Unit Code: J248/04
Qual Name: GCSE Chemistry A(Gateway Science)
Qual Title: C4-C6 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	4.2f	4.2 Identifying the products of chemical reactions				
1	2	1	AO1	4.2b	4.2 Identifying the products of chemical reactions				Y
1	3	1	AO1	4.2g	4.2 Identifying the products of chemical reactions				
1	4	1	AO1	4.2g	4.2 Identifying the products of chemical reactions			Y	
1	5	1	AO1	4.1c	4.1 Predicting chemical reactions				
1	6	1	AO2	4.1d	4.1 Predicting chemical reactions				
1	7	1	AO1	4.1b	4.1 Predicting chemical reactions				
1	8	1	AO1	4.2f	4.2 Identifying the products of chemical reactions				
1	9	1	AO1	4.2d	4.2 Identifying the products of chemical reactions				
1	10	1	AO1	4.1a	4.1 Predicting chemical reactions				
1	11	1	AO1	4.2b	4.2 Identifying the products of chemical reactions				
1	12	1	AO2	4.1e	4.1 Predicting chemical reactions				
2	1	1	AO1	5.1i	5.1 Monitoring chemical reactions				
2	2	1	AO1	5.3b	5.3 Equilibria				
2	3	1	AO1	5.2f	5.2 Controlling reactions				Y
2	4	1	AO1	5.1f	5.1 Monitoring chemical reactions				
2	5	1	AO1	5.3b	5.3 Equilibria				
2	6	1	AO2	5.3c	5.3 Equilibria				
2	7	1	AO2	5.1a	5.1 Monitoring chemical reactions			Y	
2	8	1	AO2	5.1g	5.1 Monitoring chemical reactions				
2	9	1	AO2	5.1j	5.1 Monitoring chemical reactions			Y	
2	10	1	AO2	5.1e	5.1 Monitoring chemical reactions			Y	
2	11	1	AO2	5.2b	5.2 Controlling reactions			Y	
2	12	1	AO2	5.2e	5.2 Controlling reactions				Y
2	13	1	AO2	5.1a	5.1 Monitoring chemical reactions			Y	Y

Question Set	Q. No	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments	Maths	Practical Assessment
3	1	1	AO2	6.3a	6.3 Interpreting and interacting with earth systems			Y	
3	2	1	AO1	6.3c	6.3 Interpreting and interacting with earth systems				
3	3	1	AO1	6.2b	6.2 Organic chemistry				
3	4	1	AO1	6.2q	6.2 Organic chemistry				Y
3	5	1	AO1	6.2e	6.2 Organic chemistry				
3	6	1	AO1	6.1c	6.1 Improving processes and products				
3	7	1	AO1	6.3c	6.3 Interpreting and interacting with earth systems				
3	8	1	AO1	6.2e	6.2 Organic chemistry				
3	10	1	AO1	6.3b	6.3 Interpreting and interacting with earth systems				
3	11	1	AO2	6.1s	6.1 Improving processes and products				
3	12	1	AO1	6.1b	6.1 Improving processes and products				
3	13	1	AO1	6.2q	6.2 Organic chemistry				
3	14	1	AO1	6.1c	6.1 Improving processes and products				
3	15	1	AO2	6.2o	6.2 Organic chemistry		*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	
3	16	1	AO2	6.2a	6.2 Organic chemistry				
3	17	1	AO1	6.3a	6.3 Interpreting and interacting with earth systems				
3	18	1	AO1	6.2c	6.2 Organic chemistry				
3	19	1	AO2	6.2c	6.2 Organic chemistry				
3	20	1	AO1	6.2e	6.2 Organic chemistry				
4	1a	4	AO3	6.1s	6.1 Improving processes and products	This question has a focus on materials, with links to nanoparticles and catalysis.			
4	1b	1	AO1	6.2g	6.2 Organic chemistry	This question has a focus on materials, with links to nanoparticles and catalysis.			
4	1ci	3	AO2	5.2e, 2.3g	5.2 Controlling reactions	This question has a focus on materials, with links to nanoparticles and catalysis.		Y	
4	1cii	3	AO1 & AO2	5.2f	5.2 Controlling reactions	This question has a focus on materials, with links to nanoparticles and catalysis.			

