

Write your name here	
Surname	Other names
Centre Number	Candidate Number
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<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <h1 style="margin: 0;">Edexcel GCSE</h1> <h2 style="margin: 0;">Chemistry/Additional Science</h2> <h3 style="margin: 0;">Unit C2: Discovering Chemistry</h3> </div> <div style="width: 35%; text-align: right;"> <h3 style="margin: 0;">Foundation Tier</h3> </div> </div>	
<b>Additional Sample Assessment Material</b> <b>Time: 1 hour</b>	Paper Reference <h2 style="margin: 0;">5CH2F/01</h2>
<b>You must have:</b> Calculator, ruler	Total Marks <div style="border: 1px solid black; width: 50px; height: 50px; margin: 0 auto;"></div>

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*

### Information

- The total mark for this paper is 60.
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (\*) are ones where the quality of your written communication will be assessed  
– *you should take particular care with your spelling, punctuation and grammar, as well as the clarity of expression, on these questions.*

### Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

*Turn over ►*

S39594A

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6/8/8/2/



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 advancing learning, changing lives

# THE PERIODIC TABLE

Period 1 2 3 4 5 6 7 0

Group

Period

1	<div> <div>1</div> <div>H</div> <div>Hydrogen</div> <div>1</div> </div>	<div> <div>4</div> <div>He</div> <div>Helium</div> <div>2</div> </div>
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Key

Molar mass g mol <sup>-1</sup>
Symbol
Name
Atomic number

2	7 Li Lithium	9 Be Beryllium	Name Atomic number										11 B Boron	12 C Carbon	14 N Nitrogen	16 O Oxygen	19 F Fluorine	20 Ne Neon		
	3 Na Sodium	4 Mg Magnesium											5 Al Aluminium	6 Si Silicon	7 P Phosphorus	8 S Sulphur	9 Cl Chlorine	10 Ar Argon		
3	11 K Potassium	12 Ca Calcium	14 Sc Scandium	15 Ti Titanium	16 V Vanadium	17 Cr Chromium	18 Mn Manganese	19 Fe Iron	20 Co Cobalt	21 Ni Nickel	22 Cu Copper	23 Zn Zinc	24 Ga Gallium	25 Ge Germanium	26 As Arsenic	27 Se Selenium	28 Br Bromine	29 Kr Krypton		
	19 Rb Rubidium	20 Sr Strontium	21 Y Yttrium	22 Zr Zirconium	23 Nb Niobium	24 Mo Molybdenum	25 Tc Technetium	26 Ru Ruthenium	27 Rh Rhodium	28 Pd Palladium	29 Ag Silver	30 Cd Cadmium	31 In Indium	32 Sn Tin	33 Sb Antimony	34 Te Tellurium	35 I Iodine	36 Xe Xenon		
4	37 Cs Caesium	38 Ba Barium	39 La Lanthanum	40 Hf Hafnium	41 Ta Tantalum	42 W Tungsten	43 Re Rhenium	44 Os Osmium	45 Ir Iridium	46 Pt Platinum	47 Au Gold	48 Hg Mercury	49 Tl Thallium	50 Pb Lead	51 Bi Bismuth	52 Po Polonium	53 At Astatine	54 Rn Radon		
	55 Fr Francium	56 Ra Radium	57 Ac Actinium											81 Th Thorium	82 Pa Protactinium	83 U Uranium	84 Np Neptunium	85 Pu Plutonium	86 Am Americium	
5	87 Fr Francium	88 Ra Radium	89 Ac Actinium											81 Th Thorium	82 Pa Protactinium	83 U Uranium	84 Np Neptunium	85 Pu Plutonium	86 Am Americium	87 Cm Curium
	93 Np Neptunium	94 Pu Plutonium	95 Am Americium	96 Cm Curium	97 Bk Berkelium	98 Cf Californium	99 Es Einsteinium	100 Fm Fermium	101 Md Mendelevium	102 No Nobelium	103 Lr Lawrencium	104 Rf Rutherfordium	105 Db Dubnium	106 Sg Seaborgium	107 Bh Bohrium	108 Hs Hassium	109 Mt Meitnerium	110 Ds Darmstadtium		
6	115 Nh Nihonium	116 Fl Flerovium	117 Ts Tennessine	118 Og Oganesson											115 Nh Nihonium	116 Fl Flerovium	117 Ts Tennessine	118 Og Oganesson	119 Uu Ununennium	120 Uub Unbibium
	119 Uue Ununennium	120 Uub Unbibium	121 Uut Untrium	122 Uuq Unquadrium	123 Uup Unpentium	124 Uuh Unhexium	125 Uuq Unseptium	126 Uuh Unoctium	127 Uus Unnonium	128 Uuo Undecium	129 Uuu Undecium	130 Uuq Untridecium	131 Uub Unquadecium	132 Uut Unpentecium	133 Uuq Unhexecium	134 Uuh Unseptecium	135 Uuh Unoctecium	136 Uus Unnovecium		
7	151 Ubu Unbiunium	152 Ubb Unbibium	153 Ubt Unbium	154 Ubu Untrium	155 Ubb Unquadrium	156 Ubt Unpentium	157 Ubu Unhexium	158 Ubb Unseptium	159 Ubt Unoctium	160 Ubu Unnonium	161 Ubb Undecium	162 Ubt Untridecium	163 Ubu Unquadecium	164 Ubb Unpentecium	165 Ubt Unhexecium	166 Ubu Unseptecium	167 Ubb Unoctecium	168 Ubt Unnovecium		
	169 Ubu Unbiunium	170 Ubb Unbibium	171 Ubt Unbium	172 Ubu Untrium	173 Ubb Unquadrium	174 Ubt Unpentium	175 Ubu Unhexium	176 Ubb Unseptium	177 Ubt Unoctium	178 Ubu Unnonium	179 Ubb Undecium	180 Ubt Untridecium	181 Ubu Unquadecium	182 Ubb Unpentecium	183 Ubt Unhexecium	184 Ubu Unseptecium	185 Ubb Unoctecium	186 Ubt Unnovecium		

