Unit Code:H432/01Qual Name:A level Chemistry AQual Title:Periodic table, elements and physical chemistry

Question Set	Q. No	Total Marks	AO	Spec Ref.	Торіс	Accompanying material Source	Question Subject	Additional Notes/Comments
1	1a	1	AO2	2.2.2e(i)(ii i)	Bonding and structure		This question is about bonding and structure	
1	1b	2	AO1	2.2.2g	Bonding and structure		This question is about bonding and structure	size when reproduced using different printers and photocopiers.
1	1c(i)	2	AO1 / AO2	2.2.2k, 2.2.2l, 2.2.2m(ii), 2.2.2o	Bonding and structure		This question is about bonding and structure	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
1	1c(ii)	2	AO2	2.2.2k, 2.2.2l, 2.2.2m(ii), 2.2.2o	Bonding and structure		This question is about bonding and structure	
2	2a	1	AO2	3.1.2b(iii), 2.1.4c(ii)	Group 2 / Acids		This question is about Group 2 and acids	
2	2b	3	AO1	3.1.2c, 3.1.1c	Group 2 / Periodicity		This question is about Group 2 and periodicity	
2	2c(i)	3	AO1	3.1.3e(iii), 2.1.5d	The halogens / Redox		This question is about Group 17 and redox	
2	2c(ii)	1	AO1	2.1.5a, 2.1.5c	Redox		This question is about redox	
2	2d(i)	2	AO1 / AO2	2.2.1a(i),(ii), 2.2.1b, 3.1.4a(i), 5.2.2b(i)	Electron structure / Qualitative analysis / Enthalpy and entropy		This question is about qualitative analysis and entropy	
2	2d(ii)	2	AO1 / AO2	5.2.1b(i) 5.2.2b(ii)	Lattice enthalpy / Enthalpy and entropy		This question is about qualitative analysis and entropy with links to lattice enthalpy.	
3	3a	4	AO2	5.2.2d,e	Enthalpy and entropy	This question is about enthalpy and entropy		

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3	3b(i)	1	AO1	5.1.2d	How far?	This question is about rates of reaction including how far?	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.	
3	3b(ii)	1	AO1	5.1.2d	How far?	This question is about rates of reaction including how far?		
3	3b(iii)	3	AO2	5.2.2d,e	Enthalpy and entropy	This question is aboutenthalpy and entropy.		
3	3b(iv)	3	AO2	3.2.1g(ii)(i ii)	Enthalpy changes	This question is about enthalpy changes.	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.	
4	4a	3	AO3	2.1.3e(ii)(i ii), 2.1.3g, 5.1.1h, 3.2.2e, 1.1.1a,b,c 2.1.3e(ii)(i ii), 2.1.3g, 5.1.1h, 3.2.2e, 1.1.1a,b,c 2.1.3e(ii)(i ii), 2.1.3g, 5.1.1h, 3.2.2e, 1.1.1a,b,c	Amount of substance / Reaction rates / How fast? / Planning		This question is about reaction rates and how far? It includes amount of substance and planning.	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
4	4b	1	AO3	2.1.3i 5.1.1h, 3.2.2e 1.1.1a,b,c 2.1.3i 5.1.1h, 3.2.2e 1.1.1a,b,c	Amount of substance / Reaction rates / How fast? / Planning		This question is about reaction rates and how far? It includes amount of substance and planning.	

