Unit Code: J248/03
Qual Name: GCSE Chemistry A(Gateway Science)
Qual Title: C1-C3 and C7 Higher

Question Set	Q. No	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments	Maths	Practical Assessment
1	1	1	AO1	1.2c	1.2 Atomic Structure			Y	
1	2	1	AO1	1.2a	1.2 Atomic Structure				
1	3	1	AO1	1.1a	1.1 The particle model				
1	4	1	AO1	1.2c	1.2 Atomic Structure				
2	1	1	AO1	2.2c	2.2 Bonding				
2	2	1	AO1	2.3f	2.3 Properties of materials				
2	3	1	AO1	2.2i	2.2 Bonding				
2	4	1	AO1	2.1i	2.1 Purity and separating mixtures				
2	5	1	AO1	2.3c	2.3 Properties of materials				
2	6	1	AO2	2.2c	2.2 Bonding				
2	7	1	AO2	2.3e	2.3 Properties of materials			Y	
2	8	1	AO1	2.1h	2.1 Purity and separating mixtures				Y
2	9	1	AO2	2.1c	2.1 Purity and separating mixtures			Y	
2	10	1	AO2	2.2d	2.2 Bonding				Y
2	11	1	AO1	2.3h	2.3 Properties of materials				
2	12	1	AO1	2.3d	2.3 Properties of materials				
2	13	1	AO1	2.2e	2.2 Bonding				
2	14	1	AO1	2.1a	2.1 Purity and separating mixtures				
2	15	1	AO1	2.1h	2.1 Purity and separating mixtures				Y
2	16	1	AO1	2.3g	2.3 Properties of materials				
2	17	1	AO2	2.2d	2.2 Bonding				
2	18	1	AO2	2.1h	2.1 Purity and separating mixtures				Y
2	19	1	AO2	2.1i	2.1 Purity and separating mixtures		*Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.*		Y
2	20	1	AO2	2.1d	2.1 Purity and separating mixtures			Y	
3	1	1	AO2	3.3b	3.3 Types of chemical reactions				

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3	2	1	AO2	3.1g	3.1 Introducing chemical reactions			Y	
3	3	1	AO2	3.1l	3.1 Introducing chemical reactions			Y	
3	4	1	AO1	3.4d	3.4 Electrolysis				
3	5	1	AO1	3.3f	3.3 Types of chemical reactions				Y
3	6	1	AO1	3.3e	3.3 Types of chemical reactions				
3	7	1	AO2	3.3a	3.3 Types of chemical reactions				
3	8	1	AO1	3.2c	3.2 Energetics				
3	9	1	AO1	3.3g	3.3 Types of chemical reactions				
3	10	1	AO2	3.1j	3.1 Introducing chemical reactions				Y
3	11	1	AO1	3.3b	3.3 Types of chemical reactions				
3	12	1	AO1	3.3f	3.3 Types of chemical reactions				Y
3	13	1	AO2	3.4b	3.4 Electrolysis				
3	14	1	AO2	3.1c	3.1 Introducing chemical reactions				
3	15	1	AO1	3.3e	3.3 Types of chemical reactions				
3	16	1	AO1	3.3j	3.3 Types of chemical reactions				
3	17	1	AO1	3.3g	3.3 Types of chemical reactions				
3	18	1	AO1	3.1j	3.1 Introducing chemical reactions				Y
4	1ai	2	AO1	2.2d	2.2 Bonding	This question has a focus on metals and alloys; their structure & bonding and their properties.			
4	1aii	1	AO1	2.3f	2.3 Properties of materials	This question has a focus on metals and alloys; their structure & bonding and their properties.			
4	1aiii	2	AO1	2.3f	2.3 Properties of materials	This question has a focus on metals and alloys; their structure & bonding and their properties.			
4	1b	2	AO3	2.1e	2.1 Purity and separating mixtures	This question has a focus on metals and alloys; their structure & bonding and their properties.			
4	1ci	1	AO3	2.1e	2.1 Purity and separating mixtures	This question has a focus on metals and alloys; their structure & bonding and their properties.		Y	
4	1cii	1	AO3	2.1e	2.1 Purity and separating mixtures	This question has a focus on metals and alloys; their structure & bonding and their properties.			
5	1a	1	AO2	2.3j	2.3 Properties of materials	This question has a focus on nanoparticles.			
5	1b	4	AO1 & AO2	2.3h	2.3 Properties of materials	This question has a focus on nanoparticles.		Y	