140	Ce	141	Pr	144	Nd	150	Sm	152	Eu	157	Gd	159	Tb	163	Dy	165	Ho	167	Er	169	Tm	173	Yb	175	Lu
58	Cerium	59	Praseodymium	60	Neodymium	62	Samarium	63	Europium	64	Gadolinium	65	Terbium	66	Dysprosium	67	Holmium	68	Erbium	69	Thulium	70	Ytterbium	71	Lutetium

232	Th	231	Pa	238	U	237	Np	243	Am	247	Cm	245	Bk	251	Cf	254	Es	253	Fm	256	Md	254	No	257	Lr
90	Thorium	91	Protactinium	92	Uranium	93	Neptunium	94	Plutonium	96	Curium	97	Berkelium	98	Californium	99	Einsteinium	100	Fermium	101	Mendelevium	102	Nobelium	103	Lawrencium

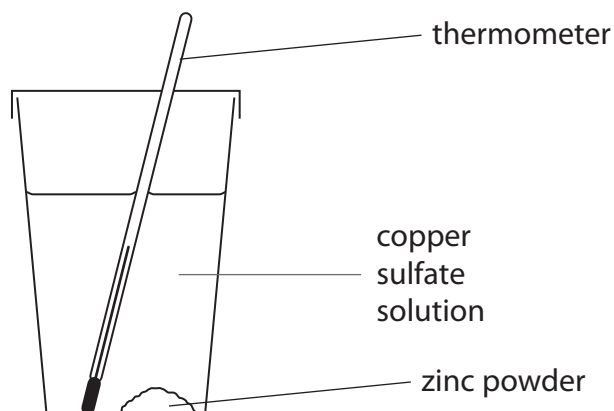


### Answer ALL questions

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

### Reactions

- 1 (a) Beverlyn does an experiment to measure the temperature rise when a reaction occurs. She adds zinc powder to copper sulfate solution in the apparatus shown.



The zinc powder reacts with the copper sulfate solution to produce zinc sulfate solution and copper.

