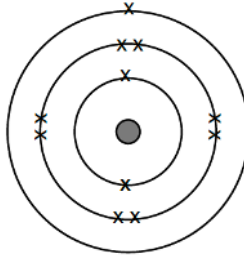


0	1
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Sodium chloride, also known as common salt, can be made by reacting sodium and chlorine gas. The diagram below represents a sodium atom.



0	1	.	1
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Use the diagram to help you explain how a sodium atom turns into a sodium ion.

Give the exact charge on the sodium ion.

**[3 marks]**

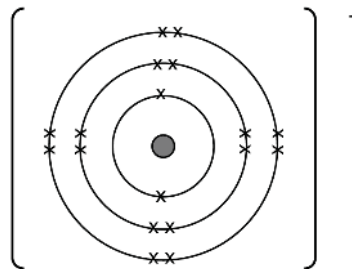
.....

.....

.....

0	1	.	2
---	---	---	---

The diagram below represents a chloride ion.



The chloride ion is negative, (Cl<sup>-</sup>).

Explain why the chloride ion has a negative charge. Use the diagram to help you.

**[2 marks]**

.....

.....

.....

.....

0	1	.	3
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Chloride ions are strongly attracted to sodium ions in sodium chloride.

Explain why.

**[1 mark]**

.....

.....

0	2
---	---

 . 

1
---

Chlorine is an element which is in group 7 of the periodic table (the halogens).

There are more elements in group 7.

Name another element in group 7 of the Periodic Table.  
You may use the periodic table to help you.

[1 mark]

.....

0	2
---	---

 . 

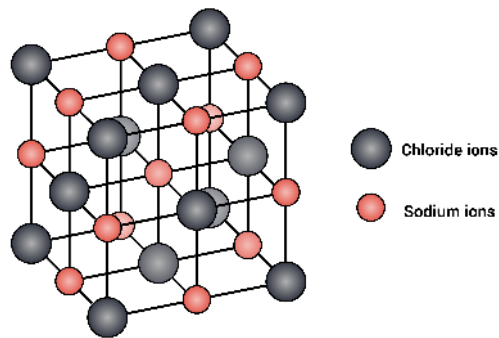
2
---

All group 7 elements can produce ions.  
What is the charge on the ions produced by group 7 elements?

[1 mark]

.....

The diagram below represents the lattice structure of a sodium chloride crystal.



0	2
---	---

 . 

3
---

Explain why the ions in this lattice stay in place.

[3 marks]

.....  
.....  
.....  
.....

(Total 11 marks)

End