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5	1a	3	AO3	6.3d	6.3 Interpreting and interacting with earth systems	This question has a focus on global warming and climate change.		Y	
5	1b	2	AO3	6.3d	6.3 Interpreting and interacting with earth systems	This question has a focus on global warming and climate change.			
5	1ci	1	AO1	6.3e	6.3 Interpreting and interacting with earth systems	This question has a focus on global warming and climate change.			
5	1cii	1	AO1	6.3e	6.3 Interpreting and interacting with earth systems	This question has a focus on global warming and climate change.			
6	1a	2	AO2	6.1g, 3.1c	6.1 Improving processes and products	This question has a focus on the Haber process and the industrial and laboratory manufacture of fertilisers.			
6	1bi	1	AO1	5.2c	5.2 Controlling reactions	This question has a focus on the Haber process and the industrial and laboratory manufacture of fertilisers.			
6	1bii	2	AO2	5.3c	5.3 Equilibria	This question has a focus on the Haber process and the industrial and laboratory manufacture of fertilisers.			
6	1c	2	AO2	5.3c	5.3 Equilibria	This question has a focus on the Haber process and the industrial and laboratory manufacture of fertilisers.			
6	1di	2	AO3	6.1h	6.1 Improving processes and products	This question has a focus on the Haber process and the industrial and laboratory manufacture of fertilisers.			Y
6	1dii	1	AO1	6.1h	6.1 Improving processes and products	This question has a focus on the Haber process and the industrial and laboratory manufacture of fertilisers.			
7	1a	2	AO2	4.1e, 3.1b	4.1 Predicting chemical reactions	This question has a focus on rates of reaction and tests mathematical skills.			Y
7	1b	6	AO2 & AO3	5.2d	5.2 Controlling reactions	This question has a focus on rates of reaction and tests mathematical skills.	LoR Question	Y	Y

Question Set	Q. No	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments	Maths	Practical Assessment
7	1c	3	AO2	5.2c, 5.2d	5.2 Controlling reactions	This question has a focus on rates of reaction and tests mathematical skills.		Y	Y
7	1d	3	AO1 & AO2	5.2c, 5.2d	5.2 Controlling reactions	This question has a focus on rates of reaction and tests mathematical skills.		Y	Y
8	1a	2	AO1	4.1a	4.1 Predicting chemical reactions	This question has a focus on the properties of elements in Groups 1, 7 and 0.			Y
8	1b	2	AO1	4.1e, 2.2h	4.1 Predicting chemical reactions	This question has a focus on the properties of elements in Groups 1, 7 and 0.			
8	1c	3	AO1	4.1a	4.1 Predicting chemical reactions	This question has a focus on the properties of elements in Groups 1, 7 and 0.			
8	1d	2	AO1	4.1b, 2.3f	4.1 Predicting chemical reactions	This question has a focus on the properties of elements in Groups 1, 7 and 0.			
8	1e	2	AO1	4.1b, 2.2h	4.1 Predicting chemical reactions	This question has a focus on the properties of elements in Groups 1, 7 and 0.			
9	1a	2	AO3	6.2c	6.2 Organic chemistry	This question has a focus on compounds of carbon.			Y
9	1b	4	AO1, AO2 & AO3	6.2e	6.2 Organic chemistry	This question has a focus on compounds of carbon.			
9	1ci	1	AO1	6.2h	6.2 Organic chemistry	This question has a focus on compounds of carbon.			
9	1cii	1	AO1	6.2h	6.2 Organic chemistry	This question has a focus on compounds of carbon.			
9	1di	1	AO1	6.2a	6.2 Organic chemistry	This question has a focus on compounds of carbon.			
9	1dii	2	AO2	6.2b	6.2 Organic chemistry	This question has a focus on compounds of carbon.			
10	1a	2	AO2	5.1e	5.1 Monitoring chemical reactions	This question has a focus on chemical calculations.		Y	Y
10	1bi	3	AO2	5.1c	5.1 Monitoring chemical reactions	This question has a focus on chemical calculations.		Y	Y
10	1bii	2	AO2	5.1c	5.1 Monitoring chemical reactions	This question has a focus on chemical calculations.		Y	Y
10	1c	4	AO2	5.1c	5.1 Monitoring chemical reactions	This question has a focus on chemical calculations.		Y	Y

