**Chemistry Revision: Acids and Alkalis**

Mastery Matrix Points

|  |
| --- |
| Identify the ions produced by different acids and alkalis |
| Describe the pH scale and how to test pH using universal indicator or a pH probe |
| Describe neutralisation reactions (alkalis and bases, metal carbonates and acid) |
| Deduce the formulae of salts from their given ions |
| Explain the method for producing soluble salts |
| **Required practical 1: Prepare a pure dry sample of a soluble salt from an insoluble oxide or carbonate** |
| Recall the ionic equation for neutralisation |

Key Knowledge

Insoluble metal hydroxide - base or alkali?

Soluble metal hydroxide - base or alkali?

Metal oxide - base or alkali?

Metal carbonate - base or alkali?

What ions to acids produce in aqueous solutions?

What ions to alkalis produce in aqueous solutions?

pH Scale – Label strong acid, weak acid, neutral, weak alkali, strong alkali:

|  |  |  |
| --- | --- | --- |
| ***pH*** | ***Description*** | ***Colour in universal indicator*** |
| Image result for ph scale to fill out vertical |  |  |

Ionic equation for neutralisation:

Complete the general word equations:

acid + metal oxide 🡪

acid + metal hydroxide 🡪

acid + metal carbonate 🡪

Understanding and Explaining

1. Explain why using a pH probe to measure the pH of a chemical may be give precise results than using an indicator, such as universal indicator.
2. Complete the word equations. Then turn to symbol equations.

Copper carbonate + sulfuric acid 🡪

Iron carbonate + hydrochloric acid 🡪

Zinc carbonate + nitric acid 🡪

Iron oxide + hydrochloric acid 🡪

Copper hydroxide + nitric acid 🡪

Copper oxide + hydrochloric acid 🡪

1. Complete the table to show the chemical formula of these salts.

|  |  |  |  |
| --- | --- | --- | --- |
| ***Name*** | ***Formula*** | ***Name*** | ***Formula*** |
| Sodium sulfate |  | Zinc sulfate |  |
| Lithium chloride |  | Zinc nitrate |  |
| Magnesium chloride |  | Potassium sulfate |  |

1. Describe the method and equipment needed to prepare a dry sample of a soluble salt, such as producing copper sulfate from copper oxide and sulfuric acid.