

24 Which properties decrease down the group of alkali metals?

- 1 melting point
- 2 density
- 3 reactivity

A 1 and 2 **B** 1 only **C** 2 and 3 **D** 3 only

23 Which statement about the elements in Group I is correct?

- A** Hydrogen is produced when Group I elements react with water.
- B** Ions of Group I elements have a 1– charge.
- C** Sodium is more reactive than potassium.
- D** Solid sodium is a poor electrical conductor.

27 Which statement about Group I or Group VII elements is correct?

- A** Group VII elements are monatomic non-metals.
- B** Lithium is more reactive with water than caesium.
- C** The melting point of Group I metals increases down the group.
- D** Potassium bromide reacts with chlorine to produce an orange solution.

22 Sodium is a Group I metal.

What is a physical property of sodium?

- A** non-conductor of electricity
- B** high melting point
- C** high density
- D** malleable

21 A Group I metal (lithium or potassium) is reacted with a Group VII element (chlorine or iodine).

Which compound is formed when the Group I metal of highest density reacts with the Group VII element of lowest density?

- A** potassium chloride
- B** lithium chloride
- C** potassium iodide
- D** lithium iodide

5 Alkali metals are reactive elements.

(a) State the group number of the alkali metals.

..... [1]

(b) Identify the alkali metal which:

(i) has the highest melting point

..... [1]

(ii) has the highest density

..... [1]

(iii) has the lowest reactivity

..... [1]

(iv) burns with a lilac flame

..... [1]

(v) is found in fertilisers to improve plant growth.

..... [1]

(c) Sodium sulfide, Na_2S , is an ionic compound.

Complete Fig. 5.1 to show the electronic configurations of the ions in sodium sulfide.

Show the charges on the ions.

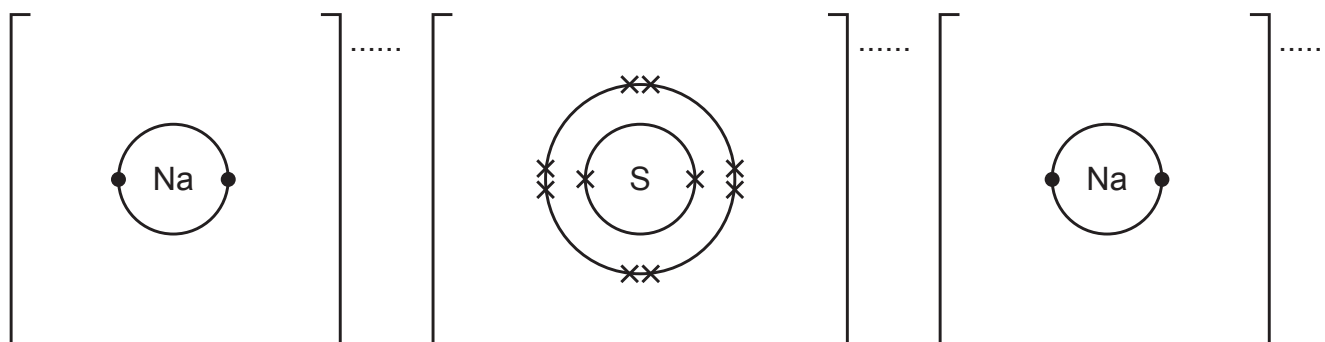


Fig. 5.1

[3]

(d) Rubidium has only two naturally occurring atoms, ^{85}Rb and ^{87}Rb .

(i) State the term given to these naturally occurring atoms of rubidium.

..... [1]

(ii) Complete Table 5.1 to show the number of protons, neutrons and electrons in the atom and ion of rubidium shown.

Table 5.1

	^{85}Rb	$^{87}\text{Rb}^+$
protons		
neutrons		
electrons		

[3]

(iii) The relative atomic mass of rubidium to one decimal place is 85.5.

Determine the relative abundance of ^{85}Rb in rubidium. Express your answer as a percentage.

.....% [1]

[Total: 14]