information and ideas to improve experimental procedures.

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th>AO element</th><th>Guidance</th></tr>
<tr><td>1</td><td>(a)</td><td>(i)</td><td>
<table>
<tr><th></th><th>True only for the solid</th><th>True only for the liquid</th><th>True for both</th></tr>
<tr><td>The ions are close together.</td><td></td><td></td><td>✓</td></tr>
<tr><td>The ions are attracted by opposite charges.</td><td></td><td></td><td>✓</td></tr>
<tr><td>The ions are in a regular arrangement.</td><td>✓</td><td></td><td></td></tr>
<tr><td>The ions can move over each other.</td><td></td><td>✓</td><td></td></tr>
</table>
✓✓</td><td>2</td><td>1.1</td><td>All correct (2)
3 or 2 correct (1)</td></tr>
<tr><td></td><td>(b)</td><td>(i)</td><td>At 750°C sodium chloride is a <u>solid</u>
AND
At 750°C magnesium chloride is a <u>liquid</u>
✓</td><td>1</td><td>2.1</td><td></td></tr>
<tr><td></td><td></td><td>(ii)</td><td>Ions in different compounds have different charges ✓

The force of attraction between ions is different in different compounds.✓</td><td>2</td><td>1.1</td><td></td></tr>
<tr><td></td><td>(c)</td><td>(i)</td><td>atomic number ✓</td><td>1</td><td>2.1</td><td></td></tr>
<tr><td></td><td></td><td>(ii)</td><td>has one electron in its outer shell ✓
loses one electron ✓</td><td>2</td><td>2.1</td><td>IGNORE full shell</td></tr>
</table>

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th>AO element</th><th>Guidance</th></tr>
<tr><td>2</td><td>(a)</td><td></td><td>
<table>
<tr><th rowspan="2">Substance</th><th colspan="3">State symbol</th></tr>
<tr><th>(s)</th><th>(aq)</th><th>(l)</th></tr>
<tr><td>copper sulfate solution</td><td></td><td>✓</td><td></td></tr>
<tr><td>copper hydroxide precipitate</td><td>✓</td><td></td><td></td></tr>
</table>
</td><td>2</td><td>2.2</td><td></td></tr>
<tr><td></td><td>(b)</td><td></td><td>filter ✓
<u>then</u> dry (in an oven) / leave to dry / wash the filtrate (with water) / allow (water) to evaporate ✓</td><td>2</td><td>3.3a</td><td>IGNORE heating to dry</td></tr>
<tr><td></td><td>(c)</td><td>(i)</td><td>(as increase in volume of sodium hydroxide is added) mass of copper (hydroxide) goes up ✓
until 25cm^3 / then stays the same ✓</td><td>2</td><td>3.1a</td><td></td></tr>
<tr><td></td><td></td><td>(ii)</td><td>(Alex because)
Idea that copper sulfate is limiting reagent/can’t make more/maximum is 0.98 g ✓
Adding more sodium hydroxide does not have any effect / does not make a difference / graph has levelled out ✓</td><td>2</td><td>3.2a</td><td>Maximum 1 mark If “Jane” is ticked,</td></tr>
<tr><td></td><td>(d)</td><td>(i)</td><td>Line of best fit ignores outlier and goes from origin <u>and</u> flattens at 0.98 g✓</td><td>1</td><td>2.2</td><td>ALLOW curve past point at 0.98g</td></tr>
<tr><td></td><td></td><td>(ii)</td><td>Rings outlier at 10 cm^3✓</td><td>1</td><td>2.2</td><td></td></tr>
<tr><td></td><td></td><td>(iii)</td><td>Answer between 0.35-0.45 (g) ✓</td><td>1</td><td>2.2</td><td></td></tr>
<tr><td></td><td></td><td>(iv)</td><td>The copper hydroxide contained water when Jane weighed it.✓</td><td>1</td><td>2.2</td><td></td></tr>
</table>

