



Rewarding Learning

**General Certificate of Secondary Education
2010–2011**

Science: Single Award (Modular)
Chemical Patterns and our Environment
Module 3

Foundation Tier

[GSC31]

TUESDAY 9 NOVEMBER 2010, AFTERNOON

**MARK
SCHEME**

			AVAILABLE MARKS	
1	(a)	Milk of magnesia – Magnesium hydroxide [1] Lemon juice – Citric acid [1] Vinegar – Ethanoic acid [1]	[3]	7
	(b)	Indicator	[1]	
	(c)	(i) Radioactive (ii) Flame (iii) Flammable	[1] [1] [1]	
2	(a)	(i) 7 (ii) hydrochloric acid (iii) weak alkali	[1] [1] [1]	5
	(b)	Any two from Lime is an alkali [1] Lower acidity/it neutralises [1] the <i>acid</i> in the soil [1]/ Soil is acidic/it takes away the acid [1]	[2]	
	(c)	Diagram showing 2,6 for electrons	[1]	
3	(a)	A proton B shell C electron	[1] [1] [1]	5
	(b)	7	[1]	
	(c)	Diagram showing 2,6 for electrons	[1]	
4	(a)	A C B D Any two in correct order [1]	[2]	6
	(b)	Mixture rises/bubbles up	[1]	
	(c)	Carbon dioxide [1]	[1]	
	(d)	Thermal decomposition [1] neutralisation [1]	[2]	
5	(a)	(i) C	[1]	

			AVAILABLE MARKS
	(ii) B	[1]	
	(iii) noble gases	[1]	
	(iv) alkali metals	[1]	
	(b) It would float Move around surface quickly Give off gas/hissing sound Disappear/dissolve Any three Do not accept catch fire or burn	[3]	7
6	(a) More people indoors [1] or implied People asleep/slow to react [1] Any two	[2]	
	(b) Effects are too weak [1] Small, not much damage [1] Not recognised as an earthquake [1] Any two	[2]	
	(c) 5	[1]	
	(d) Earth is made up of plates which move [1] When they rub past each other (they cause friction) [1] It happens below the ground/no advanced warning/cannot detect stresses set up [1]	[3]	
	(e) It could save lives or implied	[1]	9
7	(a) Chromatography	[1]	
	(b) The black dye contains E102 and E142 [1] It does not contain E122 [1] It does contain an illegal dye [1] Black dye contains 3 dyes [1] Any three	[3]	
	(c) Animals may suffer Animals cannot say no It avoids harming humans It helps to find out if the dye is safe Any two Answer must include at least one advantage and one disadvantage	[2]	6
Total			45