

Measuring acidity with the pH scale

Grade 8 science (Year 9 · Class 8) · Test

Name: _____ Date: _____ Class: _____ Mark: ____ / 20

This test lasts 45 minutes and is worth 20 marks. Answer every question, show your working for calculations and give units. Use the key facts from the lesson, and write full sentences for explanations.

Level: Grade 8 science (Year 9 · Class 8) · **Curriculum:** MS-PS1-2

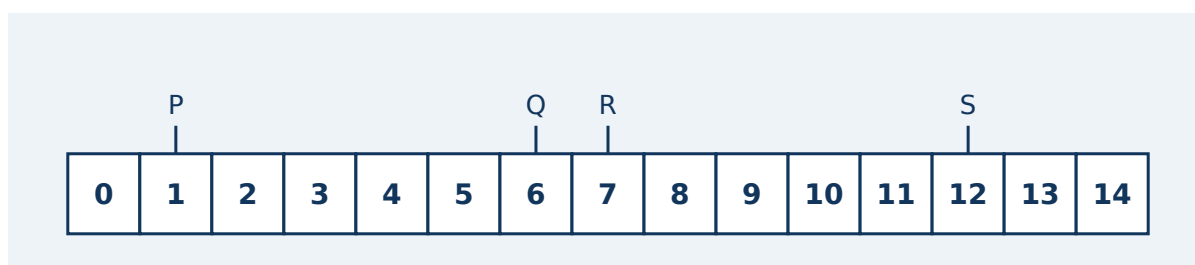
Time: 45 minutes · 8 questions · Total: 20 marks · Calculator allowed

Question 1 Indicators (2 marks)

- State the colour of blue litmus paper in an acid. (1 mark)
- State the colour of universal indicator in a neutral liquid. (1 mark)

Question 2 Reading the scale (3 marks)

The scale shows the pH of four liquids P, Q, R and S.



pH values of four liquids.

- Identify the neutral liquid. (1 mark)
- Identify the strongest acid. (1 mark)
- Identify the liquid that turns universal indicator purple. (1 mark)

Question 3 Dilution by 100 (2 marks)

A strong acid of pH 3 is diluted by a factor of 100.

- Calculate the new pH. (2 marks)

Question 4 Comparing acidity (3 marks)

Liquid X has pH 3 and liquid Y has pH 6.

- Calculate how many times more acidic X is than Y. (2 marks)
- State what both liquids are. (1 mark)

Question 5 Why not alkaline? (3 marks)

- Explain why adding more and more water to an acid never gives an alkali. (3 marks)

Question 6 Safe working (2 marks)

- State two safety rules when diluting a concentrated acid. (2 marks)

Question 7 Neutralisation (2 marks)

- Write the word equation for hydrochloric acid reacting with sodium hydroxide. (2 marks)

Question 8 Dilution plan (3 marks)

Imani in Kampala has 40 mL of strong acid of pH 1 and wants pH 3.

- Calculate the dilution factor. (1 mark)
- Calculate the final volume. (1 mark)
- Calculate the volume of water to add. (1 mark)