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5	1ci	2	AO2	2.3g	2.3 Properties of materials	This question has a focus on nanoparticles.			
5	1cii	2	AO2	2.3g	2.3 Properties of materials	This question has a focus on nanoparticles.		Y	
6	1ai	2	AO3	2.1f	2.1 Purity and separating mixtures	This question has a focus on separation of mixtures, the particle model and energetics. It includes a bond enthalpy calculation.			
6	1aii	1	AO1	1.1a	1.1 The particle model	This question has a focus on separation of mixtures, the particle model and energetics. It includes a bond enthalpy calculation.			
6	1aiii	1	AO1	1.1a	1.1 The particle model	This question has a focus on separation of mixtures, the particle model and energetics. It includes a bond enthalpy calculation.			
6	1aiv	2	AO1	2.1f	2.1 Purity and separating mixtures	This question has a focus on separation of mixtures, the particle model and energetics. It includes a bond enthalpy calculation.			Y
6	1b	1	AO1	3.2a & 3.2d	3.2 Energetics	This question has a focus on separation of mixtures, the particle model and energetics. It includes a bond enthalpy calculation.			
6	1ci	2	AO2	3.2d	3.2 Energetics	This question has a focus on separation of mixtures, the particle model and energetics. It includes a bond enthalpy calculation.		Y	Y
6	1cii	2	AO2	3.2d	3.2 Energetics	This question has a focus on separation of mixtures, the particle model and energetics. It includes a bond enthalpy calculation.		Y	Y
6	1ciii	1	AO2	3.2d	3.2 Energetics	This question has a focus on separation of mixtures, the particle model and energetics. It includes a bond enthalpy calculation.		Y	
7	1ai	2	AO1 & AO3	2.2a	2.2 Bonding	This question has a focus on properties of elements. It also considers isotopes and includes balanced ionic and half equations.			
7	1aii	1	AO1	2.2a	2.2 Bonding	This question has a focus on properties of elements. It also considers isotopes and includes balanced ionic and half equations.			

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7	1b	3	AO3	2.2a	2.2 Bonding	This question has a focus on properties of elements. It also considers isotopes and includes balanced ionic and half equations.			Y
7	1ci	2	AO1	1.2e	1.2 Atomic Structure	This question has a focus on properties of elements. It also considers isotopes and includes balanced ionic and half equations.			
7	1cii	1	AO2	3.1b	3.1 Introducing chemical reactions	This question has a focus on properties of elements. It also considers isotopes and includes balanced ionic and half equations.			
7	1ciii	2	AO2	3.1e & 3.1f	3.1 Introducing chemical reactions	This question has a focus on properties of elements. It also considers isotopes and includes balanced ionic and half equations.			
8	1ai	3	AO1 & AO2	3.3k	3.3 Types of chemical reactions	This question has a focus on acids, alkalis and neutralisation.		Y	
8	1aii	1	AO2	3.3i	3.3 Types of chemical reactions	This question has a focus on acids, alkalis and neutralisation.		Y	Y
8	1aiii	1	AO3	3.3h	3.3 Types of chemical reactions	This question has a focus on acids, alkalis and neutralisation.			Y
8	1aiv	1	AO1	3.3e	3.3 Types of chemical reactions	This question has a focus on acids, alkalis and neutralisation.			
8	1b	2	AO1	3.3g	3.3 Types of chemical reactions	This question has a focus on acids, alkalis and neutralisation.			
8	1ci	2	AO2	3.3j	3.3 Types of chemical reactions	This question has a focus on acids, alkalis and neutralisation.		Y	
8	1cii	1	AO1	3.1c	3.1 Introducing chemical reactions	This question has a focus on acids, alkalis and neutralisation.			
8	1ciii	2	AO3	2.1f	2.1 Purity and separating mixtures	This question has a focus on acids, alkalis and neutralisation.			Y
9	1ai	2	AO3	2.2g	2.2 Bonding	This question has a focus on ionic bonding and electrolysis of ionic compounds.			
9	1aii	2	AO2	2.2f	2.2 Bonding	This question has a focus on ionic bonding and electrolysis of ionic compounds.			
9	1b	6	AO1, AO2 & AO3	3.4b & 3.4c	3.4 Electrolysis	This question has a focus on ionic bonding and electrolysis of ionic compounds.	LoR Question		Y
10	1ai	4	AO1 & AO2	3.2b	3.2 Energetics	This question has a focus on chemical reactions, including a calculation from a balanced equation.			
10	1aii	1	AO1	3.3b	3.3 Types of chemical reactions	This question has a focus on chemical reactions, including a calculation from a balanced equation.			
10	1bi	2	AO1 & AO2	3.1b	3.1 Introducing chemical reactions	This question has a focus on chemical reactions, including a calculation from a balanced equation.		Y	

