L2-CHEMR

RERESTANT SOUTH SOUTH SOUTH SOUTH SOUTH





Te Mātauranga Matū, Kaupae 2, 2013

9.30 i te ata Rātū 19 Whiringa-ā-rangi 2013

PUKA RAUEMI mō 91164M, 91165M, 91166M

Tirohia tēnei puka hei whakautu i ngā pātai i roto i ō pukapuka Pātai, Whakautu hoki.

Tirohia mehemea kei roto nei ngā whārangi 2–3 e raupapa tika ana, ā, kāore hoki he whārangi wātea.

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

TE TAKA PŪMOTU

18		He	4.0	10	Ne	20.2	18	Ar	40.0	36	Kr	83.8	54	Xe	131	98	Rn	222			
	2		7	1	r-		18	_		3(75			8					
			17	6		19.0	17	_	35.5	35	Br	79.9	53		127	85	At	210			
			91	8	0	16.0	16	S	32.1	34	Se	79.0	52	Te	128	84	Po	210	116	Lv	292
			15	7	Z	14.0	15	Ь	31.0	33	As	74.9	51	$\mathbf{S}\mathbf{p}$	122	83	Bi	209			
			14	9	C	12.0	14	Si	28.1	32	Ge	72.6	50	\mathbf{Sn}	119	82	Pb	207	114	F	289
			13	5	B	10.8	13	A	27.0	31	Сa	69.7	49	In	115	81	I	204			
									12	30	Zn	65.4	48	Cd	112	08	$_{ m Hg}$	201	112	Cn	277
			nol ⁻¹						II	29	Cu	63.5	47	Ag	108	62	Au	197	1111	$R_{\rm g}$	272
			Papatipu Rāpoi Ngota/g mol-1						0I	28	Z	58.7	46	Pd	106	78	Pt	195	110	Ds	271
			ı Rāpoi N						6	27	Co	58.9	45	Rh	103	77	Ir	192	109	Mt	268
			Papatipu						8	26	Fe	55.9	44	Ru	101	9/	Os	190	108	Hs	265
		Н	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	95.9	74	*	184	106	S	263
	Tar								5	23	>	50.9	41	Nb	92.9	73	Ta	181	105	Db	262
									4	22	Τi	47.9	40	\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	Be	0.6	12	Mg	24.3	20	Ca	40.1	38	\mathbf{Sr}	9.78	99	Ba	137	88	Ra	226
			1	3	Li	6.9	11	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	29	89	69	70
Raupapa	La	Ce	Pr	Nd	Pm	Sm	Eu	Сd	$\mathbf{T}\mathbf{b}$	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
Raupapa	Ac	Th	Pa	n	Np	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	8.8		, se	31		Rn	222			
$\begin{bmatrix} I_{c} \\ Z \\ H \\ 4 \end{bmatrix}$	10 N	20		36	<u>×</u>		54	<u> </u>	131	98	~	22			
17	9 F	19.0	CI 35.5	35	Br	79.9	53	-	127	85	At	210			
16	8	16.0	S 32.1	34	Se	79.0	52	Te	128	84	P_0	210	116	Lv	292
15	Z	14.0	P 31.0	33	As	74.9	51	$\mathbf{S}\mathbf{p}$	122	83	Bi	209			
14	O 9	12.0	Si 28.1	32	Ge	72.6	50	Sn	119	82	Pb	207	114	E	289
13	5 B	10.8	AI 27.0	31	Са	69.7	49	In	115	81	Ι	204			
·		'	12	30	Zn	65.4	48	Cd	112	80	$_{ m Hg}$	201	112	$C_{\mathbf{n}}$	277
			II	29	Cu	63.5	47	\mathbf{Ag}	108	79	Au	197	1111	$R_{\mathbf{g}}$	272
1-10			01	28	Z	58.7	46	Pd	106	78	Pt	195	110	Ds	271
Molar mass/g mol ⁻¹			6	27	Co	58.9	45	Rh	103	77	Ir	192	109	Mt	268
Molar m			∞	26	Fe	55.9	4	Ru	101	92	Os	190	108	Hs	265
1 H 1.0			_	25	Mn	54.9	43	Tc	6.86	75	Re	186	107	Bh	264
Atomic number	ı		9	24	Cr	52.0	42	Mo		74	*	184	106	S	263
Atomic			'n	23	>	50.9	41	NP	92.9	73	La	181	105	Dp	262
			4	22	Ξ	47.9	40	\mathbf{Zr}	91.2	72	Hf	179	104	Rf	261
			33	21	Sc	45.0	39	X	6.88	71	Lu	175	103	Lr	262
2	4 Be	9.0	Mg 24.3	20	Ca	40.1	38	Sr	9.78	99	Ba	137	88	Ra	226
7	3 Li	6.9	Na 23.0	19	×	39.1	37	Rb	85.5	55	Cs	133	87	Fr	223

70	Tm Yb	169 173		p	
69 89	Er	167	101 101		
9 29	Ho	165	99 1	Es	252
99	Dy	163	86	Cf	251
65	$^{\mathrm{L}}$	159	26	Bķ	249
64	Вd	157	96	Cm	244
63	Eu	152	95	Am	241
62	Sm	150	94	Pu	230
61	Pm	147	93	dN	737
09	Nd	144	92	n	238
59	Pr	141	91	Pa	23.1
58	Ce	140	06	Th	232
57	La	139	68	Ac	777
	Lanthanide	Series		Actinide	Series

English translation of the wording on the front cover

Level 2 Chemistry, 2013

9.30 am Tuesday 19 November 2013

RESOURCE SHEET for 91164, 91165, 91166

Refer to this sheet 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 SHEET AT THE END OF THE EXAMINATION.