Question Set	Q. No	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required	Additional Notes/Comments	Maths	Practical Assessment
11	1a	3	AO3	6.1l	6.1 Improving processes and products	This question has a focus on life-cycle assessments & fractional distillation; it tests analytical skills.			
11	1b	3	AO1	6.2k	6.2 Organic chemistry	This question has a focus on life-cycle assessments & fractional distillation; it tests analytical skills.			
11	1c	2	AO1 & AO3	6.2k	6.2 Organic chemistry	This question has a focus on life-cycle assessments & fractional distillation; it tests analytical skills.			
11	1d	3	AO3	6.2q	6.2 Organic chemistry	This question has a focus on life-cycle assessments & fractional distillation; it tests analytical skills.			
12	1a	3	AO2	6.2a	6.2 Organic chemistry	This question has a focus on compounds of carbon.		Y	
12	1bi	1	AO2	6.2a	6.2 Organic chemistry	This question has a focus on compounds of carbon.		Y	
12	1bii	1	AO2	6.2b	6.2 Organic chemistry	This question has a focus on compounds of carbon.		Y	
12	1c	1	AO1	6.2a	6.2 Organic chemistry	This question has a focus on compounds of carbon.			
12	1d	1	AO2	6.2c	6.2 Organic chemistry	This question has a focus on compounds of carbon.			
13	1a	2	AO2	5.2c, 3.1b	5.2 Controlling reactions	This question has a focus on rates of reaction.			Y
13	1bi	1	AO3	5.2b	5.2 Controlling reactions	This question has a focus on rates of reaction.		Y	Y
13	1bii	3	AO1 & AO2	5.2b	5.2 Controlling reactions	This question has a focus on rates of reaction.		Y	Y
13	1c	4	AO2	5.2d	5.2 Controlling reactions	This question has a focus on rates of reaction.			Y
13	1di	1	AO1	5.2h, 3.2b	5.2 Controlling reactions	This question has a focus on rates of reaction.			
13	1dii	1	AO1	5.2h, 3.2b	5.2 Controlling reactions	This question has a focus on rates of reaction.			
14	1	6	AO2 & AO3	5.3a, 5.3c, 6.1f	5.3 Equilibria & 6.1 Improving processes and products	This question has a focus on how the conditions chosen for an industrial process relate to equilibrium position.	LoR Question		
15	1a	4	AO3	5.1b	5.1 Monitoring chemical reactions	This question has a focus on the technique of titration and test mathematical skills.			Y
15	1b	1	AO3	5.1b	5.1 Monitoring chemical reactions	This question has a focus on the technique of titration and test mathematical skills.			Y

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15	1ci	1	AO2	5.1b	5.1 Monitoring chemical reactions	This question has a focus on the technique of titration and test mathematical skills.		Y	Y
15	1cii	1	AO2	5.1b	5.1 Monitoring chemical reactions	This question has a focus on the technique of titration and test mathematical skills.		Y	Y
15	1di	1	AO3	5.1b	5.1 Monitoring chemical reactions	This question has a focus on the technique of titration and test mathematical skills.			Y
15	1dii	4	AO2	5.1c	5.1 Monitoring chemical reactions	This question has a focus on the technique of titration and test mathematical skills.		Y	Y
16	1ai	1	AO2	5.1a	5.1 Monitoring chemical reactions	This question has a focus on chemical calculations; concentration, moles, has volume & atom economy and tests mathematical skills.		Y	Y
16	1aii	1	AO2	5.1a	5.1 Monitoring chemical reactions	This question has a focus on chemical calculations; concentration, moles, has volume & atom economy and tests mathematical skills.		Y	Y
16	1bi	2	AO1 & AO2	5.1d	5.1 Monitoring chemical reactions	This question has a focus on chemical calculations; concentration, moles, has volume & atom economy and tests mathematical skills.		Y	Y
16	1bii	2	AO1 & AO2	5.1e	5.1 Monitoring chemical reactions	This question has a focus on chemical calculations; concentration, moles, has volume & atom economy and tests mathematical skills.		Y	Y
16	1ci	3	AO1 & AO2	5.1j	5.1 Monitoring chemical reactions	This question has a focus on chemical calculations; concentration, moles, has volume & atom economy and tests mathematical skills.		Y	Y
16	1cii	3	AO1	5.1k	5.1 Monitoring chemical reactions	This question has a focus on chemical calculations; concentration, moles, has volume & atom economy and tests mathematical skills.			
17	1a	1	AO1	6.2d	6.2 Organic chemistry	This question has a focus on polymerisation.			

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17	1b	1	AO1	6.2a	6.2 Organic chemistry	This question has a focus on polymerisation.			
17	1c	2	AO2	6.2d	6.2 Organic chemistry	This question has a focus on polymerisation.			
17	1d	1	AO1	6.2h	6.2 Organic chemistry	This question has a focus on polymerisation.			
17	1ei	1	AO1	6.2e	6.2 Organic chemistry	This question has a focus on polymerisation.			
17	1eii	2	AO1	6.2e	6.2 Organic chemistry	This question has a focus on polymerisation.			
17	1eiii	1	AO1	6.2e	6.2 Organic chemistry	This question has a focus on polymerisation.			
17	1fi	3	AO1	6.2f	6.2 Organic chemistry	This question has a focus on polymerisation.			Y
17	1fii	3	AO1 & AO2	6.2f	6.2 Organic chemistry	This question has a focus on polymerisation.			Y
18	1a	3	AO3	5.2a	5.2 Controlling reactions	This question has a focus on rates of reaction.			Y
18	1bi	1	AO2	5.2a, 5.2g	5.2 Controlling reactions	This question has a focus on rates of reaction.			Y
18	1bii	1	AO2	5.2a	5.2 Controlling reactions	This question has a focus on rates of reaction.			Y
18	1biii	2	AO3	5.2f, 5.2g	5.2 Controlling reactions	This question has a focus on rates of reaction.			Y
18	1biv	1	AO3	5.2a, 5.2f, 5.2g	5.2 Controlling reactions	This question has a focus on rates of reaction.			Y
18	1bv	2	AO2	5.2e, 2.3h	5.2 Controlling reactions	This question has a focus on rates of reaction.			Y
19	1ai	2	AO2	4.1b	4.1 Predicting chemical reactions	This question has a focus on the properties and reaction of Group 7 elements.			
19	1aii	1	AO2	4.1a	4.1 Predicting chemical reactions	This question has a focus on the properties and reaction of Group 7 elements.			
19	1aiii	1	AO2	4.1b	4.1 Predicting chemical reactions	This question has a focus on the properties and reaction of Group 7 elements.			
19	1bi	1	AO1	4.1b, 2.2h	4.1 Predicting chemical reactions	This question has a focus on the properties and reaction of Group 7 elements.			
19	1bii	2	AO2	4.1b, 3.1b	4.1 Predicting chemical reactions	This question has a focus on the properties and reaction of Group 7 elements.		Y	