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th>AO element</th><th>Guidance</th></tr>
<tr><td>3</td><td>(a)</td><td></td><td>hydrogen → lighted splint → pop ✓

oxygen → glowing splint → relights ✓</td><td>2</td><td>1.2</td><td></td></tr>
<tr><td></td><td>(b)</td><td></td><td>potassium hydroxide solution contains charged ions ✓</td><td>1</td><td>1.2</td><td></td></tr>
<tr><td></td><td>(c)</td><td>(i)</td><td><table><tr><th>Experiment</th><th>Mass of hydrogen used (g)</th><th>Mass of oxygen used (g)</th><th>Mass of water made (g)</th></tr><tr><td>3</td><td>0.50</td><td>4.0</td><td>4.5 ✓</td></tr><tr><td>4</td><td>1.0</td><td>8(.0)</td><td>9(.0) ✓</td></tr></table></td><td>2</td><td>2.1</td><td></td></tr>
<tr><td></td><td></td><td>(ii)</td><td>The hydrogen and oxygen are used up. ✓</td><td>1</td><td>2.1</td><td></td></tr>
<tr><td></td><td>(d)</td><td>(i)</td><td>hydrogen releases <u>more energy</u> (per kg of fuel) ✓
hydrogen only produces water / petrol produces harmful emissions ORA✓</td><td>2</td><td>3.1b</td><td>ALLOW (1) if two correct pieces of information are identified from the table without further explanation.</td></tr>
<tr><td></td><td></td><td>(ii)</td><td>hydrogen is a gas and so is difficult to store/fill up✓
needs more space to store / need more volume for the same mass of fuel ✓</td><td>2</td><td>3.1b</td><td>IGNORE issues which are not related to the table
ALLOW (1) if two correct pieces of information are identified from the table without further explanation.</td></tr>
</table>

Question			Answer	Marks	AO element	Guidance
4	(a)	(i)	**Any three from:** Potassium chloride increases solubility / Sodium chloride increases solubility / both salts increase solubility (as temperature rises) ✓ Potassium chloride solubility increases more than sodium chloride with increased temperature / increase temperature does not have a big effect on sodium chloride idea✓ Solubilities are the same at 30^{o}C ✓ At low temperatures sodium chloride is more soluble (than potassium chloride) / more sodium chloride (than potassium chloride) dissolves at low temperatures ✓ At higher temperatures potassium chloride is more soluble (than sodium chloride) / more potassium chloride dissolves (than sodium chloride) at higher temperatures ✓ Quotes 2 or more values from the graph ✓	**3**	**3.1a**	
	(b)	**(i)**	**FIRST CHECK THE ANSWER ON ANSWER LINE** **If answer = 50 (g in 100g water) award 2 marks** substitutes correctly into equation 26 + (0.3 x 80) ✓ calculates value = 50 (g in 100 g water) ✓	**2**	**2.2**	
		(ii)	51-53 (g/100g water) ✓ (yes or no) Compares answer to Q4 (b) (i) Idea that answers are very close together / close enough for prediction to be useful / not identical ✓	**2**	**3.1b**	

Question			Answer	Marks	AO element	Guidance
	(c)*		Please refer to the marking instructions on page 4 of this mark scheme for guidance on how to mark this question. **Level 3 (5–6 marks)** **Describes a valid method involving different temperatures, including measurements AND states results.** There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated. **Level 2 (3–4 marks)** **Describes a method involving different temperatures OR states results** There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence. **Level 1 (1–2 marks)** **States a factor to control OR a measurement to take** There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant. 0 marks No response or no response worthy of credit.	**6**	**4 x 2.2 2 x 3.3a**	**Applies knowledge and understanding to describe measurements and results (AO2.2)** • more solid dissolves at higher temperatures • work out difference in mass • measure temperature /states temperatures to use • weigh 100g of water each time **Analyses information to develop experimental procedure (AO 3.3a)** • add solid to water until no more solid dissolves and weigh mixture • weigh beaker or bottle of at start • weigh beaker or bottle and solid at end • heat water to different temperatures • use the same amount or mass of water / use 100g of water each time.

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th>AO element</th><th>Guidance</th></tr>
<tr><td>5</td><td>(a)</td><td></td><td>calcium is more reactive than carbon ✓</td><td>1</td><td>2.1</td><td></td></tr>
<tr><td></td><td>(b)</td><td>(i)</td><td>Silver ✓</td><td>1</td><td>1.1</td><td></td></tr>
<tr><td></td><td></td><td>(ii)</td><td>Any two from:
potassium and sodium are in group 1 ✓

calcium is not in Group 1 / is in Group 2 / is in another group✓

there are other metals in Group 1/more reactive than carbon which are not shown✓</td><td>2</td><td>3.1a</td><td></td></tr>
<tr><td></td><td>(c)</td><td>(i)</td><td><table><tr><th>Metal</th><th>Extracted by heating with carbon</th><th>Extracted by electrolysis</th></tr><tr><td>zinc</td><td>✓</td><td></td></tr><tr><td>aluminium</td><td></td><td>✓</td></tr></table>✓</td><td>1</td><td>2.1</td><td></td></tr>
<tr><td></td><td>(c)</td><td>(ii)</td><td>carbon and harder ✓</td><td>1</td><td>1.2</td><td></td></tr>
<tr><td></td><td>(d)</td><td>(i)</td><td>copper oxide + carbon → copper + carbon dioxide

