GCSE Chemistry A (Gateway Science)

J248/01 Chemistry A C1-C3 and C7 (Foundation Tier)

Question Set 24

1 A student has a solution of hydrochloric acid, HC*l*, and a solution of sodium hydroxide, NaOH.

He wants to make a pure, dry sample of sodium chloride.

(a) Describe how he can do this.

Include the apparatus he should use and his method.

[4]

- Titration
- Put acid in burette
- Pipette (a known volume of) sodium hydroxide into flask
- Use an universal indicator or use pH meter
- add acid to sodium hydroxide until the colour changes from purple to green or until the number on pH meter goes down (from pH 14 to 7)
- Record the volume of acid required to neutralise the alkali
- Repeat to get an accurate value
- Repeat titration again with no indicator
- Evaporate off the water from salt solution to allow salt to crystallise.

(b) Write a **balanced symbol** equation for the reaction. **[1]**

$HCl + NaOH \rightarrow NaCl + H_2O$

(c) The student also investigates other reactions.

The table shows the salts he can make from different starting materials.

Complete the table.

Acid used	Other starting material	Salt made
Sulfuric acid	Copper oxide	copper sulfate
nitric acid	Zinc carbonate	Zinc nitrate
Hydrochloric acid	magnesium	Magnesium chloride

[3]

(d) What **type** of reaction happens when sulfuric acid reacts with copper oxide? **[1]**

neutralisation

Total Marks for Question Set 24: 9