

AQA – Bonding – A2 Chemistry P1 & P3

1. No.5

0	5
---	---

This question is about chlorine.

0	5	.	1
---	---	---	---

Give an equation to show how chlorine forms an acidic solution in water.

[1 mark]

0	5	.	2
---	---	---	---

Give an equation for the reaction between chlorine and cold, dilute aqueous sodium hydroxide.

[1 mark]

0	5	.	3
---	---	---	---

In acidic conditions, ClO_3^- ions oxidise Cl^- ions to form Cl_2 Deduce a half-equation for the oxidation of Cl^- to Cl_2 Deduce a half-equation for the reduction of ClO_3^- to Cl_2

Deduce the overall equation for this reaction.

[3 marks]Half-equation for the oxidation of Cl^- to Cl_2

Half-equation for the reduction of ClO_3^- to Cl_2

Overall equation

0 5 . 4

Give the equation for the reaction of solid sodium chloride with concentrated sulfuric acid.

State the role of the chloride ions in this reaction.

[2 marks]

Equation

Role

0 5 . 5

Draw the shape of the Cl_3^- ion.
Include any lone pairs of electrons that influence the shape.

[1 mark]

0 5 . 6

Chlorine forms an ion with the Group 3 element thallium (Tl).

State and explain the bond angle in TlCl_2^+

[2 marks]

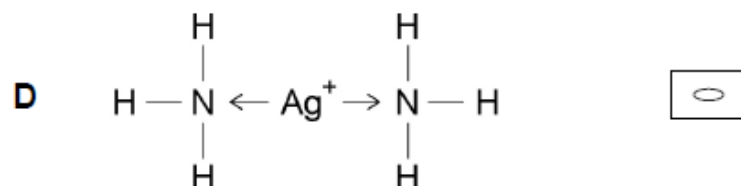
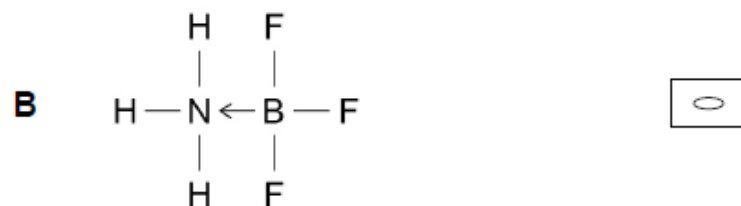
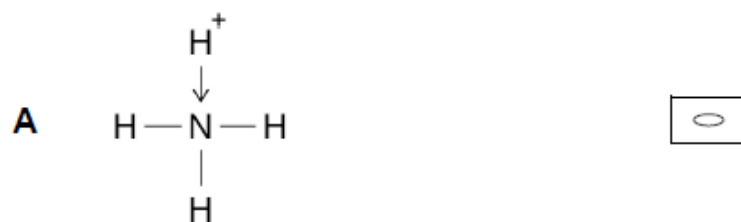
Bond angle

Explanation

2. No.10

Which diagram shows the formation of a dative covalent bond?

[1 mark]



3. No.11

Which substance does **not** have any bond angles of 120° ?

[1 mark]

A benzene ☐

B boron trifluoride ☐

C cyclohexane ☐

D graphite ☐

4. No.12

Which molecule does **not** have a permanent dipole?

[1 mark]

A NH_3 ☐B PCl_3 ☐C SCl_2 ☐D SiCl_4 ☐