Fully correct equation [2 marks] ✓✓
One correct product: copper/carbon dioxide [1 mark]✓</td><td>2</td><td>2.1</td><td>IGNORE any use of state symbols and numbers</td></tr>
<tr><td></td><td></td><td>(ii)</td><td>(oxidised) carbon AND (reduced) copper ✓
carbon gains oxygen and copper loses oxygen ✓</td><td>2</td><td>2.1</td><td>ALLOW copper oxide is reduced</td></tr>
<tr><td></td><td></td><td>(iii)</td><td>Mass of solids decreases ✓</td><td>1</td><td>2.1</td><td></td></tr>
<tr><td></td><td></td><td>(iv)</td><td>Gas is given off / carbon dioxide is given off ✓</td><td>1</td><td>2.1</td><td></td></tr>
</table>

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th>AO element</th><th>Guidance</th></tr>
<tr><td>6</td><td>(a)</td><td></td><td>2 electrons ✓
are shared ✓</td><td>2</td><td>1.1</td><td></td></tr>
<tr><td></td><td>(b)</td><td></td><td>
<table>
<tr><th></th><th>Only true for Diamond</th><th>Only true for carbon dioxide</th><th>True for both</th></tr>
<tr><td>It is a compound.</td><td></td><td>✓</td><td></td></tr>
<tr><td>Each carbon atom has four bonds.</td><td></td><td></td><td>✓</td></tr>
<tr><td>It is an allotrope of carbon</td><td>✓</td><td></td><td></td></tr>
<tr><td>It is found in the air.</td><td></td><td>✓</td><td></td></tr>
</table>
✓✓
</td><td>2</td><td>1.1</td><td>All 4 correct (2)
3 or 2 correct (1)</td></tr>
</table>

Question	Answer	Marks	AO element	Guidance
(c)*	Please refer to the marking instructions on page 4 of this mark scheme for guidance on how to mark this question. **Level 3 (5–6 marks)** Explains differences in terms of energy needed linked to correct discussion of intermolecular forces and bonds. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated. **Level 2 (3–4 marks)** Explains differences in terms of energy needed linked to strength of forces between particles and makes a correct statement about intermolecular forces or bonds. There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence. **Level 1 (1–2 marks)** Explains differences in terms of energy. **OR** Explains differences in terms of forces. There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant. **0 marks** No response or no response worthy of credit.	**6**	**2 x 1.1** **4 x 2.1**	**Demonstrates knowledge of intermolecular forces and bonds (AO1.1)** • When diamond melts, (covalent) bond break between carbon atoms. • When carbon dioxide melts, intermolecular forces are broken/forces between molecules are broken • (Covalent) bonds (between atoms) are stronger than intermolecular forces • More energy is needed to overcome (covalent) bonds (between atoms) than to break intermolecular forces. • Bond between atoms in carbon dioxide do not break when carbon dioxide melts. **Applies knowledge and understanding to explain differences in terms of energy and forces (AO2.1)** • Diamond has higher melting point because it needs more energy to change from a solid to a liquid/to melt ORA • Diamond has higher melting point because more or greater forces need to be broken/overcome to change from a solid to a liquid/to melt ORA • Idea that diamond has a very high melting point / idea that carbon dioxide has a very low melting point / melting point is below room temperature / idea that carbon dioxide is a gas and diamond is a solid

Question			Answer	Marks	AO element	Guidance
7	(a)		7800 – 8000 ✓	1	2.1	
	(b)		From 320 - 280 ✓	1	2.1	**ALLOW** 315 – 325 to 285 – 270
	(c)		**FIRST CHECK THE ANSWER ON ANSWER LINE** **If answer = 0.038(%) award 2 marks** Shows 380 / 10000 in calculation /correct substitution ✓ To give 0.038 % ✓	2	2.1	
	(d)		Idea that both follow the same pattern / both increase ✓	1	3.2b	
	(e)		**Any two from:** ice caps melting ✓ loss of habitats ✓ forest fires ✓ sea level rise / flooding ✓ crops failure ✓ (more) severe weather events ✓	2	1.1	**IGNORE** Deforestation **IGNORE** increased temperatures'/global warming **IGNORE** Tsunamis **IGNORE** irregular weather

