

O Level Pure Chemistry MCQs

Acids and Bases Test 2.0

Q1

What does a solution of hydrogen chloride in ethanol contain?

- A ethanol molecules and hydrogen chloride molecules
- B ethanol molecules, hydrogen ions and chloride ions
- C ethanol ions, hydrogen chloride molecules
- D ethanol ions, hydrogen ions and chloride ions

Q2

Arsine (AsH_3) is a gas that behaves like ammonia. Which of the following ions are produced when Arsine dissolves in water?

- A AsH^+ and H^+
- B AsH_3^+ and OH^-
- C AsH_4^+ and H^+
- D AsH_4^+ and OH^-

Q3

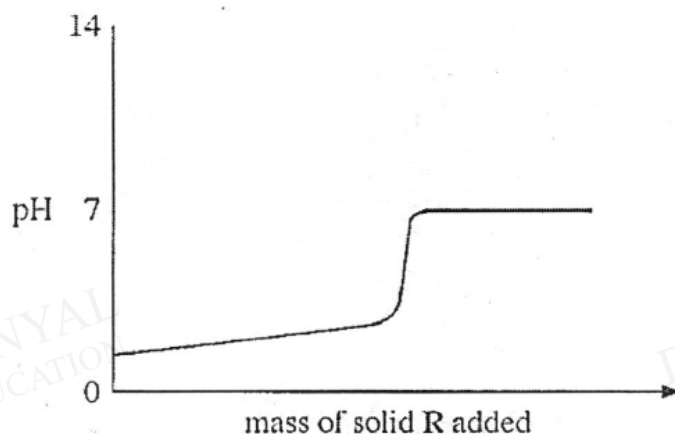
What are the uses of sulfuric acid?

- I making fertilizers
- II sterilising water
- III making detergents
- IV used in car batteries

- A I and II only
- B II and III only
- C I, III and IV only
- D I, II, III and IV

Q4

Solid R is gradually added to aqueous solution S. The changes in pH are shown in the graph below.



What are R and S?

- | | R | S |
|---|---------------------------|-------------------|
| A | insoluble metal oxide | hydrochloric acid |
| B | insoluble non-metal oxide | sodium hydroxide |
| C | soluble metal oxide | hydrochloric acid |
| D | soluble non-metal oxide | sodium hydroxide |

Q5

A new indicator has just been produced in the laboratory. It changes colour according to the table below:

pH	colour
0 - 3	red
3.5 - 5	green
5 - 14	purple

Which of the following substances can be distinguished using the new indicator?

- A aqueous ammonia and potassium hydroxide
- B aqueous hydrogen chloride and carbon dioxide
- C aqueous sodium nitrate and sodium hydroxide
- D water and aqueous sodium chloride

Q6

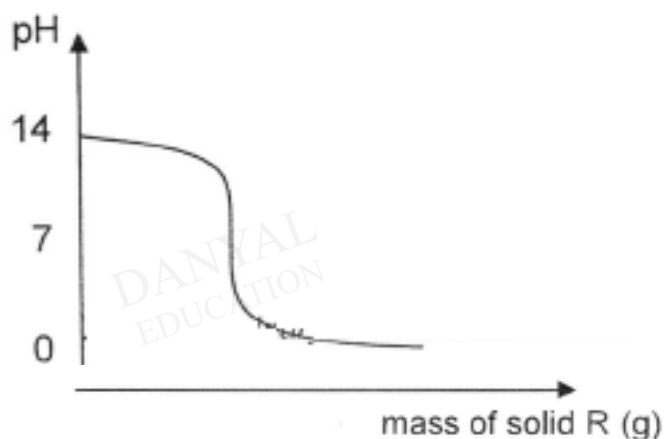
Which statement correctly describes an acidic solution?

- A It contains hydrogen ions only.
- B It contains more hydrogen ions than hydroxide ions.
- C It turns blue cobalt chloride paper pink.
- D It turns universal indicator blue.

Q7

Solid R is gradually added to aqueous solution S.

The changes in pH are shown on the graph below.



What are substances R and S?

	substance R	substance S
A	insoluble non-metal oxide	sodium hydroxide
B	soluble metal oxide	aqueous ammonia
C	soluble non-metal oxide	aqueous ammonia
D	soluble non-metal oxide	sodium hydroxide

Q8

Which oxide is unlikely to dissolve in aqueous sodium hydroxide?

- A Al_2O_3
- B MgO
- C P_4O_{10}
- D SO_2

Q9

Farmers and gardeners often treat soil with ammonium sulfate to increase the nitrogen content in soil. Calcium hydroxide is also often added to soil.

Given that a farmer added both chemicals to soil together, which of the statements below is true?

- A** Ammonium sulfate increases the pH of soil.
- B** The calcium hydroxide decreases the pH of the soil.
- C** Sulfur dioxide is produced in the reaction between ammonium sulfate and calcium hydroxide.
- D** Ammonium sulfate can react with calcium hydroxide and the nitrogen content of soil does not improve.

Q10

The following are some statements on hydroxide, OH^- ions.

- It reacts with hydrogen ions to form water.
- It reacts with aqueous iron(III) sulfate to form a green precipitate.
- It migrates to the cathode in electrolysis of an aqueous solution.
- Its solution gives an alkaline gas when warmed with aqueous ammonium chloride.

How many statements are correct?

- A** 1 **B** 2 **C** 3 **D** 4

Answers

Acids and Bases Test 2.0

Q1 A

Q2 D

Q3 C

Q4 A

Q5 B

Q6 B

Q7 D

Q8 B

Q9 D

Q10 B

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