Rewarding Learning

General Certificate of Secondary Education
2011–2012

Science: Double Award (Modular)

Using Materials and Understanding Reactions
End of Module Test
Foundation Tier

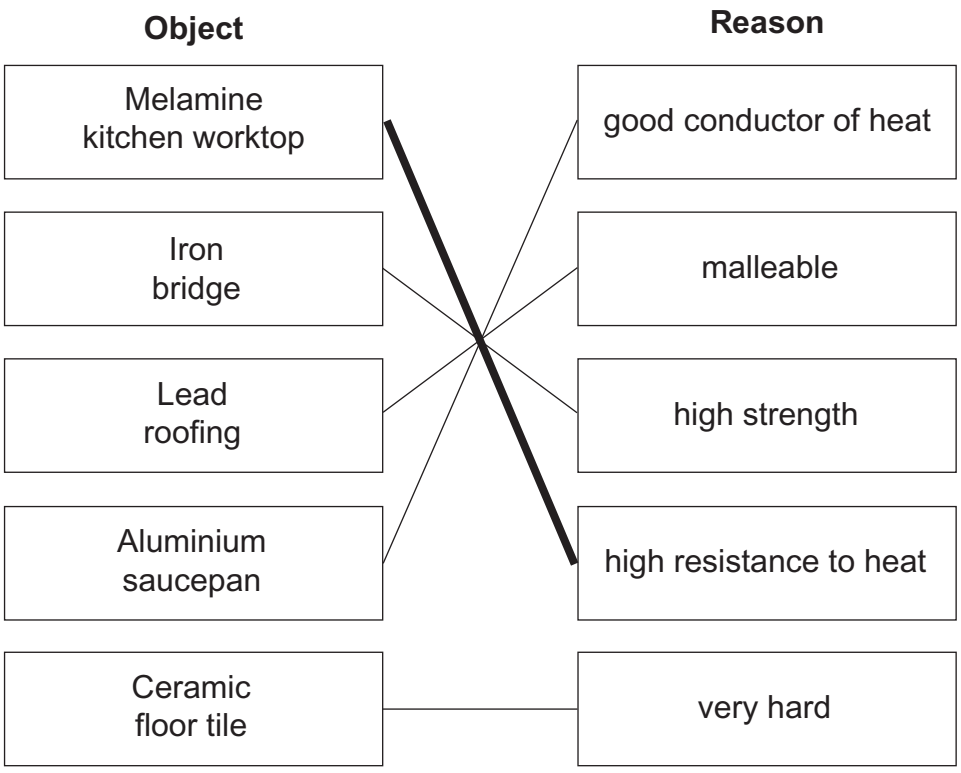
[GDB01]

TUESDAY 28 FEBRUARY 2012
11.00 am–11.45 am

MARK SCHEME

		AVAILABLE MARKS
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		4

2 **(a)**



4 correct 3 marks
3 correct 2 marks
2 correct 1 mark [3]

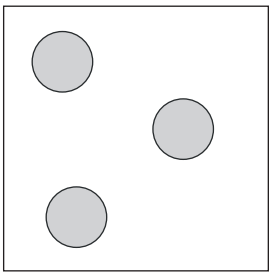
(b) **(i)** Ceramic/floor tiles [1]

(ii) aluminium/lead/iron Ignore mention of object [1] — 5

3 **(a)** **(i)** Mixture [1]

(ii) Compound [1]

(b) Paint is not soluble in water [1] — 3

			AVAILABLE MARKS
4	**(a)** Ca	[1]	
	(b) H_2O	[1]	
	(c) H^+	[1]	3
5	**(a)** **(i)** Zinc chloride	[1]	
	(ii) Sulphuric acid	[1]	
	(b) **(i)** base	[1]	
	(ii) salt	[1]	4
6	**(a)** B evaporating/boiling D condensing	[1] [1]	
	(b)  3 or more particles well spaced No apparent pattern	[1]	3
7	**(a)** Water which does not form a lather **with soap**	[1]	
	(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 **with soap**/wastes soap	[1]	
	(d) Ion exchange/adding washing soda/boiling	[1]	4
8	**(a)** **(i)** $NaHCO_3$	[1]	
	(ii) $FeSO_4$	[1]	
	(b) 6	[1]	
	(c) Zinc carbonate	[1]	4

				AVAILABLE MARKS
9	**(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
10	**(a)**	2,8 arrangement for sodium	[1]	
		2,8 arrangement for oxygen	[1]	
	(b)	Na_2O	[1]	3
11	**(a)**	metal oxide, non-metal oxide	[2]	
	(b)	hydrogen oxide/any suitable e.g. carbon monoxide	[1]	
	(c)	alkalis	[1]	4
12	**(a)**	nitrogen	[1]	
	(b)	as temperature increases solubility decreases [1] for (all) gases [1]	[2]	
	(c)	there is less oxygen (dissolved) in the water	[1]	4
13	**(a)**	electrolysis	[1]	
	(b)	cathode NOT negative	[1]	
	(c)	oxygen, carbon dioxide	[2]	4
			Total	**50**