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4	4c	6	AO2 / AO3	5.1.1b-f, 5.1.1h, 1.1.3a,b,d (ii) 5.1.1b- f, 5.1.1h, 1.1.3a,b,d (ii)	How fast?		This question is about how fast?	
5	5a	4	AO1	3.2.3b,e	Chemical equilibrium		This question is about chemical equilibrium	
5	5b(i)	2	AO1	3.2.3f, 5.1.2d, 5.1.2e	Chemical equilibrium / How far?		This question is about how far? It includes chemcial equilibrium.	
5	5b(ii)	4	AO2	5.1.2d, 5.1.2e	How far?		This question is about how far?	
6	6a	3	AO2	5.1.3d,g 1.1.3a,b,c 5.1.3d,g 1.1.3a,b,c	Acids, bases and buffers / Analysis		This question is about acids, bases and buffers.	
6	6b	2	AO2	5.1.3a(ii)	Acids, bases and buffers		This question is about acids, bases and buffers. It includes analysis.	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
6	6c(i)	5	AO3	5.1.3d, 5.1.3l 2.1.3a(i)(ii)(iv), 2.1.3e(i)(ii i) 1.1.3a,b,c 5.1.3d, 5.1.3l 2.1.3a(i)(ii)(iv), 2.1.3e(i)(ii i) 1.1.3a,b,c	Acids, bases and buffers / Amount of substance / Analysis		This question is about acids, bases and buffers. It includes analysis and amount of substance.	

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6	6c(ii)	2	AO3	5.1.3k 2.1.3e(iii) 1.1.4a,c 5.1.3k 2.1.3e(iii) 1.1.4a,c	Acids, bases and buffers / Amount of substance / Evaluation		This question is about acids, bases and buffers. It includes evaluation and amount of substance.	
7	7a(i)	4	AO1 / AO3	5.2.3g(i)(ii), 3.2.1d(i), 5.2.3f, 1.1.1a, 1.1.2a5.2. 3g(i)(ii), 3.2.1d(i), 5.2.3f, 1.1.1a, 1.1.2a	Redox and electrode potentials / Enthalpy changes / Planning / Implementing		This question is about redox and electrode potentials. It includes enthalpy changes, planning and implementing.	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
7	7a(ii)	1	AO1	5.2.3h	Redox and electrode potentials		This question is about redox and electrode potentials.	
7	7b	2	AO2	5.2.3a,c	Redox and electrode potentials		This question is about redox and electrode potentials.	
7	7c	2	AO2	5.2.3b	Redox and electrode potentials		This question is about redox and electrode potentials.	
8	8a(i)	5	AO1 / AO2	5.3.1h(i), 5.3.1j(i)(ii) , 5.3.1k(iii)	Transition elements		This question is about transition metals.	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
8	8a(ii)	2	AO1	5.3.1h(i), 5.3.1k(iii)	Transition elements		This question is about transition metals.	
8	8b	6	AO3	2.1.3c,d,e , 3.1.3g, 5.3.1e,f, 5.3.1j, 5.3.2a	Amount of substance / The halogens / Transition elements / Qualitative analysis		This question is about transition metals. It includes Group 17, amount of substance and qualitative analysis.	
9	1a(i)	2	AO1	5.2.1c(ii)	Lattice enthalpy		This question is about lattice enthalpies	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.

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9	1a(ii)	4	AO1	5.2.1d(i)	Lattice enthalpy		This question is about lattice enthalpies	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
9	1a(iii)	2	AO2	5.2.1d(ii)	Lattice enthalpy		This question is about lattice enthalpies	
9	1a(iv)	2	AO1	5.2.1e	Lattice enthalpy		This question is about lattice enthalpies	
9	1b(i)	2	AO1	3.2.1f(i)	Enthalpy changes		This question is about enthapy changes	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
9	1b(ii)	3	AO2	3.2.1f(iii)	Enthalpy changes		This question is about enthapy changes	
10	2a	6	AO2/AO	5.1.1b(i)(ii) 5.1.1c	How fast?		This question is about how fast?	Please note: images are not to scale as they may vary in
10	2b(i)	3	AO2	5.1.1k(ii) 1.1.3b,d(ii)	How fast? / Analysis		This question is about how fast and analysis.	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
10	2b(ii)	2	AO2	5.1.1k(ii) 1.1.3b,d(ii)	How fast? / Analysis		This question is about how fast and analysis.	
11	3a	2	AO1	3.2.3f, 5.1.2d, 5.1.2e	Chemical equilibrium		This question is about chemical equilbrium.	
11	3b	4	AO2	3.2.3f, 5.1.2e	Chemical equilibrium / How far?		This question is about chemical equlibrium and how far?	
11	3c(i)	1	AO1	3.2.3b,	Chemical equilibrium		This question is about chemical equilbrium.	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
11	3c(ii)	3	AO2	5.1.2f(i),g	How far?		This question is about how far?	
12	4a(i)	1	AO1	5.1.3c(i) 1.1.3a	Acids, bases and buffers / Analysis		This question is about acids, bases and buffers and analysis.	