Question			Answer	Marks	AO element	Guidance
8	(a)	(i)	 ✓	1	1.2	
		(ii)	**Any two from:** avoid naked flames / don't smoke / no mobile phones / no electronic devices ✓ switch off engine when refuelling ✓ avoid spills/replace cap or petrol nozzle quickly / avoid contact with hands / wear gloves / avoid inhaling vapour ✓	2	1.2	.
	(b)		forms four bonds / has four electrons available for bonding / forms chains/rings/tubes/balls/3 D structures ✓	1	2.1	
	(c)		(structure) polyethene has no bonds between chains / only weak forces between chains / poly(ethene) has weak intermolecular forces / rubber has (sulfur) bonds between chains ✓ (properties) rubber has higher melting point/harder/stronger/not flexible/not stretchy/doesn't break easily ORA ✓	2	2.1	**ALLOW** attractions=forces **ALLOW** cross links=bonds **IGNORE** rubber has double bonds/intermolecular forces
	(d)	(i)	**Any one from:** they are in the shape of balls/tubes ✓ they have only one type of atom / only carbon / only one element ✓ they have a large surface area to volume (ratio) / they are very small / measured in nanometres10^{-9} m ✓	1	2.1	**IGNORE** they are 3-D **ALLOW** carbon atoms in hexagons/pentagons **IGNORE** small/smaller **ALLOW** tiny
		(ii)	**Any two from:** idea that small size allows them to enter cells/tissue/blood ✓ balls and tubes have hollow middles ✓ medicine molecules fit inside ✓	2	1.1	

Question			Answer	Marks	AO element	Guidance
9	(a)	(i)	Reaction is reversible / is an equilibrium reaction / products reform reactants / goes backwards ✓	1	1.1	**IGNORE** not all reactants form products
		(ii)	nitrogen and hydrogen ✓	1	1.1	**IGNORE** N_2 and H_2
	(b)		**FIRST CHECK THE ANSWER ON ANSWER LINE** **If answer = 13 (%) award 2 marks** 19.5 / 150 ✓ (x 100 =) 13 (%) ✓	2	1.2	**ALLOW (1)** for 0.13 %
	(c)	(i)	The ammonia dissolves / forms a solution / becomes aqueous ✓	1	2.1	**IGNORE** reacts
		(ii)	gas syringe✓	1	3.3b	
	(d)	(i)	accept values >7≤14✓	1	1.2	**ALLOW** above 7 **ALLOW** stated value or range within >7≤14
		(ii)	use universal indicator/paper / pH indicator/paper ✓ compare colour to (pH) chart/scale ✓	2	1.2	**IGNORE** indicator alone **DO NOT ALLOW** other named indicators **IGNORE** colour shows pH alone **ALLOW** M2 if any indicator is given

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

Twitter/ocrexams

/ocrexams

/company/ocr

/ocrexams

CAMBRIDGE
UNIVERSITY PRESS & ASSESSMENT

OCR is part of Cambridge University Press & Assessment, a department of the University of Cambridge.

OCR operates academic and vocational qualifications regulated by Ofqual, Qualifications Wales and CCEA as listed in their qualifications registers including A Levels, GCSEs, Cambridge Technicals and Cambridge Nationals.

OCR provides resources to help you deliver our qualifications. These resources do not represent any particular teaching method we expect you to use. We update our resources regularly and aim to make sure content is accurate but please check the OCR website so that you have the most up-to-date version. OCR cannot be held responsible for any errors or omissions in these resources.

Though we make every effort to check our resources, there may be contradictions between published support and the specification, so it is important that you always use information in the latest specification. We indicate any specification changes within the document itself, change the version number and provide a summary of the changes. If you do notice a discrepancy between the specification and a resource, please contact us.

Whether you already offer OCR qualifications, are new to OCR or are thinking about switching, you can request more information using our Expression of Interest form.

Please get in touch if you want to discuss the accessibility of resources we offer to support you in delivering our qualifications.