



*Rewarding Learning*

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

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**Science: Single Award (Modular)**  
Chemical Patterns and our Environment  
Module 3  
Foundation Tier  
[GSC31]  
**MONDAY 21 MAY 2012**  
**9.15 am–10.00 am**

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**MARK  
SCHEME**

			AVAILABLE MARKS
<b>1</b>	<b>(a) (i)</b> barium chloride	[1]	5
	<b>(ii)</b> hydrochloric acid	[1]	
	<b>(iii)</b> flammable	[1]	
	<b>(b)</b> easier to see/understand internationally recognised some people cannot read <i>any two</i>	[2]	
<b>2</b>	<b>(a)</b> fish fingers – freezing tea leaves – drying baby onions – pickling in vinegar	[3]	5
	<b>(b)</b> bacteria, fungi	[2]	
<b>3</b>	<b>(a) (i)</b> the noble gases are very unreactive	[1]	5
	<b>(ii)</b> helium, neon or any other	[2]	
	<b>(b) (i)</b> potassium	[1]	
	<b>(ii)</b> hydrogen	[1]	
<b>4</b>	<b>(a) (i)</b> fossil	[1]	6
	<b>(ii)</b> sedimentary	[1]	
	<b>(iii)</b> metamorphic	[1]	
	<b>(b)</b> slate sedimentary basalt	[3]	
<b>5</b>	<b>(a)</b> shell, electron, neutron	[3]	7
	<b>(b)</b> 3	[1]	
	<b>(c)</b> protons and neutrons (either order)	[1]	
	<b>(d)</b> lithium Li	[2]	
<b>6</b>	<b>(a) (i)</b> copper, unreactive <i>must have copper for 2nd mark</i>	[2]	5
	<b>(ii)</b> hydrogen	[1]	
	<b>(b)</b> too reactive, safety reason	[2]	

			AVAILABLE MARKS
<b>7</b>	(a) burette, pipette ( <b>not</b> teat), syringe	[1]	6
	(b) 14	[1]	
	(c) 25 (cm <sup>3</sup> )	[1]	
	(d) neutralisation	[1]	
	(e) sodium chloride, water (either order)	[2]	
<b>8</b>	(a) to improve appearance/more attractive/appealing	[1]	6
	(b) hyperactivity, allergies, migraines, cancer <i>any two</i>	[2]	
	(c) difference of opinion	[1]	
	one for use	[1]	
	one for avoiding	[1]	
<b>Total</b>			<b>45</b>