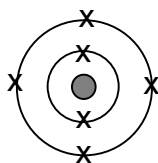


- 1 The diagrams represent the atoms that make up a molecule of methane. The formula for methane is CH_4 .



Carbon



Hydrogen

- 1 (a) (i) In the box above, draw a molecule of methane. You need only represent the outermost shells in your diagram.

(2 marks)

- 1 (a) (ii) Name the type of bond that you have represented in your diagram.

.....

(1 mark)

(Total 3 marks)

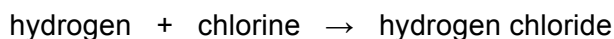
- 2 Hydrogen chloride (HCl) can be made by the reaction of hydrogen (H_2) with chlorine (Cl_2).

- 2 (a) In the space below draw a diagram to represent a molecule of hydrogen chloride (HCl).

You need show only the outer energy level (shell) electrons.

(3 marks)

- 2 (b) The word equation for the reaction of hydrogen with chlorine is shown below.



Write a balanced symbol equation for this reaction.

.....
(2 marks)

(Total 5 marks)

- 2 (c) One of the gases present in the atmosphere is water vapour. Describe the bonding in this compound. You must include electronic structures in your explanation.

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(4 marks)

(Total 4 marks)

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