

2 This question is about ionic compounds.

(a) State what is meant by the term ionic bond.

.....
 [2]

(b) Potassium sulfide, K_2S , is an ionic compound.

Complete the dot-and-cross diagram in Fig. 2.1 of the ions in potassium sulfide.

Show the charges on the ions.

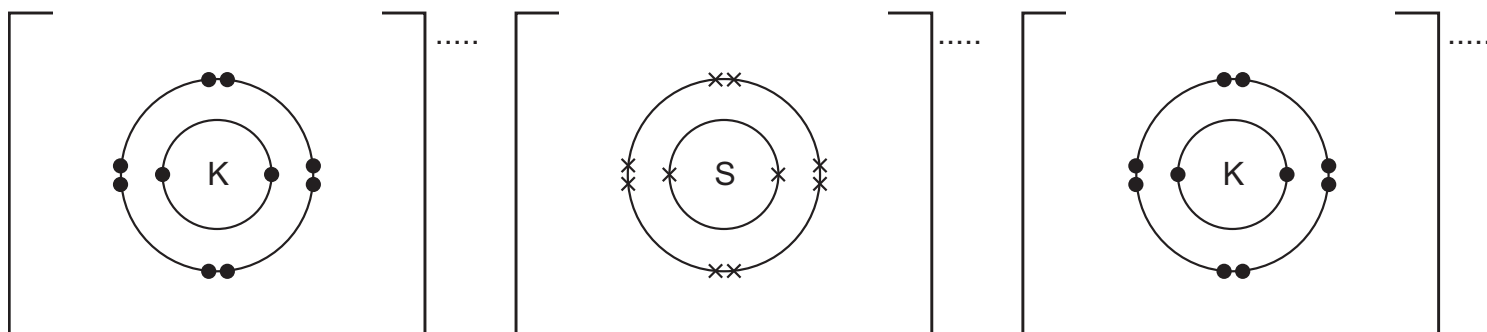


Fig. 2.1

[3]

(c) Ionic compounds form giant ionic lattices.

(i) Fig. 2.2 shows part of the giant ionic lattice structure of sodium chloride.

Complete the diagram in Fig. 2.2 to show the ions present. Use '+' for sodium ions and '-' for chloride ions. One chloride ion has been completed for you.

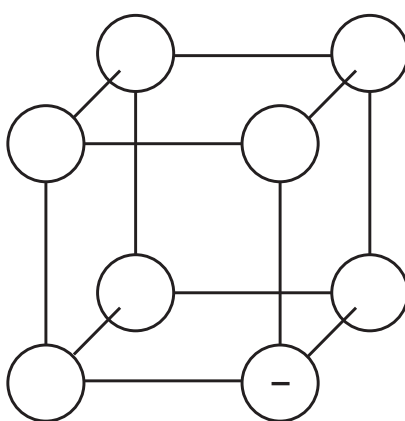


Fig. 2.2

[2]

(ii) State the name given to any positive ion.

..... [1]

(d) Ionic compounds can be decomposed by the passage of an electric current using inert electrodes.

(i) State the name of this process.

..... [1]

(ii) Write the ionic half-equation for the reaction which takes place at the anode when **molten** potassium bromide, KBr , is decomposed by the passage of an electric current.

..... [2]

(iii) Name the products and state the observations at the negative and positive electrodes when **dilute aqueous** potassium bromide, KBr , is decomposed by the passage of an electric current.

product at the negative electrode

.....

observations at the negative electrode

.....

products at the positive electrode

..... and

observations at the positive electrode

.....

[5]