

1 Two statements about argon are given.

- 1 Argon has a full outer shell of electrons.
- 2 Argon is very reactive and is used in lamps.

Which is correct?

- A Both statements are correct and statement 2 explains statement 1.
- B Both statements are correct but statement 2 does not explain statement 1.
- C Statement 1 is correct but statement 2 is incorrect.
- D Statement 2 is correct but statement 1 is incorrect.

2 Part of the Periodic Table is shown.

Which element is a gas that does **not** form a compound with potassium?

The diagram shows a partial periodic table with the following structure:

- Row 1: Two empty boxes on the left, one empty box in the middle, and one empty box on the right.
- Row 2: Two empty boxes on the left, followed by a long row of 10 empty boxes, followed by two empty boxes, then element **A**, and element **B**.
- Row 3: Element **C** in the second column, followed by a long row of 10 empty boxes, followed by two empty boxes, then element **D**, and one empty box.
- Row 4: A long row of 12 empty boxes.
- Row 5: A long row of 12 empty boxes.

3 Two statements about noble gases are given.

- 1 Noble gases are reactive, monatomic gases.
- 2 Noble gases all have full outer shells of electrons.

Which is correct?

- A Both statements are correct and statement 2 explains statement 1.
- B Both statements are correct but statement 2 does not explain statement 1.
- C Statement 1 is correct but statement 2 is incorrect.
- D Statement 2 is correct but statement 1 is incorrect.

4 The Group 0 elements are unreactive.

The gas used to fill balloons is ..... X..... .

This gas is unreactive because it has ..... Y..... electrons in its outermost shell.

Which words correctly complete gaps X and Y?

	X	Y
<b>A</b>	argon	eight
<b>B</b>	argon	two
<b>C</b>	helium	eight
<b>D</b>	helium	two

5 Hydrogen and helium have both been used to fill balloons.

Which property of helium makes it the preferred choice to hydrogen?

- A** easily compressed into a gas cylinder
- B** forms monatomic molecules
- C** lower density
- D** unreactive

6 The following statements are about elements in the Periodic Table.

- 1 Their atoms have a full outer shell of electrons.
- 2 They form basic oxides.
- 3 They are found in Group 0.
- 4 They are present in small quantities in the air.

Which statements are correct for the noble gases?

- A** 1, 2 and 3      **B** 1, 2 and 4      **C** 1, 3 and 4      **D** 2, 3 and 4

- 7 The noble gases, which are in Group 0 of the Periodic Table, are all very ..... 1..... .  
 ..... 2....., one of these gases, is used to provide an inert atmosphere in lamps.  
 Another, ..... 3....., is used for filling balloons because it is less dense than air.  
 Which words complete the sentences about noble gases?

	1	2	3
A	reactive	argon	helium
B	reactive	helium	argon
C	unreactive	argon	helium
D	unreactive	helium	argon

- 8 The diagram shows a section of the Periodic Table.  
 Which element is described below?

'A colourless, unreactive gas that is denser than air.'

																				A	
																					B
																					C
																					D

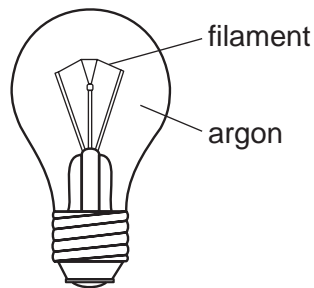
- 9 An inert gas X is used to fill weather balloons.  
 Which descriptions of X are correct?

	number of outer electrons in atoms of X	structure of gas X
A	2	single atoms
B	2	diatomic molecules
C	8	single atoms
D	8	diatomic molecules

10 Why is argon gas used to fill electric lamps?

- A It conducts electricity.
- B It glows when heated.
- C It is less dense than air.
- D It is not reactive.

11 The diagram shows a light bulb.



Why is argon used instead of air in the light bulb?

- A Argon is a good conductor of electricity.
- B Argon is more reactive than air.
- C The filament glows more brightly.
- D The filament does not react with the argon.

12 Why are weather balloons filled with helium rather than hydrogen?

- A Helium is found in air.
- B Helium is less dense than hydrogen.
- C Helium is more dense than hydrogen.
- D Helium is unreactive.

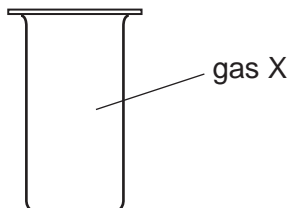
13 Statement 1: Helium is a reactive gas.

Statement 2: Helium can be used to fill balloons.

Which is correct?

- A** Both statements are correct and statement 2 explains statement 1.
- B** Both statements are correct but statement 2 does not explain statement 1.
- C** Statement 1 is correct but statement 2 is incorrect.
- D** Statement 2 is correct but statement 1 is incorrect.

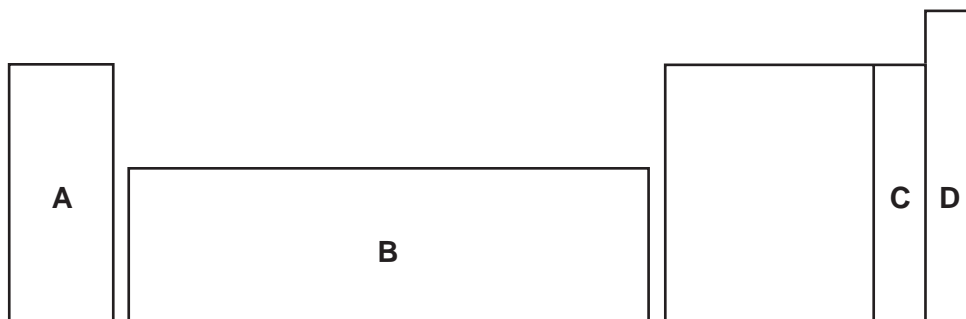
14 X is a monatomic gas.



Which statement about X is correct?

- A** X burns in air.
  - B** X is coloured.
  - C** X is unreactive.
  - D** X will displace iodine from potassium iodide.
- 15 An element does not conduct electricity and exists as diatomic molecules.

In which area of the Periodic Table is the element to be found?



16 Elements in Group 0 of the Periodic Table have uses.

These noble gases are .....1..... and this explains why argon .....2..... be used in lamps.

Which words correctly complete gaps 1 and 2?

	1	2
<b>A</b>	reactive	can
<b>B</b>	reactive	cannot
<b>C</b>	unreactive	can
<b>D</b>	unreactive	cannot

17 An inert atmosphere is needed in a lamp to lengthen the useful life of the metal filament.

Why is argon, rather than helium, used for this purpose?

	argon is more abundant in the air	argon is less dense than helium
<b>A</b>	✓	✓
<b>B</b>	✓	x
<b>C</b>	x	✓
<b>D</b>	x	x