- (i) Write the word equation for the reaction.

(2)

- (ii) These are Beverlyn's results.

temperature of solution at the start of the reaction = 27 °C

temperature of solution at the end of the reaction = 32 °C

Calculate the rise in temperature in this reaction.

(1)



(iii) Complete the sentence by putting a cross (☒) in the box next to your answer.

Heat is given off during the reaction.

This shows the reaction is

(1)

- ☐ **A** a decomposition reaction
- ☐ **B** an endothermic reaction
- ☐ **C** an exothermic reaction
- ☐ **D** a precipitation reaction

(b) Catalysts are added to some reactions.

(i) Explain what a catalyst is.

(2)

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(ii) Explain the benefits of using catalytic converters in car exhaust systems.

(2)

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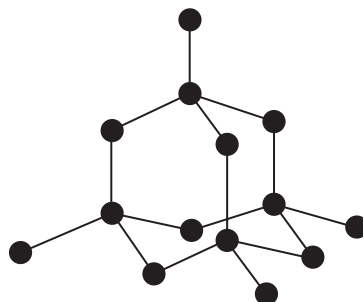
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**(Total for Question 1 = 8 marks)**



## Structures

2 The diagram shows part of the structure of diamond.



(a) How many bonds does a typical carbon atom in diamond form?

(1)

(b) Complete the sentences by putting a cross (☒) in the box next to your answer.

(i) The bonds between carbon atoms in diamond contain

(1)

- ☐ **A** protons
- ☐ **B** neutrons
- ☐ **C** electrons
- ☐ **D** ions

(ii) The structure of diamond is

(1)

- ☐ **A** simple molecular, covalent
- ☐ **B** giant molecular, covalent
- ☐ **C** ionic
- ☐ **D** metallic



(c) Hexane and water are immiscible.

The diagram shows a piece of apparatus being used to separate a mixture of hexane and water.



(i) Give the name of this piece of apparatus.

(1)

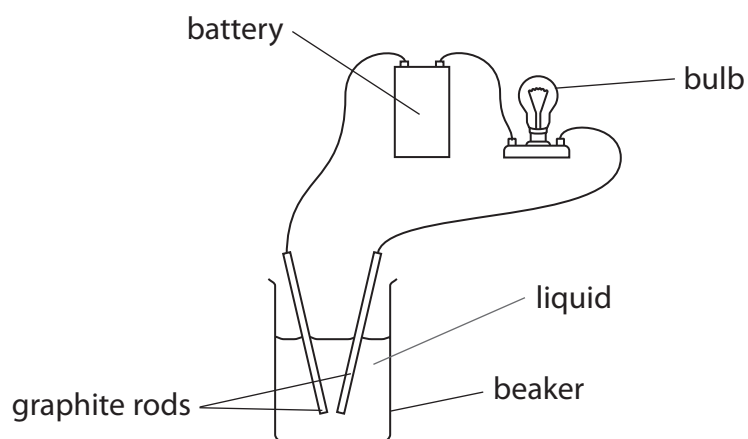
(ii) The density of hexane is less than the density of water.

Describe how this apparatus can be used to produce separate samples of hexane and water.

(2)



(d) The apparatus shown can be used to test the electrical conductivity of liquids.



Describe how you would use this apparatus to show that the electrical conductivity of hexane is that of a typical simple molecular, covalent compound.

(2)

(Total for Question 2 = 8 marks)



### Solid compounds

- 3 (a) The table shows the melting points, solubility in water and relative electrical conductivity of a solution in water for five substances.

The properties of each substance can be used to decide the type of structure of the substance, shown in the last column.

The structure of solid X is not shown.

substance	melting point /°C	solubility in water	relative electrical conductivity, when dissolved in water	type of structure
sodium nitrate	307	soluble	good	ionic
silicon(IV) oxide	1610	insoluble	does not dissolve in water	giant molecular, covalent
calcium chloride	782	soluble	good	ionic
glucose	146	soluble	poor	simple molecular, covalent
solid X	808	soluble	good	

Use the information in the table to explain what type of structure solid X has.

