**1** Give the formula of the following ions.

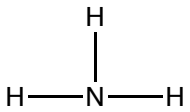
potassium $K^+$ carbonate $CO_3^{2-}$ cobalt(III) $Co^{3+}$

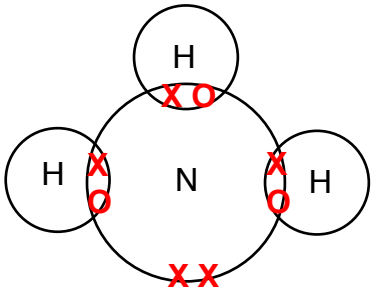
**2** Give the formula of the following ionic compounds.

magnesium nitrate $Mg(NO_3)_2$ aluminium bromide $AlBr_3$

lithium oxide $Li_2O$ iron(II) hydroxide $Fe(OH)_2$

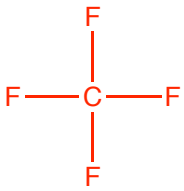
**3** The stick diagram of ammonia, $NH_3$, is shown. Complete the dot-cross diagram.




**4** Tetrafluoromethane ($CF_4$) is a molecular substance with a boiling point of –128°C.

**a** Draw a stick diagram for a molecule of $CF_4$




**b** Explain why $CF_4$ has a low boiling point.

**weak forces between molecules**

**only need low amounts of energy to overcome**