

**Modified Enlarged 18 pt**

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS**

**Thursday 19 May 2022 – Morning**

**Level 3 Cambridge Technical in Applied Science**

**05847/05848/05849/05874/05879**

**Unit 1: Science fundamentals**

**Periodic Table**

**You must have:**

**the Data Sheet**

**a ruler (cm/mm)**

**Model for Question 2(b)**

**You can use:**

**a scientific or graphical calculator**

**an HB pencil**

# The Periodic Table of the Elements

(1)

(2)

1

2

1

H

hydrogen

1.0

3

Li

lithium

6.9

11

Na

sodium

23.0

4

Be

beryllium

9.0

12

Mg

magnesium

24.3

19

K

potassium

39.1

37

Rb

rubidium

85.5

55

Cs

caesium

132.9

87

Fr

francium

20

Ca

calcium

40.1

38

Sr

strontium

87.6

56

Ba

barium

137.3

88

Ra

radium

21

Sc

scandium

45.0

39

Y

yttrium

88.9

57–71

lanthanoids

89–103

actinoids

22

Ti

titanium

47.9

40

Zr

zirconium

91.2

72

Hf

hafnium

178.5

104

Rf

rutherfordium

23

V

vanadium

50.9

41

Nb

niobium

92.9

73

Ta

tantalum

180.9

105

Db

dubnium

24

Cr

chromium

52.0

42

Mo

molybdenum

95.9

74

W

tungsten

183.8

106

Sg

seaborgium

25

Mn

manganese

54.9

43

Tc

technetium

75

Re

rhenium

186.2

107

Bh

bohrium

26

Fe

iron

55.8

44

Ru

ruthenium

101.1

76

Os

osmium

190.2

108

Hs

hassium

27

Co

cobalt

58.9

45

Rh

rhodium

102.9

77

Ir

iridium

192.2

109

Mt

meitnerium

28

Ni

nickel

58.7

46

Pd

palladium

106.4

78

Pt

platinum

195.1

110

Ds

darmstadtium

29

Cu

copper

63.5

47

Ag

silver

107.9

79

Au

gold

197.0

111

Rg

roentgenium

30

Zn

zinc

65.4

48

Cd

cadmium

112.4

80

Hg

mercury

200.6

112

Cn

copernicium

31

Ga

gallium

69.7

49

In

indium

114.8

81

Tl

thallium

204.4

32

Ge

germanium

72.6

50

Sn

tin

118.7

82

Pb

lead

207.2

114

Fl

flerovium

33

As

arsenic

74.9

51

Sb

antimony

121.8

83

Bi

bismuth

209.0

34

Se

selenium

79.0

52

Te

tellurium

127.6

84

Po

polonium

116

Lv

livermorium

35

Br

bromine

79.9

53

I

iodine

126.9

85

At

astatine

36

Kr

krypton

83.8

54

Xe

xenon

131.3

86

Rn

radon

37

Ar

argon

39.9

55

87

38

S

sulfur

32.1

56

88

39

P

phosphorus

31.0

57

89

40

Si

silicon

28.1

58

90

41

Al

aluminium

27.0

59

91

42

C

carbon

12.0

60

92

43

N

nitrogen

14.0

61

93

44

O

oxygen

16.0

62

94

45

F

fluorine

19.0

63

95

46

Ne

neon

20.2

64

96

47

He

helium

4.0

65

97

18

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

## 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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