(2)

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- (b) Complete the sentence by putting a cross (☒) in the box next to your answer.

A flame test was carried out on another solid.

A flame test can be used to show the presence of

(1)

- ☐ A carbon dioxide
- ☐ B methane
- ☐ C nitrate ions
- ☐ D sodium ions





(c) Calcium chloride contains calcium ions and chloride ions.

Describe how a calcium atom, Ca, forms a calcium ion,  $\text{Ca}^{2+}$ .

(2)

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(d) Lead chloride is an insoluble salt.

It can be produced as a precipitate by mixing sodium chloride solution with a solution of a lead salt.

Complete the word equation for the reaction that takes place when sodium chloride solution is mixed with a solution of your chosen lead salt.

(2)

sodium chloride + ..... → lead chloride + .....

(e) Describe a test to show that calcium chloride solution contains chloride ions.

(3)

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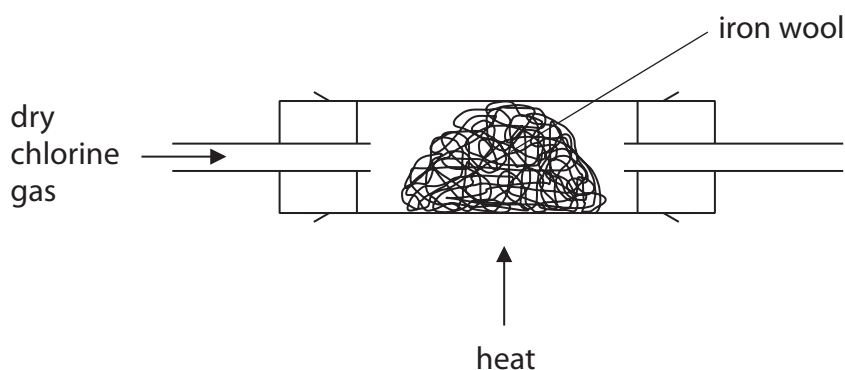
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**(Total for Question 3 = 10 marks)**



## Iron chloride

- 4 Iron and chlorine react to form iron chloride.  
The apparatus shown is used to carry out the reaction.



- (a) Which of these hazard symbols should be on a cylinder of chlorine to show that it is toxic?

Put a cross (X) in the box next to your answer.

(1)



☐ A



☐ B



☐ C



☐ D

- (b) Safety precautions must be taken when carrying out this experiment.

- (i) State a precaution that must be taken because chlorine is toxic.

(1)

- (ii) State any other precaution that should be taken.

(1)

(c) (i) This periodic table shows the position of four elements, **A**, **B**, **C** and **D**.

[illegible]

Iron is a transition metal.

Which letter shows the position of iron in the periodic table? .....

(1)

(ii) State **two** properties of iron or its compounds which show that it is a typical transition metal.

(2)

property 1 .....

property 2.....

(d) Calculate the relative formula mass of iron chloride,  $\text{FeCl}_3$ .

(Relative formula masses: Cl = 35.5, Fe = 56)

(2)

answer = .....

(e) Complete the balanced equation for the reaction of iron with chlorine to form iron chloride.

(2)



- (f) In an experiment iron reacts with chlorine to produce 13.00 g of iron chloride.  
The theoretical yield of this reaction is calculated to be 16.25g.

Calculate the percentage yield of the reaction.

(2)

answer .....

**(Total for Question 4 = 12 marks)**



## Elements

**5** Mendeleev produced the first periodic table.

In a version of his periodic table, he put these elements in group 1.

hydrogen

lithium

sodium

potassium

copper

rubidium

silver

caesium

gold

(a) Some of the elements in this list are also in group 1 of the modern periodic table.

Which element is in the list above and also in group 1 of the modern periodic table?

Put a cross (☒) in the box next to your answer.

(1)

☐ **A** gold

☐ **B** silver

☐ **C** copper

☐ **D** sodium

(b) The element francium is now included in group 1 of the modern periodic table but did not appear anywhere in Mendeleev's periodic table.

Suggest why francium was not in Mendeleev's periodic table.

