L2-CHEMMR

NERERERERERERERERERERERER





## Te Mātauranga Matū, Kaupae 2, 2012

9.30 i te ata Rātū 20 Whiringa-ā-rangi 2012

PUKA RAUEMI mō 91164M, 91165M, 91166M

Tirohia tēnei pukaiti hei whakautu i ngā pātai o ō pukapuka Pātai, Whakautu hoki.

Āta tirohia kua tāngia a muri o tēnei.

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

## **TE TAKA PŪMOTU**

18 <b>He</b> 4.0	Ne	20.2		Ar	40.0		Kr	83.8		Xe	131		Rn	222			
2	10		18	_		36			54			98	<u> </u>				
17	9 F	19.0	17	<u> </u>	35.5	35	Br	79.9	53		127	85	A	210			
16	8	16.0	16	S	32.1	34	Se	79.0	52	Te	128	84	Po	210			
15	<b>Z</b>	14.0	15	Ь	31.0	33	As	74.9	51	$\mathbf{S}\mathbf{p}$	122	83	Bi	209			
14	<b>O</b> 9	12.0	14	Si	28.1	32	Ge	72.6	50	Sn	119	82	Pb	207			
13	5 <b>B</b>	10.8	13	Al	27.0	31	Ga	69.7	49	In	115	81	П	204			
					12	30	Zn	65.4	48	Cd	112	08	$_{ m Hg}$	201			
nol <sup>-1</sup>					II	29	$C\mathbf{n}$	63.5	47	$\mathbf{Ag}$	108	62	Au	197	111	Rg	272
Papatipu Rāpoi Ngota/g mol <sup>-1</sup>					0I	28	Ż	58.7	46	Pd	106	82	Pt	195	110	Ds	271
1 Кароі М					6	27	$C_0$	58.9	45	Rh	103	77	Ir	192	109	Mt	268
Papatipu					8	26	Fe	55.9	44	Ru	101	92	Os	190	108	Hs	265
1 <b>H</b> 1.0					7	25	Mn	54.9	43	Tc	6.86	75	Re	186	107	Bh	264
Tau Iraoho					9	24	Cr	52.0	42	Mo				184		S	263
Tau					5	23	>	50.9	41	Sp	92.9			181	105	Db	262
					4	22	Ï	47.9		$\mathbf{Zr}$	91.2	72	Hf	179	104	Rf	261
					3	21	Sc	45.0	39	Y	88.9	71	Lu	175	103	Lr	262
2	4 <b>Be</b>	9.0	12	Mg	24.3	20	Ca	40.1		Sr	9.78		Ba	137	88	Ra	226
<b>F</b>	3 Li	6.9	11	Na	23.0		K	39.1		Rb	85.5		Cs	133	<i>L</i> 8	Fr	223

	57	58	59	09	61	62	63	64	65	99	<i>L</i> 9	89	69	70
Te Raupapa	La	Ce	Pr	Nd	Pm	Sm	Eu	Сd		Dy	Ho	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
Te Raupapa	Ac	Th	Pa	Ω	dN	Pu	Am	Cm	Bk	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

18 <b>He</b> 4.0		7.03	<b>Ar</b> 40.0		Kr	83.8		Xe	131		Rn	222			
7	1			36			54	- 1		98					
17	9 F	19.0	CI 35.5	35	Br	79.9	53	<u> </u>	127	85	At	210			
16	8	16.0	S 32.1	34	Se	79.0	52	Te	128	84	Po	210			
15	Z 2	14.0	<b>P</b> 31.0	33	As	74.9	51	Sb	122	83	Bi	209			
14	6 C	12.0	<b>Si</b> 28.1	32	Ge	72.6	50	$\mathbf{Sn}$	119	82	Pb	207			
13	5 B	10.8	<b>AI</b> 27.0	31	Ga	69.7	49	In	115	81	II	204			
			12	30	Zn	65.4	48	Cd	112	80	$_{ m Hg}$	201			
			II	29	Cu	63.5	47	Ag	108	62	Au	197	1111	Rg	272
0]-1			10	28	Z	58.7	46	Pd	106	78	Pt	195	110	Ds	271
Molar mass/g mol <sup>-1</sup>			6	27	$C_0$	58.9	45	Rh	103	LL	Ir	192	109	Mt	268
Molar n			~	26	Fe	55.9	44	Ru	101	92	Os	190	108	Hs	265
1 <b>H</b> 1.0			_	25	Mn	54.9	43	Tc	6.86	<i>SL</i>	Re	186	107	Bh	264
Atomic number			9	24	$\mathbf{Cr}$	52.0	42		95.9	74	*	184	106	S	263
Atomic			'n	23	>	50.9	41	qN	92.9	73	Га	181	105	Dp	262
			4	22	Ξ	47.9	40	Zr	91.2	72	Hf	179	104	Rf	261
			3	21	Sc	45.0	39	Y	88.9	71	Lu	175	103	Lr	262
2	<b>Be</b>	9.0	<b>Mg</b> 24.3	20	Ca	40.1	38	Sr	9.78	99	Ba	137	88	Ra	226
7	3 Li	0.9	<b>Na</b> 23.0	19	K	39.1	37	Rb	85.5	55	Cs	133	87	$\mathbf{Fr}$	223

	57	58	59	09	61	62	63	64	65	99	29	89	69	70
Lanthanide	La	Ce	Pr	Nd	Pm	Sm	Eu	В		Dy	Ho	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	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No
Series	227	232	231	238	237	239	241	244	249	251	252	257	258	259

### English translation of the wording on the front cover

## Level 2 Chemistry, 2012

9.30 am Tuesday 20 November 2012

RESOURCE SHEET for 91164, 91165, 91166

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

Check that this sheet is printed on the back.

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