

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.

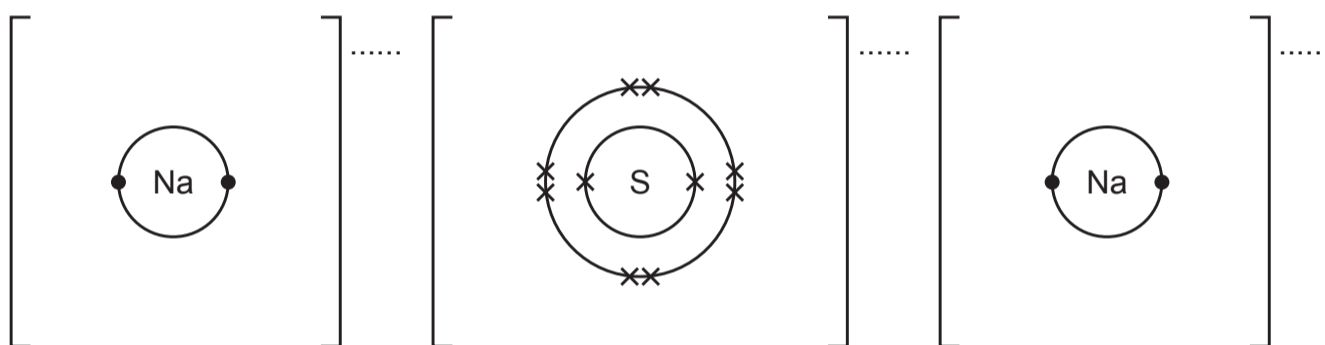


Fig. 5.1

[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]