3

L3-CHEMMR





Te Mātauranga Matū, Kaupae 3, 2017

2.00 i te ahiahi Rāapa 15 Whiringa-ā-rangi 2017

PUKAPUKA RAUEMI mō 91390M, 91391M, 91392M

Tirohia tēnei pukapuka hei whakatutuki i ngā tūmahi o ō Pukapuka Tūmahi, Tuhinga hoki.

Tirohia mēnā e tika ana te raupapatanga o ngā whārangi 2–3 kei roto i tēnei pukapuka, ka mutu, kāore tētahi o aua whārangi i te takoto kau.

KA TAEA TĒNEI PUKAPUKA TE PUPURI HEI TE MUTUNGA O TE WHAKAMĀTAUTAU.

TE TAKA PŪMOTU

<i>18</i> He 4.0	Ne	20.2	Ar	40.0		Kr	83.8		Xe	31		n.	22		Og	
1, 2 H	$\begin{array}{ c c c }\hline 10\\ \hline \\ N \end{array}$	20	~ —		36	<u>×</u>	83	54	<u> </u>	131	98	Rn	2	118	_	
17	9 F	19.0	C	35.5	35	Br	79.9	53	Ι	127	85	At	210	117	Ts	
16	8	16.0	S	32.1	34	Se	79.0	52	Te	128	84	P_0	210	116	Lv	
15	7 N	14.0	P	31.0	33	As	74.9	51	$\mathbf{S}\mathbf{p}$	122	83	Bi	209	115	Mc	
14) 9	12.0	Si	28.1	32	Ge	72.6	50	Sn	119	82	Pb	207	114	E	
13	5 B	10.8	A	27.0	31	Са	69.7	49	In	115	81	II	204	113	Nh	
'				12	30	Zn	65.4	48	Cd	112	80	Hg	201	112	Cn	277
				II	29	Cu	63.6	47	Ag	108	62	Au	197	1111	Rg	272
				0I	28	Z	58.7	46	Pd	106	78	Pt	195	110	Ds	271
ı Ngota				6	27	Co	58.9	45	Rh	103	77	Ir	192	109	Mt	268
Papatipu Ngota				8	26	Fe	55.9	44	Ru	101	92	Os	190	108	Hs	265
1 H 1.0				7	25	Mn	54.9	43	Тс	6.86	75	Re	186	107	Bh	264
Tau Iraoho	l			9	24	Cr	52.0	42	Mo	95.9	74	*	184	106	Sg	263
Tau				5	23	>	50.9	41	NP	92.9	73	La	181	105	Db	262
				4	22	Ti	47.9	40	Zr	91.2	72	Ht	179	104	Rf	261
				3	21	Sc	45.0	39	Y	88.9	71	Lu	175	103	Lr	262
\mathcal{C}_{λ}	4 Be	9.0	Mg	24.3	20	Ca	40.1	38	Sr	9.78	99	Ba	137	88	Ra	226
I	3 Li	6.9	Z Na	23.0	19	¥	39.1		Rb	85.5	55	CS	133	87	Fr	223

	57	58	59	09	61	62	63	64	65	99	<i>L</i> 9	89	69	70
Raupapa	La	Ce	Pr	Nd	Pm	Sm	Eu	Сd	$^{\mathrm{L}}$	Dy	H_0	Er	Tm	ΛP
Lanthanide	139	140	141	144	147	150	152	157	159	163	165	167	169	173
	68	06	91	92	93	94	95	96	26	86	66	100	101	102
Raupapa	Ac	Th	Pa	n	dN	Pu	Am	Cm	Bķ	Cf	Es	Fm	Md	No
Actinide	227	232	231	238	237	239	241	244	249	251	252	257	258	259

PERIODIC TABLE OF THE ELEMENTS

<i>18</i> He 4.0	Ne	20.2	Ar	40.0		Kr	83.8		Xe	31		u.	22		Og	
18 2 H6 4.0	10 N	20	<	40	36	—	83	54	<u> </u>	13]	98	Rn	222	118	<u> </u>	
17	9 F	19.0	C	35.5	35	Br	79.9	53	Ι	127	85	At	210	117	Ls	
16	8	16.0	S	32.1	34	Se	79.0	52	Te	128	84	P_0	210	116	Lv	
15	Z	14.0	Ь	31.0	33	As	74.9	51	$\mathbf{S}\mathbf{p}$	122	83	Bi	209	115	Mc	
14	O 9	12.0	S	28.1	32	Ge	72.6	50	Sn	119	82	Pb	207	114	E	
13	5 B	10.8	Al	27.0	31	Сa	69.7	49	In	115	81	I	204	113	Nh	
'				12	30	Zn	65.4	48	Cd	112	80	Hg	201	112	Cn	277
				II	29	Cu	63.6	47	Ag	108	62	Au	197	1111	Rg	272
nass				01	28	Z	58.7	46	Pd	106	78	Pt	195	110	Ds	271
Relative atomic mass				6	27	Co	58.9	45	Rh	103	77	Ir	192	109	Mt	268
Relative				8	26	Fe	55.9	44	Ru	101	92	Os	190	108	Hs	265
1 H 1.0				7	25	Mn	54.9	43	Тс	6.86	75	Re	186	107	Bh	264
ımber				9	24	Cr	52.0	42	Mo	95.9	74	*	184	106	Sg	263
Atomic number				5	23	>	50.9	41	QN.	92.9	73	La	181	105	Db	262
4				4	22	Ï	47.9	40	Zr	91.2	72	Hf	179	104	Rf	261
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I	3 Li	6.9	Na	23.0	19	×	39.1	37	Rb	85.5	55	Cs	133	87	Fr	223

	57	58	59	09	61	62	63	64	65	99	29	89	69	70
Lanthanide La	La	Ce	Pr	Nd	Pm	Sm	Eu	Cd	$^{\mathrm{L}}$	Dy	H_0	Er	Tm	ΛP
Series	139	140	141	144	147	150	152	157	159	163	165	167	169	173
	68	06	91	92	93	94	95	96	26	86	66	100	101	102
Actinide	Ac	Th	Pa	Ω	$^{\rm N}$	Pu	Am	Cm	Bķ	Cf	Es	Fm	Md	No
Series	227	232 231	231	238	237	239	241	244	249	251	252	257	258	259

English translation of the wording on the front cover



Level 3 Chemistry, 2017

2.00 p.m. Wednesday 15 November 2017

RESOURCE BOOKLET for 91390, 91391, 91392

Refer to this booklet to answer the questions in your Question and Answer Booklets.

Check that this booklet has pages 2–3 in the correct order and that none of these pages is blank.

YOU MAY KEEP THIS BOOKLET AT THE END OF THE EXAMINATION.