



Rewarding Learning

**General Certificate of Secondary Education
2011– 2012**

Science: Single Award (Modular)
Chemical Patterns and our Environment
Module 3
Foundation Tier
[GSC31]
TUESDAY 28 FEBRUARY 2012
11.00 am–11.45 am

**MARK
SCHEME**

		AVAILABLE MARKS	
1	(a) (i) corrosive sign drawn	[1]	6
	(ii) radioactive/radiation/nuclear/named source	[1]	
	(iii) greater visual impact understood internationally	[2]	
	(b) (i) magnesium hydroxide	[1]	
	(ii) alkaline	[1]	
2	(a) sweeteners – alternative to sugar colourings – makes food look attractive anti-oxidants – stops fats from going off	[3]	6
	(b) E	[1]	
	(c) hyperactivity/migraines/allergies	[2]	
3	(a) purple	[1]	6
	(b) indicator	[1]	
	(c) (i) pH probe/meter	[1]	
	(ii) more accurate	[1]	
	(d) lime is alkaline/a base/basic/soil is acidic lime neutralises the soil/removes acid	[2]	
4	(a) magma moves up from the centre it comes out of the crater it flows down the sides as lava it can cause loss of life any 2	[2]	6
	(b) giant wave destroys buildings causes destruction of habitats loss of life any 2	[1]	
		[2]	
	(c) Richter scale	[1]	

		AVAILABLE MARKS
5	(a) moved on water surface	[1]
	(b) hydrogen	[1]
	(c) it melted/potassium caught fire immediately	[1]
	(d) potassium hydroxide	[1]
		4
6	(a) A – neutron	[1]
	B – shell	[1]
	C – electron	[1]
	(b) protons/neutrons either order	[2]
	(c) 2, 6 arrangement – 1 mark for each correct shell	[2]
(d) protons: 20, electrons: 20, neutrons: 20	[3]	
		10
7	(a) displacement	[1]
	(b) 3/none	[1]
	(c) copper metal	[1]
	(d) copper came out of the solution	[1]
	(e) zinc	[1]
	(f) copper displaced the silver the silver was deposited on the strip	[2]
		7
Total		45