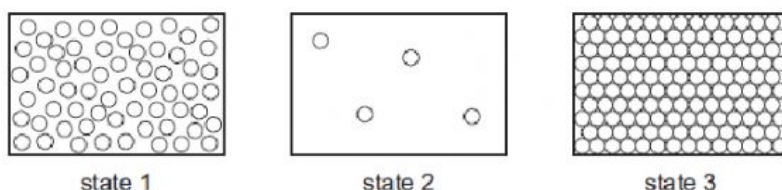


- 1 The diagrams show the arrangement of particles in three different physical states of substance X.



Which statement about the physical states of substance X is correct?

- A Particles in state 1 vibrate about fixed positions.
  - B State 1 changes to state 2 by diffusion.
  - C State 2 changes directly to state 3 by condensation.
  - D The substance in state 3 has a fixed volume.
- 2 What is always true for a pure substance?
- A It always boils at  $100^{\circ}\text{C}$ .
  - B It contains only one type of atom.
  - C It has a sharp melting point.
  - D It is solid at room temperature.

- 1 Pure water boils at  $100^{\circ}\text{C}$ .

What happens to the water particles when water boils?

- A They gain energy and move further apart.
- B They gain energy and stay close together.
- C They lose energy and move further apart.
- D They lose energy and stay close together.

27 Aluminium is an important metal with many uses.

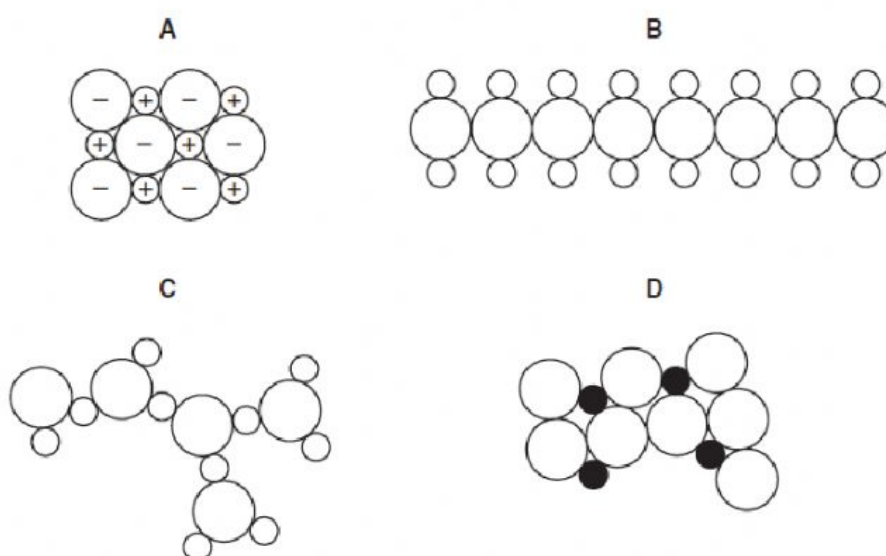
Some of its properties are listed.

- 1 It is a good conductor of heat.
- 2 It has a low density.
- 3 It has an oxide layer that prevents corrosion.

Which set of properties help to explain the use of aluminium for cooking and storing food?

- A 1 only      B 1 and 2 only      C 2 and 3 only      D 1, 2 and 3

28 Which diagram could represent the structure of an alloy?



1. Four processes are listed.

- 1 Brownian motion
- 2 condensation
- 3 diffusion
- 4 evaporation

Which processes involve a change of state?

- A. 1 and 2  
B. 1 and 3  
C. 2 and 4  
D. 3 and 4

2. Sodium chloride is a liquid at 900 °C.

How are the particles arranged and how do the particles move in sodium chloride at 900 °C?

	Arrangement of particles	Motion of particles
<b>A.</b>	Regular	vibrate about a fixed point
<b>B.</b>	Regular	move randomly
<b>C.</b>	Random	vibrate about a fixed point
<b>D.</b>	Random	move randomly

3. The properties of four elements are shown. Which element is used to make aircraft bodies?

	Density	Brittle or malleable
<b>A.</b>	High	Brittle
<b>B.</b>	High	Malleable
<b>C.</b>	Low	Brittle
<b>D.</b>	Low	Malleable

4. Why can metals be bent and shaped?

- A.** Strong forces hold their atoms together.
- B.** Their atoms are arranged in layers which slide over each other.
- C.** Their atoms have a tetrahedral arrangement.

5. What is an alloy?

- A.** A mixture of two or more elements, where at least one element is a metal.
- B.** A mixture of three or more elements, where at least one element is a metal.
- C.** A compound of two or more elements, where at least one element is a metal.
- D.** A compound of three or more elements, where at least one element is a metal

6. Which of these materials is an alloy?

- A.** Iron
- B.** Copper
- C.** Steel
- D.** Aluminium

7. Which naturally occurring polymers are found in foods?

- 1. Carbohydrates
- 2. nylon
- 3. Salts
- 4. proteins

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