(1)



(c) Explain why hydrogen is not included in group 1 in most versions of the modern periodic table.

(2)

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(d) The atomic number and electronic configurations of three elements are shown in the table below.

element	atomic number	electronic configuration
lithium	3	2.1
sodium	11	2.8.1
potassium	19	2.8.8.1

Describe how the electronic configuration of sodium shows the group and period of sodium in the periodic table.

(2)

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\*(e) An atom of beryllium has an atomic number of 4 and a mass number of 9.

Describe the numbers and arrangements of the protons, neutrons and electrons in this atom.

(6)

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**(Total for Question 5 = 12 marks)**



S 3 9 5 9 4 A 0 1 5 1 7

### Group 7

6 (a) The elements fluorine, chlorine, bromine and iodine are all in group 7 of the periodic table.

(i) State the name given to the elements in group 7.

(1)

(ii) Give the symbol for an atom of bromine.

(1)

(b) The table shows the states and colours of three of these elements at room temperature.

The information for chlorine is missing.

element	state at room temperature	colour at room temperature
fluorine	gas	pale yellow
chlorine		
bromine	liquid	dark red
iodine	solid	grey

Use the information in the table to describe the appearance of chlorine at room temperature.

(2)





- \*(c) When chlorine is added to a solution of potassium bromide, a colour change is seen.  
When chlorine is added to a solution of potassium fluoride, no colour change is seen.

Explain how these observations provide evidence for the order of reactivity of bromine, chlorine and fluorine.

(6)

(Total for Question 6 = 10 marks)

**TOTAL FOR PAPER = 60 MARKS**





# Additional Sample Mark Scheme

## GCSE Science 2011

GCSE

GCSE Chemistry (5CH2F/01)

## General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- For questions worth more than one mark, the answer column shows how partial credit can be allocated. This has been done by the inclusion of part marks eg (1).
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

### Quality of Written Communication

Questions which involve the writing of continuous prose will expect candidates to:

- Write legibly, with accurate spelling, grammar and punctuation in order to make the meaning clear
- Select and use a form and style of writing appropriate to purpose and to complex subject matter
- Organise information clearly and coherently, using specialist vocabulary when appropriate.

Full marks will be awarded if the candidate has demonstrated the above abilities.

Questions where QWC is likely to be particularly important are indicated (QWC) in the mark scheme, but this does not preclude others.

## General Information

The following symbols are used in the mark schemes for all questions:

Symbol	Meaning of symbol
eq	Indicates that credit should be given for other correct alternatives to a word or statement
/ oblique	Words or phrases separated by an oblique are alternatives to each other
{ } curly brackets	Indicate the beginning and end of a list of alternatives (separated by obliques) where necessary to avoid confusion
( ) round brackets	Words inside round brackets are to aid understanding of the marking point but are not required to award the point

Question Number	Answer	Acceptable answers	Mark
1(a)(i)	<ul style="list-style-type: none"> <li>copper sulphate and zinc(1)</li> <li>zinc sulphate and copper (1)</li> </ul>	Allow zinc powder	(2)

Question Number	Answer	Acceptable answers	Mark
1(a)(ii)	5 (°C)		(1)

Question Number	Answer	Acceptable answers	Mark
1(a)(iii)	C		(1)

Question Number	Answer	Acceptable answers	Mark
1(b)(i)	<p>An explanation linking the following points</p> <ul style="list-style-type: none"> <li>(catalyst) speeds up the reaction (1)</li> <li>(catalyst) is unchanged chemically and in mass at end of reaction</li> </ul>	(provides alternative reaction path) lowers activation energy	(2)

Question Number	Answer	Acceptable answers	Mark
1(b)(ii)	<p>An explanation linking the following points</p> <ul style="list-style-type: none"> <li>speeds up reaction of carbon monoxide / unburnt fuel with oxygen from air (1)</li> <li>prevents / reduces amount of harmful gases (in the exhaust gases) from entering the air (1)</li> </ul>		(2)

Question Number	Answer	Acceptable answers	Mark
2(a)	four/4		(1)