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19	1biii	1	AO2	4.1b, 3.1a	4.1 Predicting chemical reactions	This question has a focus on the properties and reaction of Group 7 elements.			
20	1	4	AO1	4.2b	4.2 Identifying the products of chemical reactions	This question has a focus on tests to identify aqueous anions and aqueous cations.			Y
21	1a	2	AO3	5.1b	5.1 Monitoring chemical reactions	This question is about titrations.			
21	1b	2	AO2	5.1c	5.1 Monitoring chemical reactions	This question is about titrations.		Y	
21	1c	2	AO2	5.1c, 3.1h	5.1 Monitoring chemical reactions	This question is about titrations.		Y	
22	1a	2	AO1	6.2k, 2.1f	6.2 Organic chemistry	This question has a focus on compounds of carbon and fractional distillation.			
22	1b	1	AO2	6.2a	6.2 Organic chemistry	This question has a focus on compounds of carbon and fractional distillation.			
23	1a	2	AO1	5.3b	5.3 Equilibria	This question has a focus on chemical equilibria and also involves a percentage yield calculation.			
23	1b	2	AO2	5.1h	5.1 Monitoring chemical reactions	This question has a focus on chemical equilibria and also involves a percentage yield calculation.		Y	
23	1c	6	AO1 & AO3	5.3c	5.3 Equilibria	This question has a focus on chemical equilibria and also involves a percentage yield calculation.	LoR Question		Y
24	1a	2	AO1	6.1g	6.1 Improving processes and products	This question has a focus on manufacture of salts used as fertilisers, rates of reaction and tests mathematical skills.			
24	1bi	2	AO1	5.2c, 5.2d	5.2 Controlling reactions	This question has a focus on manufacture of salts used as fertilisers, rates of reaction and tests mathematical skills.			
24	1bii	2	AO1	5.2c, 5.2d	5.2 Controlling reactions	This question has a focus on manufacture of salts used as fertilisers, rates of reaction and tests mathematical skills.			

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24	1ci	4	AO1	6.1h	6.1 Improving processes and products	This question has a focus on manufacture of salts used as fertilisers, rates of reaction and tests mathematical skills.			
24	1cii	2	AO2	5.1g, 3.1l	5.1 Monitoring chemical reactions	This question has a focus on manufacture of salts used as fertilisers, rates of reaction and tests mathematical skills.		Y	
25	1a	2	AO2	6.3d	6.3 Interpreting and interacting with earth systems	This question has a focus on the greenhouse effect and climate change.			
25	1b	2	AO3	6.3d, 6.3e	6.3 Interpreting and interacting with earth systems	This question has a focus on the greenhouse effect and climate change.			
26	1a	1	AO3	6.1p	6.1 Improving processes and products	This question has a focus on the corrosion of metals .			Y
26	1b	3	AO3	6.1p	6.1 Improving processes and products	This question has a focus on the corrosion of metals .			Y
27	1a	2	AO1	6.1a, 6.1b	6.1 Improving processes and products	This question has a focus on the extraction of metals and electrolysis.			
27	1bi	1	AO2	6.1b, 3.1b, 3.4d	6.1 Improving processes and products	This question has a focus on the extraction of metals and electrolysis.			
27	1bii	1	AO1	6.1b, 3.4d	6.1 Improving processes and products	This question has a focus on the extraction of metals and electrolysis.			
27	1c	2	AO2	6.1b	6.1 Improving processes and products	This question has a focus on the extraction of metals and electrolysis.			Y
28	1a	2	AO2	6.1p, 3.1b	6.1 Improving processes and products	This question has a focus on the rusting of iron.			
28	1b	6	AO1 & AO2	6.1p, 3.1h	6.1 Improving processes and products	This question has a focus on the rusting of iron.		Y	