



**Question 1:** Choose the correct answer.

1. How does diluting an acid with water affect its pH?
  - a. The pH decreases towards 7
  - b. The pH increases towards 7
  - c. It has no effect on the pH
  
2. What colour change could occur when hydrochloric acid is added to an alkaline solution containing universal indicator?
  - a. Red to green
  - b. Green to purple
  - c. Purple to red
  
3. A small amount of hydrochloric acid is dissolved in a large volume of water. What is the best description of this solution?
  - a. A dilute solution of a weak acid
  - b. A weak solution of a strong acid
  - c. A dilute solution of a strong acid
  
4. A piece of pH paper turned red after it was placed in a solution, what is the type of the solution?
  - a. A strong alkali
  - b. A weak acid
  - c. A strong acid
  - d. it is water

**Question 2:** The picture shows a bottle of liquid drain cleaner.



The drain cleaner contains a solution of a chemical called sodium hydroxide. Sodium hydroxide is an alkali.

(a) Suggest a pH value for sodium hydroxide solution.

2.5      5.7      8.2

(b) What type of reaction occurs when an acid is added to the drain cleaner?

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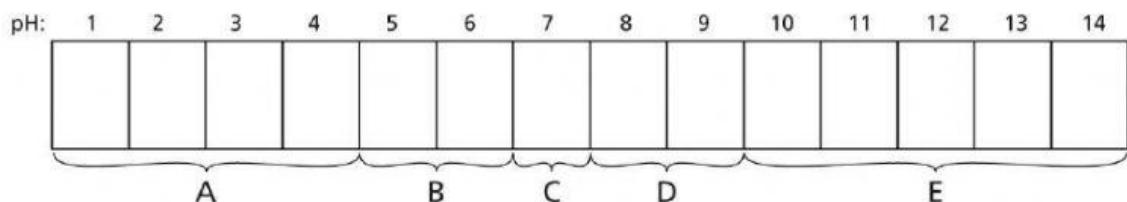
(c) Ken investigates the reaction between an acid called sulfuric acid and the drain cleaner. He puts 100 cm<sup>3</sup> of drain cleaner into a beaker.

- What should Ken use to measure the pH value of the drain cleaner? Circle the correct answer.

**Chalk powder   universal indicator   thermometer   water**

**Question 3:** The pH scale demonstrates how strong an acid or an alkali is. The colors on a pH colour chart show the colour that universal indicator turns with acids and alkalis of different strengths.

a) Colour the pH colour chart below to show what colour universal indicator turns with different strengths of acids and alkalis.



b. Identify the labels A to E, match the letter with the correct description:

Strong acid	weak acid	strong alkali	weak alkali	neutral
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