Reactions of acids and making salts

AQA 8462 Separate Chemistry · Foundation and Higher

Answer on your own paper. Show your working where needed.

1. Read pH values

Solution A has pH 3, solution B has pH 7 and solution C has pH 11. Identify the acidic, neutral and alkaline solutions.

2. A metal reacts with an acid

Magnesium reacts with dilute hydrochloric acid. Name the salt and gas produced. Describe how to test for the gas and give a positive result.

3. A carbonate reacts with an acid

Write the complete word equation for calcium carbonate reacting with nitric acid.

4. Compare two metals

Zinc and copper are placed separately in dilute hydrochloric acid. Bubbles form around the zinc. There is no visible change with the copper. Explain these results using the reactivity series.

5. Choose starting materials

A student wants to make copper(II) sulfate crystals from an insoluble metal oxide and a dilute acid. Name the oxide and acid. Explain why it helps to have some solid left at the end of the reaction.

6. Recover dry crystals

A student has a mixture of magnesium sulfate solution and excess magnesium oxide. Describe how to obtain dry magnesium sulfate crystals from it.

7. Compare two acid solutions (Higher)

Dilute hydrochloric acid and ethanoic acid have the same concentration. Predict which solution has the lower pH and explain why.

8. pH and concentration (Higher)

Solution X has pH 2 and solution Y has pH 5. Which has the higher hydrogen ion concentration? Calculate how many times greater it is and show your working.

9. Extra challenge · Choose a route to a salt

Two students make zinc sulfate solution with dilute sulfuric acid. Student P uses zinc carbonate and Student Q uses zinc oxide. Predict how they can distinguish the reactions by a test on a product. Then explain how each student should separate dry zinc sulfate crystals from an excess of starting solid.

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