

The Periodic Table

Total mark – 15

Question: 1

- 2 Use the Chemistry Data Sheet to help you answer this question.

Figure 2 shows part of the periodic table.

Figure 2

1	2															3	4	5	6	7	0
																					He
Li	Be																			F	Ne
Na	Mg																			Cl	Ar
K	Ca																			Br	Kr

- 2 (a) Give the name of the element that should be in the shaded box.

[1 mark]

- 2 (b) How many different elements are there in the complete periodic table?

[1 mark]

Tick (✓) **one** box.

About 36

☐

About 100

☐

About 500

☐

2 (c) What are **two** reasons why lithium, sodium and potassium are in the same group of the periodic table?

[2 marks]

Tick (✓) **two** boxes.

Low melting points

☐

Same number of electrons in the outer shell

☐

Similar atomic (proton) numbers

☐

Similar chemical reactions

☐

Two electrons in the innermost shell

☐

2 (d) Complete each sentence.

[2 marks]

The elements in Group 0 are called _____ gases.

The elements in the central block are known as _____ metals.

2 (e) Use the correct word from the box to complete each sentence.

[2 marks]

alloys

ions

molecules

polymers

protons

Atoms of fluorine gain electrons to form fluoride _____.

Atoms of fluorine share electrons to form fluorine _____.

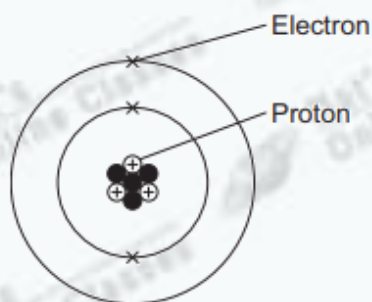
Question	Answers	Extra information	Mark	AO / Spec. Ref.
2(a)	hydrogen	allow H ignore numbers	1	A02 1.1.2
2(b)	about 100		1	A01 1.1.1a
2(c)	same number of electrons in the outer shell		1	A01 1.1.2a
	similar chemical reactions		1	
2(d)	noble	ignore inert	1	A01 1.1.2b 1.3.3a
	transition		1	
2(e)	ions	in this order	1	A02 1.1.3a
	molecules		1	
Total			8	

Question: 2

1 There are eight elements in the second row (lithium to neon) of the periodic table.

1 (a) Figure 1 shows a lithium atom.

Figure 1



1 (a) (i) What is the mass number of the lithium atom in Figure 1?

[1 mark]

Tick (✓) **one** box.

3

☐

4

☐

7

☐

1 (a) (ii) What is the charge of an electron?

[1 mark]

Tick (✓) **one** box.

-1

☐

0

☐

+1

☐

1 (a) (iii) Protons are in the nucleus.

Which other sub-atomic particles are in the nucleus?

[1 mark]

Tick (✓) **one** box.

ions

☐

molecules

☐

neutrons

☐

1 (b) What is **always** different for atoms of different elements?

[1 mark]

Tick (✓) **one** box.

number of neutrons

☐

number of protons

☐

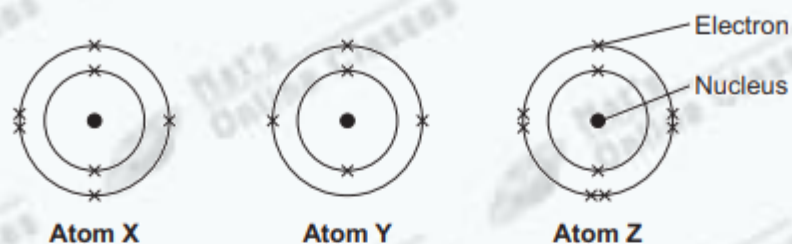
number of shells

☐

- 1 (c) **Figure 2** shows the electron arrangements of three different atoms, **X**, **Y** and **Z**.

These atoms are from elements in the second row (lithium to neon) of the periodic table.

Figure 2



Which atom is from an element in Group 3 of the periodic table?

[1 mark]

Tick (✓) **one** box.

Atom X

☐

Atom Y

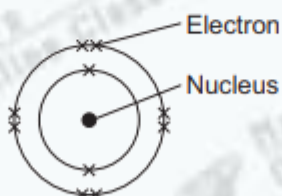
☐

Atom Z

☐

- 1 (d) **Figure 3** shows the electron arrangement of a different atom from an element in the second row of the periodic table.

Figure 3



- 1 (d) (i) Give the chemical symbol of this element.

[1 mark]

- 1 (d) (ii) Why is this element unreactive?

[1 mark]

Question 1

Question	Answers	Extra information	Mark	AO / Spec. Ref.
1(a)(i)	7		1	AO2 1.1.1g
1(a)(ii)	-1		1	AO1 1.1.1d
1(a)(iii)	neutrons		1	AO1 1.1.1c
1(b)	number of protons		1	AO1 1.1.1f
1(c)	atom Y		1	AO2 1.1.1 h; 1.1.2a
1(d)(i)	Ne	allow neon	1	AO2 1.1.2a/b
1(d)(ii)	has a full outer shell or full outer energy level or has 8 electrons in its outer shell	allow in Group 0 allow a noble gas allow the shells are full ignore in Group 8	1	AO2 1.1.2b; 1.1.3a
Total			7	