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10	1bii	4	AO1 & AO2	3.1h	3.1 Introducing chemical reactions	This question has a focus on chemical reactions, including a calculation from a balanced equation.		Y	
11	1ai	1	AO1	1.1a	1.1 The particle model	This question has a focus on the element magnesium; its properties and its reactions.			
11	1aii	3	AO1	1.1a	1.1 The particle model	This question has a focus on the element magnesium; its properties and its reactions.			
11	1aiii	2	AO1	1.1a	1.1 The particle model	This question has a focus on the element magnesium; its properties and its reactions.			
11	1b	2	AO2	1.1b	1.1 The particle model	This question has a focus on the element magnesium; its properties and its reactions.			
11	1c	1	AO2	3.1c	3.1 Introducing chemical reactions	This question has a focus on the element magnesium; its properties and its reactions.			Y
12	1a	4	AO3	3.3d	3.3 Types of chemical reactions	This question has a focus on neutralisation and also tests practical skills.			Y
12	1b	1	AO2	3.3d & 3.1c	3.3 Types of chemical reactions	This question has a focus on neutralisation and also tests practical skills.			Y
12	1c	3	AO2	3.3d & 3.3f	3.3 Types of chemical reactions	This question has a focus on neutralisation and also tests practical skills.			Y
12	1d	1	AO2	3.3d	3.3 Types of chemical reactions	This question has a focus on neutralisation and also tests practical skills.			Y
13	1a	2	AO3	2.3e	2.3 Properties of materials	This question has a focus on safety and improvement of a practical method.			Y
13	1b	2	AO2	2.3e	2.3 Properties of materials	This question has a focus on predicting state of substances from given data.		Y	
13	1c	2	AO2	3.1c	3.1 Introducing chemical reactions	This question has a focus on writing a balance symbol equation.		Y	
14	1a	1	AO1	1.2e	1.2 Atomic Structure	This question has a focus on atomic structure and ionic bonding.			
14	1b	1	AO1	1.2e	1.2 Atomic Structure	This question has a focus on atomic structure and ionic bonding.			
14	1c	4	AO1 & AO2	1.2e	1.2 Atomic Structure	This question has a focus on atomic structure and ionic bonding.			
14	1di	3	AO2	2.2f	2.2 Bonding	This question has a focus on atomic structure and ionic bonding.		Y	
14	1dii	1	AO2	2.2f	2.2 Bonding	This question has a focus on atomic structure and ionic bonding.			