Question Number	Answer	Acceptable answers	Mark
2(b)(i)	C		(1)

Question Number	Answer	Acceptable answers	Mark
2(b)(ii)	B		(1)

Question Number	Answer	Acceptable answers	Mark
2(c)(i)	separating funnel		(1)

Question Number	Answer	Acceptable answers	Mark
2(c)(ii)	<p>A description including <b>two</b> of the following points</p> <ul style="list-style-type: none"> <li>• run off lower layer (1)</li> <li>• stop when liquid junction half way through tap(1)</li> <li>• other liquid left in funnel / pour upper layer out through top (1)</li> <li>• upper layer is hexane / lower layer is water(1)</li> </ul>		(2)

Question Number	Answer	Acceptable answers	Mark
2(d)	<p>A description including <b>two</b> of the following points</p> <ul style="list-style-type: none"> <li>• test circuit first to ensure bulb lights</li> <li>• pour hexane / liquid into beaker(1)</li> <li>• bulb does not light(1)</li> <li>• (liquid)does not conduct (electricity)(1)</li> </ul>		(2)



Question Number	Answer	Acceptable answers	Mark
3(a)	<p>An explanation linking the following points</p> <ul style="list-style-type: none"> <li>• ionic (1)</li> <li>• (because) it has high melting point / is soluble in water / has a solution that conducts (1)</li> </ul>		(2)

Question Number	Answer	Acceptable answers	Mark
3(b)	D		(1)

Question Number	Answer	Acceptable answers	Mark
3(c)	<p>A description including <b>two</b> of the following points</p> <ul style="list-style-type: none"> <li>• loses electrons(1)</li> <li>• two (electrons) (1)</li> <li>• from the outer shell (1)</li> </ul>		(2)

Question Number	Answer	Acceptable answers	Mark
3(d)	<ul style="list-style-type: none"> <li>• lead nitrate(1)LHS</li> <li>• sodium nitrate(1)RHS</li> </ul>	<p>any soluble lead salt</p> <p>corresponding sodium salt</p>	(2)

Question Number	Answer	Acceptable answers	Mark
3(e)	<p>A description including the following points</p> <ul style="list-style-type: none"> <li>• add dilute nitric acid(1)</li> <li>• add silver nitrate solution(1)</li> <li>• white {solid / precipitate} (forms)(1)</li> </ul>		(3)

Question Number	Answer	Acceptable answers	Mark
4(a)	B		(1)

Question Number	Answer	Acceptable answers	Mark
4(b)(i)	carry out experiment in a fume cupboard		(1)

Question Number	Answer	Acceptable answers	Mark
4(b)(ii)	wear goggles / lab coat / gloves		(1)

Question Number	Answer	Acceptable answers	Mark
4(c)(i)	C		(1)

Question Number	Answer	Acceptable answers	Mark
4(c)(ii)	Any two from the following points <ul style="list-style-type: none"> <li>• high melting point (1)</li> <li>• high density (1)</li> <li>• good conductor of heat (1)</li> <li>• good conductor of electricity (1)</li> <li>• forms coloured compounds (1)</li> </ul>		(2)

Question Number	Answer	Acceptable answers	Mark
4(d)	$35.5 \times 3$ (1) + 56 (1) 162.5	162.5 or 163 on its own gains 2 marks	(2)

Question Number	Answer	Acceptable answers	Mark
4(e)	<ul style="list-style-type: none"> <li>• 2(Fe) (1)</li> <li>• 3 (Cl<sub>2</sub>) (1)</li> </ul>		(2)

Question Number	Answer	Acceptable answers	Mark
4(f)	$13.00/16.25$ (1) $\times 100$ (1) = 80%	80% on its own gains 2 marks	(2)

Question Number	Answer	Acceptable answers	Mark
5(a)	D		(1)

Question Number	Answer	Acceptable answers	Mark
5(b)	had not been discovered	did not know about it	(1)

