

**Modified Enlarged 18 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)

Key	
atomic number	
Symbol	
name	
relative atomic mass	

1		atomic number										2					
H		Symbol										He					
hydrogen		name										helium					
1.0		relative atomic mass										4.0					
												13	14	15	16	17	18
3	Li	4	Be									5	6	7	8	9	10
lithium	6.9	beryllium	9.0									boron	carbon	nitrogen	oxygen	fluorine	neon
11	Na	12	Mg									13	14	15	16	17	18
sodium	23.0	magnesium	24.3									aluminium	silicon	phosphorus	sulfur	chlorine	argon
19	K	20	Ca									31	32	33	34	35	36
potassium	39.1	calcium	40.1									gallium	germanium	arsenic	selenium	bromine	krypton
37	Rb	38	Sr									49	50	51	52	53	54
rubidium	85.5	strontium	87.6									indium	tin	antimony	tellurium	iodine	xenon
55	Cs	56	Ba									81	82	83	84	85	86
caesium	132.9	barium	137.3									thallium	lead	bismuth	polonium	astatine	radon
87	Fr	88	Ra										114		116		
francium		radium											flerovium		livermorium		

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

## ELEMENTS LISTED IN NUMERICAL ORDER:

1	Hydrogen	H	41	Niobium	Nb	81	Thallium	Tl
2	Helium	He	42	Molybdenum	Mo	82	Lead	Pb
3	Lithium	Li	43	Technetium	Tc	83	Bismuth	Bi
4	Beryllium	Be	44	Ruthenium	Ru	84	Polonium	Po
5	Boron	B	45	Rhodium	Rh	85	Astatine	At
6	Carbon	C	46	Palladium	Pd	86	Radon	Rn
7	Nitrogen	N	47	Silver	Ag	87	Francium	Fr
8	Oxygen	O	48	Cadmium	Cd	88	Radium	Ra
9	Fluorine	F	49	Indium	In	89	Actinium	Ac
10	Neon	Ne	50	Tin	Sn	90	Thorium	Th
11	Sodium	Na	51	Antimony	Sb	91	Protactinium	Pa
12	Magnesium	Mg	52	Tellurium	Te	92	Uranium	U
13	Aluminium	Al	53	Iodine	I	93	Neptunium	Np
14	Silicon	Si	54	Xenon	Xe	94	Plutonium	Pu
15	Phosphorus	P	55	Caesium	Cs	95	Americium	Am
16	Sulfur	S	56	Barium	Ba	96	Curium	Cm
17	Chlorine	Cl	57	Lanthanum	La	97	Berkelium	Bk
18	Argon	Ar	58	Cerium	Ce	98	Californium	Cf
19	Potassium	K	59	Praseodymium	Pr	99	Einsteinium	Es
20	Calcium	Ca	60	Neodymium	Nd	100	Fermium	Fm
21	Scandium	Sc	61	Promethium	Pm	101	Mendelevium	Md
22	Titanium	Ti	62	Samarium	Sm	102	Nobelium	No
23	Vanadium	V	63	Europium	Eu	103	Lawrencium	Lr
24	Chromium	Cr	64	Gadolinium	Gd	104	Rutherfordium	Rf
25	Manganese	Mn	65	Terbium	Tb	105	Dubnium	Db
26	Iron	Fe	66	Dysprosium	Dy	106	Seaborgium	Sg
27	Cobalt	Co	67	Holmium	Ho	107	Bohrium	Bh
28	Nickel	Ni	68	Erbium	Er	108	Hassium	Hs
29	Copper	Cu	69	Thulium	Tm	109	Meitnerium	Mt
30	Zinc	Zn	70	Ytterbium	Yb	110	Darmstadtium	Ds
31	Gallium	Ga	71	Lutetium	Lu	111	Roentgenium	Rg
32	Germanium	Ge	72	Hafnium	Hf	112	Copernicium	Cn
33	Arsenic	As	73	Tantalum	Ta	114	Flerovium	Fl
34	Selenium	Se	74	Tungsten	W	116	Livermorium	Lv
35	Bromine	Br	75	Rhenium	Re			
36	Krypton	Kr	76	Osmium	Os			
37	Rubidium	Rb	77	Iridium	Ir			
38	Strontium	Sr	78	Platinum	Pt			
39	Yttrium	Y	79	Gold	Au			
40	Zirconium	Zr	80	Mercury	Hg			



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