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15	1a	4	AO3	2.1f	2.1 Purity and separating mixtures	This question has a focus on separating mixtures and distinguishing pure and impure substances.			Y
15	1b	3	AO3	2.1b	2.1 Purity and separating mixtures	This question has a focus on separating mixtures and distinguishing pure and impure substances.		Y	Y
16	1a	3	AO1 & AO2	3.2b	3.2 Energetics	This question has a focus on energetics.			
16	1b	3	AO2 & AO3	3.2d	3.2 Energetics	This question has a focus on energetics.		Y	
17	1	4	AO2	3.1h & 3.1k	3.1 Introducing chemical reactions	This question has a focus on determining the limiting reactant in a reaction.		Y	
18	1	3	AO1	2.2i	2.2 Bonding	This question has a focus on the Periodic Table.			
19	1a	2	AO1 & AO2	3.4a & 3.4c	3.4 Electrolysis	This question has a focus on electrolysis.			Y
19	1b	1	AO1	3.4e	3.4 Electrolysis	This question has a focus on electrolysis.			Y
19	1c	2	AO2	3.4d & 3.1b	3.4 Electrolysis	This question has a focus on electrolysis.		Y	Y
19	1d	2	AO1	3.4c	3.4 Electrolysis	This question has a focus on electrolysis.			Y
20	1	6	AO2 & AO3	2.2d & 2.3f	2.2 Bonding & 2.3 Properties of materials	This question has a focus on relating properties of substances to their bonding.	LoR Question		
21	1a	1	AO1	3.1g	3.1 Introducing chemical reactions	This question has a focus on the Avogadro constant and tests mathematical skills.			
21	1b	3	AO2	3.1g	3.1 Introducing chemical reactions	This question has a focus on the Avogadro constant and tests mathematical skills.		Y	
21	1c	4	AO2	3.1l	3.1 Introducing chemical reactions	This question has a focus on the Avogadro constant and tests mathematical skills.		Y	
22	1a	4	AO2 & AO3	1.2e	1.2 Atomic Structure	This question has a focus on atomic structure and the Periodic Table.			
22	1b	2	AO2	2.2b	2.2 Bonding	This question has a focus on atomic structure and the Periodic Table.			
22	1c	4	AO2	2.2b	2.2 Bonding	This question has a focus on atomic structure and the Periodic Table.			
22	1d	2	AO1	1.2d	1.2 Atomic Structure	This question has a focus on atomic structure and the Periodic Table.			
22	1e	1	AO1	1.2a	1.2 Atomic Structure	This question has a focus on atomic structure and the Periodic Table.			
23	1a	3	AO1	2.3c	2.3 Properties of materials	This question has a focus on compounds of carbon.			
23	1b	1	AO1	2.3b	2.3 Properties of materials	This question has a focus on compounds of carbon.			

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23	1c	2	AO2	2.3e	2.3 Properties of materials	This question has a focus on compounds of carbon.			
24	1a	4	AO1 & AO3	3.2b & 3.2c	3.2 Energetics	This question has a focus on energetics.			
24	1bi	2	AO1	3.2d	3.2 Energetics	This question has a focus on energetics.			
24	1bii	3	AO2	3.2d	3.2 Energetics	This question has a focus on energetics.		Y	
24	1c	5	AO2	3.2d	3.2 Energetics	This question has a focus on energetics.		Y	
25	1ai	3	AO2	3.1h	3.1 Introducing chemical reactions	The question has a focus on the mole and calculations from equations.		Y	
25	1aii	2	AO2 & AO3	3.1k	3.1 Introducing chemical reactions	The question has a focus on the mole and calculations from equations.			
25	1b	3	AO1 & AO2	3.1l	3.1 Introducing chemical reactions	The question has a focus on the mole and calculations from equations.		Y	
26	1a	6	AO1, AO2 & AO3	2.1j	2.1 Purity and separating mixtures	This question has a focus on separating mixtures.	LoR Question		Y
26	1b	2	AO1 & AO2	2.1b	2.1 Purity and separating mixtures	This question has a focus on separating mixtures.			Y
27	1a	2	AO2	3.1a & 3.1c	3.1 Introducing chemical reactions	The question has a focus on neutralisation and tests practical skills.			
27	1b	4	AO3	3.3d	3.3 Types of chemical reactions	The question has a focus on neutralisation and tests practical skills.			Y
27	1c	2	AO1	3.3d	3.3 Types of chemical reactions	The question has a focus on neutralisation and tests practical skills.			Y
28	1a	1	AO2	3.3a	3.3 Types of chemical reactions	The question tests understanding of redox.			
28	1b	2	AO2	3.1g	3.1 Introducing chemical reactions	The question tests application of the Avogadro constant.		Y	
29	1a	4	AO3	3.4c	3.4 Electrolysis	This question has a focus on electrolysis.			Y
29	1b	2	AO2	3.4d & 3.4e	3.4 Electrolysis	This question has a focus on electrolysis.			Y
30	1a	2	AO2	2.3d & 2.3f	2.3 Properties of materials	This question has a focus on structure & bonding and properties of materials.			
30	1b	2	AO2	2.3d & 2.3f	2.3 Properties of materials	This question has a focus on structure & bonding and properties of materials.			
30	1c	3	AO2	2.2f	2.2 Bonding	This question has a focus on structure & bonding and properties of materials.			
31	1	2	AO2	3.1b & 3.3f	3.1 Introducing chemical reactions & 3.3 Types of chemical reactions	This question tests writing an equation for a metal/acid reaction.			