

Name _____ Class _____

1 Put a circle around the **three** things in this list that are acidic.

tap water sugar orange juice salt
vinegar flour lemonade mineral water

[3 marks]

2



A



B



C



D

Which of these hazard warnings means that a chemical:

a is flammable _____
[1 mark]

b is poisonous _____
[1 mark]

c is corrosive _____
[1 mark]

d is an irritant? _____
[1 mark]

e What does 'flammable' mean? _____
[1 mark]

f Which of the hazard symbols would you be most likely to find on a:
i concentrated acid? _____
ii dilute acid? _____
[2 marks]

- 3 Sarah tested a number of substances with red cabbage juice to see if they were acids or alkalis. She tried lemonade, tap water, toothpaste, vinegar and washing powder. When she mixed the lemonade with the red cabbage juice it went red.

a Name one other substance that would also make the cabbage juice go red.

_____ [1 mark]

b Name one substance in the list that is an alkali. _____

[1 mark]

c What name do we give to substances like red cabbage that can change colour when mixed with acids and alkalis?

_____ [1 mark]

d Name another substance that Sarah could have used instead of red cabbage that would also change colour.

_____ [1 mark]

e What colour would this substance be in an acid? _____

[1 mark]

f What name do we give to substances that are neither acid nor alkali?

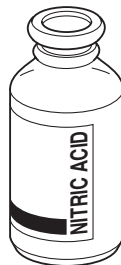
_____ [1 mark]

g Sarah had a pen which had purple ink in it. She wondered if the ink might work as an indicator. Explain how she could do a simple test to find out.

_____ [2 marks]

- 4 Asif wanted to find out whether the acid or the alkali was stronger.

He put 5 cm^3 of alkali in a tube.
He added acid 1 cm^3 at a time.
Each time he added acid, he measured the pH of the solution.



Volume of acid added (cm^3)	pH
Start (no acid)	10.5
1	10.5
2	10.0
3	9.5
4	7.5
5	5.0
6	4.0
7	3.5
8	3.5
9	3.0
10	3.0

His results are in the table.

- a Suggest a way in which Asif could have measured the pH of the solution.

[1 mark]

- b Plot these results on the graph paper.
Join up the points with a smooth line.

[3 marks]

- c How much acid did Asif need to make the solution neutral? Tick the correct answer.

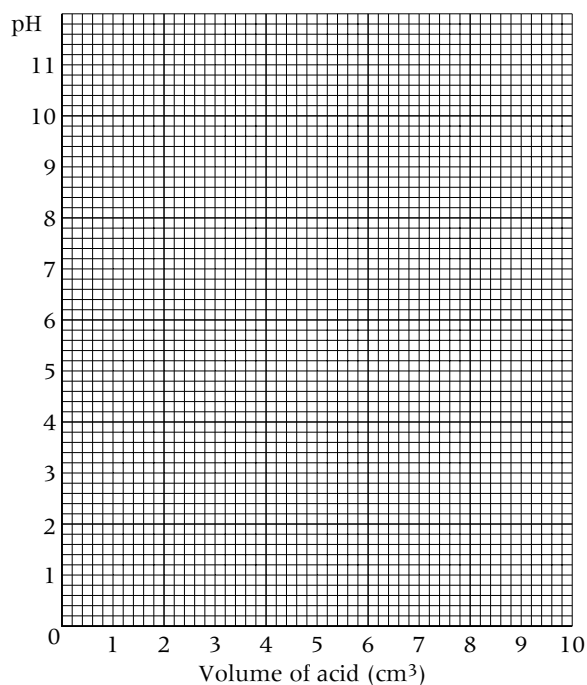
[1 mark]

Exactly 4 cm^3 ☐

Between 4 and 5 cm^3 ☐

Exactly 5 cm^3 ☐

More than 5 cm^3 ☐



- d Which was stronger, the acid or the alkali? Explain your reasoning.

[2 marks]