



Rewarding Learning

General Certificate of Secondary Education
2012

Science: Single Award (Modular)

Chemical Patterns and our Environment

Module 3

Foundation Tier

[GSC31]

TUESDAY 13 NOVEMBER 2012

9.15 am–10.00 am

**MARK
SCHEME**

- 1 (a) vinegar – ethanoic acid
oven cleaner – sodium hydroxide
baking soda – sodium hydrogencarbonate
lemon juice – citric acid [4]
- (b) (i) barium chloride [1]
(ii) ammonium dichromate [1]
(iii) corrosive [1]
(iv) flammable [1]
- 2 (a) acidic [1]
- (b)
- | soil sample | colour | pH | acidic, alkaline or neutral |
|-------------|-------------|----|-----------------------------|
| A | orange | | acidic |
| B | | 11 | |
| C | light green | | neutral |
| D | | 5 | |
- ½ mark each
round down [3]
- (c) D [1]
- 3 citric acid, icing sugar (any order)
carbon dioxide, fizzing [4]
- 4 (a) thick layer of rock [1]
(b) crust [1]
(c) 6 or 7 [1]
(d) dust cloud, lava flowing down, trees killed, buildings destroyed, lives lost (2 marks for description)
(1 mark for effect) [3]

AVAILABLE
MARKS

8

5

4

6

		AVAILABLE MARKS
5	(a) electrons	[1]
	(b) chlorine	[1]
	(c) 17	[1]
	(d) 18	[1]
	(e) neutrons	[1]
	(f) 7 accept halogens	[1]
		6
6	(a) A	[1]
	(b) C	[1]
	(c) B	[1]
		3
7	(a) chromatography	[1]
	(b) ink would run/pencil will not run	[1]
	(c) A and D both required	[1]
	(d) A, D and E	[1]
		4
8	(a) 5 points correct 2 marks 3,4 points correct 1 mark line of best fit 1 mark	[3]
	(b) mass decreases with time graph levels off	[2]
	(c) magnesium carbonate is in excess	[1]
	(d) carbon dioxide is a gas it escapes or leaves the flask	[2]
	(e) bung would allow pressure to build up/ danger of explosion	[1]
		9
Total		45