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12	4a(ii)	3	AO1 / AO2	5.1.3c(ii), d,g 1.1.3a,b,c	Acids, bases and buffers / Analysis		This question is about acids, bases and buffers and analysis.	
12	4a(iii)	1	AO2	5.1.3g	Acids, bases and buffers		This question is about acids, bases and buffers.	
12	4b	4	AO1 /AO2	5.1.3d,f(ii) , 2.1.3a(ii), (iv), 2.1.3e(i),(iii)	Acids, bases and buffers / Amount of substance		This question is about acids, bases and buffers and amount of substance	
12	4c	2	AO2	2.2.2e(i)(ii)	Bonding and structure		This question is about bonding and structure.	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
13	5a	3	AO1	3.1.3a,2.2 .2k	The halogens / Bonding and structure		This question is about the halogens including bonding and structure.	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
13	5b	3	AO1/AO 2	3.2.1b,c	Enthalpy changes		This question is about enthalpy changes	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
13	5c	4	AO2/AO 3	2.1.3a(iv), 2.1.3e(i)(ii), 2.1.3f	Amount of substance		This question is about amount of substance	
13	5d(i)	2	AO2	2.1.4e, 5.2.3d 1.1.3b, 1.1.4b	Acids / Redox and electrode potentials / Analysis / Evaluation		This question is about acids and redox and electrode potentials . It includes analysis and evaluation.	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
13	5d(ii)	1	AO2	2.1.4e, 5.2.3d 1.1.4d	Acids / Redox and electrode potentials / Evaluation		This question is about acids and redox and electrode potentials. It includes evaluation.	

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13	5d(iii)	2	AO1/AO 2	5.2.3d 1.1.1c	Redox and electrode potentials / Planning		This question is about redox and electrode potentials. It includes planning.	
13	5d(iv)	5		5.2.3e(i)(ii), 2.1.3a(i)(ii)(iv),e,g 1.1.3a,b	Redox and electrode potentials / Amount of substance / Analysis		This question is about redox and electrode potentials and amount of substance. It includes analysis.	
14	6a	2	AO1	5.3.1b	Transition elements		This question is about transition elements	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
14	6b(i)	4	AO1 / AO3	5.2.3g(i)(ii), 3.2.1d(i), 5.2.3f, 1.1.1a, 1.1.2a	Redox and electrode potentials / Enthalpy changes / Planning / Implementing		This question is about redox and electrode potentials with enthalpy changes. It includes planning and implementing.	
14	6b(ii)	1	AO1	5.2.3h	Redox and electrode potentials		This question is about redox and electrode potentials	
14	6c(i)	1	AO2	5.2.3b,c,i	Redox and electrode potentials		This question is about redox and electrode potentials	
14	6c(ii)	4	AO3	5.2.3b,c,i	Redox and electrode potentials		This question is about redox and electrode potentials	
14	6d	6	AO3	5.3.1k(iii) 5.3.1e,f(i) ,h(i) 2.1.3a(ii), (iv),c,d 2.1.2b, 5.2.3b,c	Transition elements / Amount of substance / Compounds, formulae and equations / Redox and electrode potentials		This question is about transition elements. It includes amount of substance ; compounds, formulae and equations ; redox and electrode potentials.	
15	1a	1	AO1	3.1.1b(ii)	Periodicity		This question is about periodicity	
15	1b	2	AO2	2.1.1d(ii)	Atomic structure and isotopes		This question is about atomic structure and isotopes	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.

