

Question Number	Answer	Acceptable answers	Mark
1(a)(i)	electrical (energy) / electricity / direct (electric) current		(1)

Question Number	Answer	Acceptable answers	Mark
1(a)(ii)	A description including <ul style="list-style-type: none"> {light / ignite} gas / lighted splint (1) gas burns / (squeaky) pop (if air is present) (1) 	reject glowing splint second mark conditional on first	(2)

Question Number	Answer	Acceptable answers	Mark
1(b)	sea water / salt / brine / sodium chloride (solution)		(1)

Question Number	Answer	Acceptable answers	Mark
1(c)(i)	D salt and water only		(1)

Question Number	Answer	Acceptable answers	Mark
1(c)(ii)	A description to include two from <ul style="list-style-type: none"> (green) solid {disappears / dissolves} (1) effervesces / bubbles (of colourless gas) given off (1) blue (solution) forms (1) 	ignore references to names of products fizz goes blue ignore incorrect colours of solution ignore temperature rise	(2)

Question Number	Answer	Acceptable answers	Mark
1(d)(i)	<p>An explanation linking</p> <ul style="list-style-type: none"> • tablet C (1) • because it neutralises greatest volume of acid (1) 	ignore references to rate	(2)

Question Number	Answer	Acceptable answers	Mark
1(d)(ii)	<ul style="list-style-type: none"> • {crushed tablets / chewed tablets} have a shorter reaction time (than whole tablets) (1) 	ignore crushed because times are quicker / larger surface area / do not need to break down	(1)

Question Number	Answer	Acceptable answers	Mark
2(a)	magnesium nitrate water carbon dioxide all three correct (2) magnesium nitrate + one other correct (1)	allow correct formulae	(2)

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

Question Number	Answer	Acceptable answers	Mark
2(b)(ii)	$\text{ZnO} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2\text{O}$ (3) LHS (1) RHS (1) balancing of correct formula (1)	correct multiples ignore state symbols	(3)

Question Number		Indicative Content	Mark
QWC	*2(c)	<p>A description including some of the following points</p> <p>experiment set up</p> <ul style="list-style-type: none"> • hydrochloric acid in container • carbon rods in acid • attach rods to electrical supply • d.c. supply(or reference to positive and negative) • test tubes to collect gases <p>test hydrogen</p> <ul style="list-style-type: none"> • lighted splint • squeaky pop (with air)/burns <p>test chlorine</p> <ul style="list-style-type: none"> • (damp blue) litmus paper • (turns red then) bleaches/white 	(6)
Level		No rewardable content	
1	1 – 2	<ul style="list-style-type: none"> • a limited description e.g. simple description/diagram of electrolysis set up OR description of test for one of the gases. • the answer communicates ideas using simple language and uses limited scientific terminology • spelling, punctuation and grammar are used with limited accuracy 	
2	3 – 4	<ul style="list-style-type: none"> • a simple description e.g. a full description of electrolysis OR test for both gases OR simple description of electrolysis and the test for one of the gases. • the answer communicates ideas showing some evidence of clarity and organisation and uses scientific terminology appropriately • spelling, punctuation and grammar are used with some accuracy 	
3	5 – 6	<ul style="list-style-type: none"> • a detailed description e.g. description of electrolysis and test for both gases OR a full description of electrolysis and of one gas test. • The answer communicates ideas clearly and coherently uses a range of scientific terminology accurately • spelling, punctuation and grammar are used with few errors 	

Question Number	Answer	Acceptable answers	Mark
3(a)	D a salt and water only		(1)

Question Number	Answer	Acceptable answers	Mark
3(b)(i)	<p>A description including two of</p> <ul style="list-style-type: none"> • (acid) colourless (liquid/solution) (1) • (carbonate) green (solid) (1) • disappears (1) • effervesces/fizzes/bubbles (1) • blue (solution) (forms) (1) 	<p>Ignore clear</p> <p>dissolves</p> <p>Ignore gas/carbon dioxide given off</p>	(2)

Question Number	Answer	Acceptable answers	Mark
3(b)(ii)	$\text{CuCO}_3 + 2\text{HNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + \text{H}_2\text{O} + \text{CO}_2$ <p>reactants (1) products (1) balancing of correct formulae (1)</p>	<p>multiples</p>	(3)

Question Number	Answer	Acceptable answers	Mark
3(c)(i)	<p>An explanation linking</p> <ul style="list-style-type: none"> • decomposition (of compound/substance) (1) M1 • (by) (direct electric) current (1) M2 	<p>splitting up/breaking down/breaking up (of compound/substance)</p> <p>Reject splitting of atoms/elements for M1</p> <p>Ignore separating</p> <p>(by) electricity/electrical energy/direct current</p> <p>Reject alternating current/ac</p>	(2)

Question Number	Answer	Acceptable answers	Mark
3(c)(ii)	A description linking <ul style="list-style-type: none"> • glowing splint (1) M1 • relights (1) M2 	smouldering splint Reject unlit (splint) Ignore blown out (splint) M2 dependent on M1 but lighted splint burns brighter = 2	(2)