Oxford Cambridge and RSA

GCSE Chemistry B (Twenty First Century Science)

J258/04 Depth in chemistry (Higher Tier)

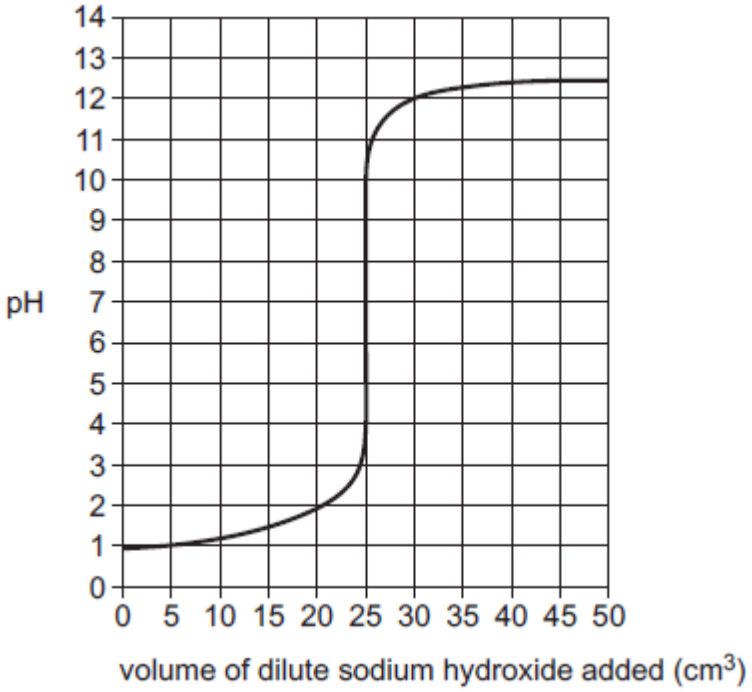
Question Set 14

1. Ali investigates how the pH changes when dilute sodium hydroxide reacts with dilute hydrochloric acid.

He puts 20.0 cm^3 of dilute hydrochloric acid in a beaker. He adds dilute sodium hydroxide, 1.0 cm^3 at a time, to the acid.

He uses a pH meter to measure the pH after each addition of sodium hydroxide.

Ali plots a graph of his results.



Ali writes an ionic equation for the reaction.

$H^+ + OH^- \rightarrow H_2O$

(a) Use the **ionic equation** and **values from the graph** to explain the pH changes that happen during the reaction. **[3]**

(b) Ali started with **20.0 cm3** of dilute hydrochloric acid in the beaker.

Explain how his results show that the acid is more concentrated than the dilute sodium hydroxide. **[2]**

Total Marks for Question Set 14: 5