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15	1c(i)	1	AO2	2.1.2b	Compounds, formulae and equations		This question is about compounds, formulae and equations	
15	1c(ii)	1	AO1	3.1.2d	Group 2		This question is about Group 2	
15	1d(i)	4	AO1	3.1.1c (i), 3.2.1 d(iii) 5.2.1b(i)	Periodicity / Enthalpy changes / Lattice enthalpy		This question is about periodicity coupled with enthalpy changes and Lattice enthalpy	
15	1d(ii)	2	AO2	5.2.1.b(ii)	Lattice enthalpy		This question is about lattice enthalpy	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
15	1e(i)	2	AO1	3.1.1c(i)	Periodicity		This question is about periodicity	
15	1e(ii)	2	AO1	5.2.1e	Lattice enthalpy		This question is about lattice enthalpy	
16	2a	6	AO1 /AO3	5.1.3c(ii), 5.1.3i, 5.1.3k, 5.1.3l, 5.1.3m	Acids, bases and buffers		This question is about acids, bases and buffers	
16	2b	3	AO1 / AO2	5.3.1i	Transition elements		This question is about Transition elements	
17	3a(i)	1	AO1	5.3.1h(ii)	Transition elements		This question is about Transition elements	
17	3a(ii)	1	AO2	5.3.1j(i)	Transition elements		This question is about Transition elements	
17	3a(iii)	2	AO1 / AO2	5.3.1e(i), 5.3.1j(ii)	Transition elements		This question is about Transition elements	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
17	3a(iv)	1	AO3	5.3.1k(ii)	Transition elements		This question is about Transition elements	
17	3a(v)	1	AO1	5.3.1k(ii)	Transition elements		This question is about Transition elements	

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17	3b(1)	1	AO1	5.3.1a	Transition elements		This question is about Transition elements	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
17	3b(ii)	3	AO1 / AO3	5.2.3i	Redox and electrode potentials		This question is about redox and electrode potentials	
17	3b(iii)	1	AO2	5.3.11	Transition elements		This question is about Transition elements	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
17	3c(i)	1	AO3	5.3.1k(i)	Transition elements		This question is about Transition elements	
17	3c(ii)	5	AO2	5.2.3b, 5.2.3e(i), 5.3.1k(i), 2.1.3e(i)(ii i), g 1.1.3a,b,c	Redox and electrode potentials / Transition elements / Amount of substance / Analysis		This question is about redox and electrode potentials and Transition elements. It included amount of substance and analysis.	
17	3c(iii)	1	AO3	2.1.3c	Amount of substance		This question is about amount of substance	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
18	4a(i)	1	AO2	3.2.1a, 3.2.1f(ii)	Enthalpy changes		This question is about enthalpy changes	
18	4a(ii)	4	AO2 / AO3	5.2.2c, 5.2.2d, 5.2.2e	Enthalpy and entropy		This question is about enthalpy and entropy	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
18	4a(iii)	3	AO2	3.2.1d(ii), (iii), (iv), 3.2.1g(i),(iii)	Enthalpy changes		This question is about enthalpy changes	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.

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18	4b(i)	2	AO1	5.1.2d, 5.1.2e	How far?		This question is about How far?	
18	4bii)	5	AO2	5.1.2e, 2.1.3e(i)(ii)(iii), 2.1.3a(i)(i v)(v)	How far? / Amount of substance		This question is about How far? And includes amount of substance	
18	4b(iii)	2	AO3	3.2.3b, 5.1.2f(i), 5.1.2g, 1.1.3b, 1.1.4a	Chemical equilibrium / How far? / Analysis / Evaluation		This question is about chemical equilibrium and How far? It includes analysis and evaluation	
18	4b(iv)	1	AO3	3.2.3g, 1.1.4a	Chemical equilibrium / Evaluation		This question is about chemical equilibrium and includes evaluation	
18	4c(i)	4	AO1	3.2.2f, 3.2.2g(i)	Reaction rates		This question is about reaction rates	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
18	4c(ii)	1	AO1	3.2.2d(i)	Reaction rates		This question is about reaction rates	
19	5a	2	AO2	5.1.3d, 5.1.3g	Acids, bases and buffers		This question is about acids, bases and buffers	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
19	5b(i)	1		2.1.3e(iii), 2.1.3g, 2.1.4e,3.2 .2(i),(ii) 1.1.3a,b	Amount of substance / Acids / Reaction rates / Analysis		This question is about acids and reaction rates. It includes amount of substance and analysis	
19	5b(ii)	4	AO1 / AO2	2.1.3e(iii), g 5.1.3d, 5.1.3f(ii)	Amount of substance / Acids, bases and buffers		This question is about acids, bases and buffers and included amount of substance.	

