

**0 3**

This question is about the periodic table and argon.

**0 3 . 1**

What order did scientists use to arrange elements in early periodic tables?

**[1 mark]**Tick (✓) **one** box.

Atomic weight of element

Number of neutrons in an atom of element

Size of atoms of element

Year element was discovered

**0 3 . 2**

In early periodic tables some elements were placed in the wrong groups.

Mendeleev overcame some of these problems in his periodic table.

Complete the sentence.

**[1 mark]**

Mendeleev did this by leaving \_\_\_\_\_ for elements that had not been discovered.

**Question 3 continues on the next page****Turn over ►**

**0 3 . 3** What is the name of the group that contains argon?

**[1 mark]**

Tick (✓) **one** box.

Alkali metals

Halogens

Noble gases

**0 3 . 4** An atom of argon is represented as  ${}^{40}_{18}\text{Ar}$

Determine the number of protons and the number of neutrons in one atom of argon.

**[2 marks]**

Number of protons \_\_\_\_\_

Number of neutrons \_\_\_\_\_

**0 3 . 5** Different atoms of argon are,  ${}^{39}_{18}\text{Ar}$  and  ${}^{38}_{18}\text{Ar}$

What is the name given to these different atoms of argon?

**[1 mark]**

Tick (✓) **one** box.

Fullerenes

Ions

Isotopes

Molecules



0 3 . 6

What is the electronic structure of an argon atom,  ${}_{18}^{40}\text{Ar}$ ?

[1 mark]

Tick (✓) **one** box.2 2, 8 2, 8, 2 2, 8, 8 

0 3 . 7

Why is argon unreactive?

[1 mark]

---

---

---

**8****Turn over for the next question****Turn over ►**

Question	Answers	Extra information	Mark	AO / Spec.
03.1	atomic weight of element		1	AO1 5.1.2.2
03.2	gaps	allow spaces / blanks  do <b>not</b> accept undiscovered elements	1	AO1 5.1.2.2
03.3	noble gases		1	AO1 5.1.2.4
03.4	18  22	this order only	1  1	AO2 5.1.1.5
03.5	isotopes		1	AO1 5.1.1.5
03.6	2,8,8		1	AO2 5.1.1.5
03.7	stable arrangement (of electrons)	allow full outer shell allow eight electrons in the outer shell allow does not need to gain or lose electrons	1	AO1 5.1.2.4
<b>Total</b>			<b>8</b>	