Acids and Alkalis – Higher Tier

Write equations to show the following acids dissolve in water:

HCl\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

H2SO4\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

HNO3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write equations to show the following alkalis dissolving in water:

NaOH\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Ca(OH)2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Define what is meant by the term *neutralisation reaction,* include a general word equation.

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**Higher Tier**

A scientist titrates a solution of Hydrochloric Acid, HCl, of unknown concentration against a 25cm3 solution of 0.15mol/dm3 Sodium Hydroxide, NaOH. It takes 34cm3 of the Hydrochloric Acid to completely neutralise the Sodium Hydroxide.

Write a balanced symbol equation for the neutralisation of Sodium Hydroxide by Hydrochloric Acid.

What is the ratio of Sodium Hydroxide to Hydrochloric Acid?

How many moles of Sodium Hydroxide were present in the 25cm3? (moles = conc in mol/dm3 x vol in dm3)

How many moles of Hydrochloric Acid were present in the 34cm3? (Look at the ratio of in the equation)

Thus, what is the concentration of the Hydrochloric Acid?

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