

Modified Enlarged 24 pt

OXFORD CAMBRIDGE AND RSA EXAMINATIONS

Thursday 13 January 2022 – Morning

Level 3 Cambridge Technical in Applied Science

05847/05848/05849/05874/05879

Unit 2: Laboratory techniques

Time allowed: 2 hours plus your additional time allowance

Periodic Table

You must have:

the Data Sheet

a ruler (cm/mm)

You can use:

a scientific or graphical calculator

an HB pencil

The Periodic Table of the Elements

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(0)

<div>Key</div> <div>atomic number</div> <div>Symbol</div> <div>name</div> <div>relative atomic mass</div>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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1	H	hydrogen	1.0	3	Li	lithium	6.9	4	Be	beryllium	9.0	11	Na	sodium	23.0	12	Mg	magnesium	24.3	19	K	potassium	39.1	20	Ca	calcium	40.1	21	Sc	scandium	45.0	22	Ti	titanium	47.9	23	V	vanadium	50.9	24	Cr	chromium	52.0	25	Mn	manganese	54.9	26	Fe	iron	55.8	27	Co	cobalt	58.9	28	Ni	nickel	58.7	29	Cu	copper	63.5	30	Zn	zinc	65.4	31	Ga	gallium	69.7	32	Ge	germanium	72.6	33	As	arsenic	74.9	34	Se	selenium	79.0	35	Br	bromine	79.9	36	Kr	krypton	83.8	37	Rb	rubidium	85.5	38	Sr	strontium	87.6	39	Y	yttrium	88.9	40	Zr	zirconium	91.2	41	Nb	niobium	92.9	42	Mo	molybdenum	95.9	43	Tc	technetium		44	Ru	ruthenium	101.1	45	Rh	rhodium	102.9	46	Pd	palladium	106.4	47	Ag	silver	107.9	48	Cd	cadmium	112.4	49	In	indium	114.8	50	Sn	tin	118.7	51	Sb	antimony	121.8	52	Te	tellurium	127.6	53	I	iodine	126.9	54	Xe	xenon	131.3	55	Cs	caesium	132.9	56	Ba	barium	137.3	57–71	lanthanoids	72	Hf	hafnium	178.5	73	Ta	tantalum	180.9	74	W	tungsten	183.8	75	Re	rhenium	186.2	76	Os	osmium	190.2	77	Ir	iridium	192.2	78	Pt	platinum	195.1	79	Au	gold	197.0	80	Hg	mercury	200.6	81	Tl	thallium	204.4	82	Pb	lead	207.2	83	Bi	bismuth	209.0	84	Po	polonium		85	At	astatine		86	Rn	radon		87	Fr	francium		88	Ra	radium	89–103	actinoids	104	Rf	rutherfordium	105	Db	dubnium	106	Sg	seaborgium	107	Bh	bohrium	108	Hs	hassium	109	Mt	meitnerium	110	Ds	darmstadtium	111	Rg	roentgenium	112	Cn	copernicium					114	Fl	flerovium					116	Lv	livermorium																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

57	La lanthanum 138.9	58	Ce cerium 140.1	59	Pr praseodymium 140.9	60	Nd neodymium 144.2	61	Pm promethium 144.9	62	Sm samarium 150.4	63	Eu europium 152.0	64	Gd gadolinium 157.2	65	Tb terbium 158.9	66	Dy dysprosium 162.5	67	Ho holmium 164.9	68	Er erbium 167.3	69	Tm thulium 168.9	70	Yb ytterbium 173.0	71	Lu lutetium 175.0
89	Ac actinium	90	Th thorium 232.0	91	Pa protactinium	92	U uranium 238.1	93	Np neptunium	94	Pu plutonium	95	Am americium	96	Cm curium	97	Bk berkelium	98	Cf californium	99	Es einsteinium	100	Fm fermium	101	Md mendelevium	102	No nobelium	103	Lr lawrencium

ELEMENTS LISTED IN NUMERICAL ORDER:

1	Hydrogen	H	35	Bromine	Br
2	Helium	He	36	Krypton	Kr
3	Lithium	Li	37	Rubidium	Rb
4	Beryllium	Be	38	Strontium	Sr
5	Boron	B	39	Yttrium	Y
6	Carbon	C	40	Zirconium	Zr
7	Nitrogen	N	41	Niobium	Nb
8	Oxygen	O	42	Molybdenum	Mo
9	Fluorine	F	43	Technetium	Tc
10	Neon	Ne	44	Ruthenium	Ru
11	Sodium	Na	45	Rhodium	Rh
12	Magnesium	Mg	46	Palladium	Pd
13	Aluminium	Al	47	Silver	Ag
14	Silicon	Si	48	Cadmium	Cd
15	Phosphorus	P	49	Indium	In
16	Sulfur	S	50	Tin	Sn
17	Chlorine	Cl	51	Antimony	Sb
18	Argon	Ar	52	Tellurium	Te
19	Potassium	K	53	Iodine	I
20	Calcium	Ca	54	Xenon	Xe
21	Scandium	Sc	55	Caesium	Cs
22	Titanium	Ti	56	Barium	Ba
23	Vanadium	V	57	Lanthanum	La
24	Chromium	Cr	58	Cerium	Ce
25	Manganese	Mn	59	Praseodymium	Pr
26	Iron	Fe	60	Neodymium	Nd
27	Cobalt	Co	61	Promethium	Pm
28	Nickel	Ni	62	Samarium	Sm
29	Copper	Cu	63	Europium	Eu
30	Zinc	Zn	64	Gadolinium	Gd
31	Gallium	Ga	65	Terbium	Tb
32	Germanium	Ge	66	Dysprosium	Dy
33	Arsenic	As	67	Holmium	Ho
34	Selenium	Se	68	Erbium	Er

69	Thulium	Tm
70	Ytterbium	Yb
71	Lutetium	Lu
72	Hafnium	Hf
73	Tantalum	Ta
74	Tungsten	W
75	Rhenium	Re
76	Osmium	Os
77	Iridium	Ir
78	Platinum	Pt
79	Gold	Au
80	Mercury	Hg
81	Thallium	Tl
82	Lead	Pb
83	Bismuth	Bi
84	Polonium	Po
85	Astatine	At
86	Radon	Rn
87	Francium	Fr
88	Radium	Ra
89	Actinium	Ac
90	Thorium	Th
91	Protactinium	Pa
92	Uranium	U
93	Neptunium	Np
94	Plutonium	Pu
95	Americium	Am
96	Curium	Cm
97	Berkelium	Bk
98	Californium	Cf
99	Einsteinium	Es
100	Fermium	Fm
101	Mendelevium	Md
102	Nobelium	No
103	Lawrencium	Lr
104	Rutherfordium	Rf

105	Dubnium	Db
106	Seaborgium	Sg
107	Bohrium	Bh
108	Hassium	Hs
109	Meitnerium	Mt
110	Darmstadtium	Ds
111	Roentgenium	Rg
112	Copernicium	Cn
114	Flerovium	Fl
116	Livermorium	Lv



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