

Acids and alkalis/simple chemical reactions

Q1-L3, Q2-L4, Q3-L4, Q4-L5, Q5-L6, Q6-L6

1. (a) a magnet *accept 'an electromagnet'* 1
do not accept 'a sieve'
do not accept 'tweezers'
- (b) any **one** from 1
 • they dissolved *accept 'they formed a solution'*
 • they are soluble in water *accept 'they are soluble'*
- (c) (i) bubbles formed 1
 (ii) It turned cloudy. ✓ 1

if more than one box is ticked, award no mark

[4]

2. (a) (i) 7 *do not accept 'neutral'* 1
 (ii) it was neutral ✓ *if more than one box is ticked,* 1
award no mark
consequential marking applies
accept 'it was acidic' if the answer to part (i) was less than 7
accept 'it was alkaline' if the answer to part (i) was greater than 7 and up to 14
- (b) any **one** from 1
 • it decreased **or** went down *accept 'it dropped to 5'*
 • it became acidic **or** more acidic
- (c) an alkali ✓ *if more than one box is ticked,* 1
award no mark

[4]

3. (a) (i) magma 1
(ii) igneous 1
(b) (i) any **one** from 1
• thermal energy *accept 'heat' or 'energy'*
• electricity
(ii) **answers may be in either order**
• solid 1
• liquid *accept 'fluid'* 1
(c) oxygen 1

[6]

4. (a)

	acidic or alkaline	colour of universal indicator paper
<i>bee sting (pH 2)</i>	acidic	red
<i>wasp sting (pH 10)</i>	alkaline	blue accept 'purple'

award one mark for each correct row

- (b) (i) any **one** from 1
• bicarbonate toothpaste *accept 'bicarbonate' or 'toothpaste' or 'hydrogencarbonate'*
• washing soda
(ii) any **one** from 1
• vinegar
• lemon juice

[4]

5. (a) in tube B: no oxygen *accept 'no air'* 1
in tube C: no water **or** water vapour *accept 'no moisture'* 1
accept 'it was dry' or 'it was not wet'
(b) (i) acidic 1
(ii) hydrogen 1
(c) (i) it increased **or** it was more *accept 'it was heavier'* 1
(ii) any **one** from 1
• oxygen **or** water was added
• the oxygen has mass
• rust contains iron and oxygen **or** water
accept 'rust is iron oxide'
• the iron reacted with oxygen **or** water

(d) **Answers must refer to either test-tube D or to sea water.**

any **one** from

1

- the nail was more rusty in D than in A

accept 'D was the only one which was rusty'

accept 'D was very rusty'

- it was more rusty in sea water
- sea water contains salt

[7]

6. (a) (i) carbon dioxide

accept 'CO₂'

1

any **one** from

it took more **or** most alkali to neutralise it **or** to change the colour of the indicator back to green

accept 'it took most drops' or 'it took 160'

both the answer and the reason are required for the mark

(ii) air

1

it did not change the colour of the indicator **or** the pH of the solution

accept 'no drops or alkali were needed'

accept 'there was no change'

both the answer and the reason are required for the mark

(iii) any **one** from

1

- neutralises it
- it raises the pH

accept 'it makes it less acidic'

accept 'it makes it pH 7'

accept 'it forms a salt'

do not accept 'makes it more alkaline'

(b) zinc chloride + hydrogen

1

1

answers may be in either order

[5]