



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] | 6 |
| | (b) chlorine | [1] | |
| | (c) 17 | [1] | |
| | (d) 18 | [1] | |
| | (e) neutrons | [1] | |
| | (f) 7 accept halogens | [1] | |
| 6 | (a) A | [1] | 3 |
| | (b) C | [1] | |
| | (c) B | [1] | |
| 7 | (a) chromatography | [1] | 4 |
| | (b) ink would run/pencil will not run | [1] | |
| | (c) A and D both required | [1] | |
| | (d) A, D and E | [1] | |
| 8 | (a) 5 points correct 2 marks 3,4 points correct 1 mark line of best fit 1 mark | [3] | 9 |
| | (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] | |
| | | Total | 45 |