



*Rewarding Learning*

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

---

**Science: Double Award (Modular)**

Using Materials and Understanding Reactions

End of Module Test

Foundation Tier

[GDB01]

**TUESDAY 28 FEBRUARY 2012**

**11.00 am–11.45 am**

---

**MARK  
SCHEME**

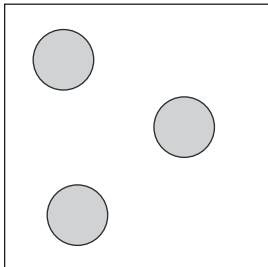
- 1 (a) (i) Harmful/irritant [1]  
(ii) Toxic/poisonous [1]
- (b) Students tick the boxes beside the following statements.  
They are eye-catching  
they warn of danger  
they can be understood by people who cannot read [2]  
All 3 correct 2 marks  
2 correct 1 mark  
1 correct 0 marks

- 2 (a)
- | Object                   | Reason                  |
|--------------------------|-------------------------|
| Melamine kitchen worktop | good conductor of heat  |
| Iron bridge              | malleable               |
| Lead roofing             | high strength           |
| Aluminium saucepan       | high resistance to heat |
| Ceramic floor tile       | very hard               |
- 4 correct 3 marks  
3 correct 2 marks  
2 correct 1 mark [3]

- (b) (i) Ceramic/floor tiles [1]  
(ii) aluminium/lead/iron Ignore mention of object [1]

- 3 (a) (i) Mixture [1]  
(ii) Compound [1]
- (b) Paint is not soluble in water [1]

AVAILABLE MARKS
4
5
3

			AVAILABLE MARKS
4	(a) Ca	[1]	3
	(b) H <sub>2</sub> O	[1]	
	(c) H <sup>+</sup>	[1]	
5	(a) (i) Zinc chloride	[1]	4
	(ii) Sulphuric acid	[1]	
	(b) (i) base	[1]	
	(ii) salt	[1]	
6	(a) B evaporating/boiling	[1]	3
	D condensing	[1]	
	(b) 	[1]	
	3 or more particles well spaced No apparent pattern		
7	(a) Water which does not form a lather <b>with soap</b>	[1]	4
	(b) Good taste/good for heart/tanning/beer/good for teeth and bones NOT healthier unqualified; NOT contains calcium ions	[1]	
	(c) Scale in pipes/scum <b>with soap</b> /wastes soap	[1]	
	(d) Ion exchange/adding washing soda/boiling	[1]	
8	(a) (i) NaHCO <sub>3</sub>	[1]	4
	(ii) FeSO <sub>4</sub>	[1]	
	(b) 6	[1]	
	(c) Zinc carbonate	[1]	

			AVAILABLE MARKS
<b>9</b>	(a) Number of protons and neutrons [1] in (the nucleus of) an atom [1] or in the nucleus unless wrongly qualified	[2]	
	(b) protons 15	[1]	
	electrons 15	[1]	
	neutrons $31 - 15 = 16$	[1]	5
<b>10</b>	(a) 2,8 arrangement for sodium	[1]	
	2,8 arrangement for oxygen	[1]	
	(b) $\text{Na}_2\text{O}$	[1]	3
<b>11</b>	(a) metal oxide, non-metal oxide	[2]	
	(b) hydrogen oxide/any suitable e.g. carbon monoxide	[1]	
	(c) alkalis	[1]	4
<b>12</b>	(a) nitrogen	[1]	
	(b) as temperature increases solubility decreases [1] for (all) gases [1] [2]	[2]	
	(c) there is less oxygen (dissolved) in the water	[1]	4
<b>13</b>	(a) electrolysis	[1]	
	(b) cathode NOT negative	[1]	
	(c) oxygen, carbon dioxide	[2]	4
<b>Total</b>			<b>50</b>