Question Number	Answer	Acceptable answers	Mark
5(c)	<p>An explanation linking the following points</p> <p><b>EITHER</b></p> <ul style="list-style-type: none"> <li>different properties (to other group 1 elements)(1)</li> <li>elements in a group have similar (chemical) properties(1)</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>hydrogen is a non-metal / not a metal (1)</li> <li>all the other elements are metals (1)</li> </ul>		(2)

Question Number	Answer	Acceptable answers	Mark
5(d)	<p>A description including the following points</p> <ul style="list-style-type: none"> <li>one electron in outer shell so in group 1(1)</li> <li>(electrons in) three shells so in period 3 (1)</li> </ul>		(2)

Question Number		Indicative content	Mark
QWC	*5(e)	<p>A description including some of the following points</p> <ul style="list-style-type: none"> <li>• four protons</li> <li>• five neutrons</li> <li>• four electrons</li> <li>• protons in nucleus</li> <li>• neutrons in nucleus</li> <li>• electrons in shells</li> <li>• two electrons in first shell</li> <li>• two electrons in second/outer shell</li> </ul> <p>last two points could be expressed as electronic configuration is 2.2</p> <p>allow correct diagram</p>	(6)
Level	0	no rewardable material	
1	1-2	<ul style="list-style-type: none"> <li>• correct number or position of one type of particle / correct numbers or positions or two particles</li> <li>• the answer communicates ideas using simple language and uses limited scientific terminology</li> <li>• spelling, punctuation and grammar are used with limited accuracy</li> </ul>	
2	3-4	<ul style="list-style-type: none"> <li>• correct number and position of one type of particle and two other correct numbers and /or positions of other particle(s)</li> <li>• the answer communicates ideas showing some evidence of clarity and organisation and uses scientific terminology appropriately</li> <li>• spelling, punctuation and grammar are used with some accuracy</li> </ul>	
3	5 - 6	<ul style="list-style-type: none"> <li>• correct number and position of all three particles / one error in former and correct electronic configuration</li> <li>• the answer communicates ideas clearly and coherently uses a range of scientific terminology accurately</li> <li>• spelling, punctuation and grammar are used with few errors</li> </ul>	

Question Number	Answer	Acceptable answers	Mark
6(a)(i)	halogens	do not accept group 7	(1)

Question Number	Answer	Acceptable answers	Mark
6(a)(ii)	Br	do not accept BR, br etc do not accept Br <sub>2</sub>	(1)

Question Number	Answer	Acceptable answers	Mark
6(b)(i)	yellow green (1) gas (1)		(2)

Question Number	Indicative Content		Mark
QWC	*6(c)	<p>A explanation to include some of the following points</p> <ul style="list-style-type: none"> <li>• colour change shows reaction occurs</li> <li>• chlorine reacts with potassium bromide solution</li> <li>• bromine is formed</li> <li>• colour is red brown</li> <li>• chlorine displaces bromide ions</li> <li>• chlorine is more reactive than bromine</li> <li>• no colour change shows no reaction / chlorine does not react with potassium fluoride solution</li> <li>• chlorine does not displace fluoride ions</li> <li>• chlorine is less reactive than fluorine</li> <li>• order of reactivity from most reactive halogen is fluorine, chlorine, bromine</li> </ul>	(6)
Level	0	No rewardable content	
1	1 - 2	<ul style="list-style-type: none"> <li>• a limited description of at least two relevant points either from one reaction or from both reactions</li> <li>• the answer communicates ideas using simple language and uses limited scientific terminology</li> <li>• spelling, punctuation and grammar are used with limited accuracy</li> </ul>	
2	3 - 4	<ul style="list-style-type: none"> <li>• a detailed description of one reaction (one minor omission may be ignored) / a limited description of some aspects of both reactions</li> <li>• the answer communicates ideas showing some evidence of clarity and organisation and uses scientific terminology appropriately</li> <li>• spelling, punctuation and grammar are used with some accuracy</li> </ul>	
3	5 - 6	<ul style="list-style-type: none"> <li>• a detailed description of both reactions (one minor omission may be ignored)</li> <li>• the answer communicates ideas clearly and coherently uses a range of scientific terminology accurately</li> <li>• spelling, punctuation and grammar are used with few errors</li> </ul>	