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19	5b(iii)	3	AO2	5.1.3n(i)	Acids, bases and buffers		This question is about acids, bases and buffers	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
19	5b(iv)	1	AO3	5.1.3n(ii), 1.1.3a, 1.1.4a	Acids, bases and buffers / Analysis / Evaluation		This question is about acids, bases and buffers. It includes analysis and evaluation	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
19	5b(v)	2	AO3	5.1.3n(i)	Acids, bases and buffers		This question is about acids, bases and buffers	
19	5c	1	AO3	5.1.3h, 1.1.4a, c	Acids, bases and buffers / Evaluation		This question is about acids, bases and buffers. It includes evaluation.	
20	6	6	AO3	5.1.1a, 5.1.1b(i),(ii), 5.1.1c, 5.1.1d(i), 5.1.1g(i), 5.1.1i(ii),1 .1.3a,b,d(i) 1.1.4a	How fast? / Analysis / Evaluation	This question is about How fast? It includes analysis and evaluation.	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.	
21	1	1	AO1	2.1.1b	Electron structure	MCQ	This question is about electron structure	
21	2	1	AO1	2.1.5a	Redox	MCQ	This question is about redox	
21	3	1	AO2	2.1.1e, 2.1.2a(ii)	Atomic structure and isotopes	MCQ	This question is about atomic structure and isotopes	
21	4	1	AO2	2.1.3e(i),(iii) 2.1.4c(ii) 3.1.2b(i)	Amount of substance / Acids	MCQ	This question is about acids and includes amount of substance	
21	5	1	AO2	2.1.3h(i)	Amount of substance	MCQ	This question is about amount of substance	
21	6	1	AO2	2.1.1d(ii)	Electron structure	MCQ	This question is about electron structure	
21	7	1	AO2	2.1.5a	Redox	MCQ	This question is about redox	
21	8	1	AO2	2.1.3a(ii)(i ii)	Amount of substance	MCQ	This question is about amount of substance	

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21	9	1	AO2	2.1.3a(ii), 2.1.3e(iii), 2.1.4e	Acids / Amount of substance	MCQ	This question is about acids and includes mount of substance	
21	10	1	AO1	2.1.2a(i)	Compounds, formulae and equations	MCQ	This question is about compounds, formulae and equations	
21	11	1	AO1	2.2.1c(i)(ii)	Electron structure	MCQ	This question is about electron structure	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
21	12	1	AO2	2.1.3a(iii)(iv)	Amount of substance	MCQ	This question is about amount of substance	
21	13	1	A)2	2.1.2a(i)(ii), b, 2.1.3a(i),(iv), 2.1.3e(i),(iii), g, 1.1.1c, 1.1.3a, b	Compounds, formulae and equations / Amount of substance / Planning / Analysis	MCQ	This question is about compounds, formulae and equations. It includes amount of substance, planning and analysis.	
21	14	1	AO1	2.1.5a	Redox	MCQ	This question is about redox	
21	15	1	AO1	2.1.5a, f	Redox	MCQ	This question is about redox	
21	16	1	AO2	2.1.2a(i), b, 2.1.3a(i),(iv), 2.1.3e(i), g	Compounds, formulae and equations / Amount of substance	MCQ	This question is about compounds, formulae and equations and includes amount of substance.	
22	1	1	AO2	2.1.3a(i)(ii)(iii), 3.1.1c	Periodicity / Amount of substance	MCQ	This question is about periodicity and includes amount of substance.	
22	2	1	AO2	3.2.1f(iii)	Enthalpy changes	MCQ	This question is about enthalpy changes	
22	3	1	AO1	3.1.1c(i)	Periodicity	MCQ	This question is about periodicity	
22	4	1	AO2	2.1.2a(ii), 3.1.4a(i),(ii)	Qualitative analysis / Compounds, formulae and equations	MCQ	This question is about qualitative analysis and includes compounds, formulae and equations	
22	5	1	AO1	3.2.2g(i)	Reaction rates	MCQ	This question is about reaction rates	

