

**Questions 1-5**

(Answer these questions online.)

Question 6

Explain how the following relate to the atomic structure of elements.

(a) Atomic number

(b) Period number

(c) Group number (for main group elements)

Question 7

(Answer this question online.)

Question 8

(a) Explain why sodium is not found as a pure metal in nature.

(b) Name a substance in which sodium is commonly found.



**Question 9**

- (a) Give three examples of naturally occurring elements that are radioactive.

- (b) Give three examples of synthetic elements.

Question 10

- (a) Suggest why many historically important paper documents, such as the original copy of the United States Declaration of Independence, are stored in sealed containers containing argon gas.

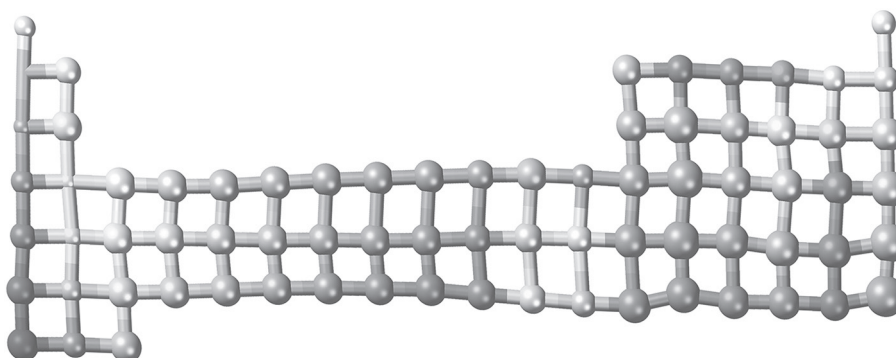
- (b) Suggest another gas that could also be used.

Questions 11-13

(Answer these questions online.)

Question 14

Describe the trend in melting point going across a period.



**Extension Question 1**

During a class experiment you produced a green solid with the molecular formula AB_2 . Where would elements A and B be located on the periodic table? If you were able to decompose the compound AB_2 into its elements A and B, what properties would each of these have? Justify your answer.

Extension Question 2

Compare the densities of the following gases: fluorine, nitrogen and oxygen. Give reasons for your answer.

Extension Question 3

(a) Research the meaning of electronegativity.

(b) How does electronegativity trend down groups and across periods?

(c) Compare electronegativity with reactivity, for metals and non-metals.