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22	6	1	AO1	3.1.1d(i)(ii), 3.1.1e	Periodicity	MCQ	This question is about periodicity.	
22	7	1	AO1	3.1.2b(ii), e(i)(ii), 2.2.1d(ii)	Group 2	MCQ	This question is about Group 2	
22	8	1	AO2	2.1.3a(v), b, 2.1.3e(ii) 3.2.1a	Enthalpy changes / Amount of substance	MCQ	This question is about Enthalpy changes and includes amount of substance.	
23	1	1	AO1	5.3.1d	Transition elements	MCQ	This question is about Transition elements.	
23	2	1	AO2	5.3.2a(i),(ii)	Qualitative analysis	MCQ	This question is about qualitative analysis	
23	3	1	AO1	5.1.1d(i)	How fast?	MCQ	This question is about how fast?	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
23	4	1	AO1	5.3.1j(i)(ii)	Transition elements	MCQ	This question is about Transition elements	
23	5	1	AO2	5.1.3a(iii) 2.1.3e(iii) 2.1.4a,b	Acids, bases and buffers / Amount of substance	MCQ	This question is about acids, bases and buffers and includes amount of substance.	
23	6	1	AO2	5.1.2a	How far?	MCQ	This question is about how far?	
23	7	1	AO2	5.2.3i	Redox and electrode potentials	MCQ	This question is about redox and electrode potentials	
23	8	1	AO1	5.3.1a	Transition elements	MCQ	This question is about Transition elements.	
23	9	1	AO1	5.1.1g(i)	How fast?	MCQ	This question is about how fast?	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
23	10	1	AO1	5.1.2a,b	How far?	MCQ	This question is about how far?	
23	11	1	AO2	5.1.31	Acids, bases and buffers	MCQ	This question is about acids, bases and buffers	

Question Set	Q. No	Total Marks	AO	Spec Ref.	Торіс	Accompanying material Source	Question Subject	Additional Notes/Comments
23	12	1	AO1	5.2.2c	Enthalpy and entropy	MCQ	This question is about enthalpy and entropy	Please note: images are not to scale as they may vary in colour, density, shade and size when reproduced using different printers and photocopiers.
23	13	1	AO2	5.2.3b,c	Redox and electrode potentials	MCQ	This question is about redox and electrode potentials	
23	14	1	AO1	3.2.1d(iii), f, 5.2.1b	Lattice enthalpy / Enthalpy changes	MCQ	This question is about lattice enthalpy and includes enthalpy changes	
23	15	1	AO1	5.3.1e(ii),f (i),g	Transition elements	MCQ	This question is about Transition elements	
23	16	1	AO1	2.1.5d(i), 3.1.2c, 5.2.3a	Redox and electrode potentials / Group 2 / Redox	MCQ	This question is about redox and electrode potentials and includes Group 2	
23	17	1	AO2	5.1.1k(ii)	How fast?	MCQ	This question is about How fast?	
23	18	1	AO1	5.1.3a(ii)	Acids, bases and buffers	MCQ	This question is about acids, bases and buffers.	
23	19	1	AO2	5.3.1f(i)(ii)	Transition elements	MCQ	This question is about Transition elements	
23	20	1	AO1	5.3.1c(i)(ii)(iii)	Transition elements	MCQ	This question is about Transition elements	
23	21	1	AO2	5.2.3b, c, h, k	Redox and electrode potentials	MCQ	This question is about redox and electrode potentials.	