



Rewarding Learning

General Certificate of Secondary Education
2010–2011

Science: Single Award (Modular)

Materials and their Management

Module 4

Foundation Tier

[GSC41]

FRIDAY 12 NOVEMBER 2010, AFTERNOON

**MARK
SCHEME**

			AVAILABLE MARKS	
1	(a)	flexible [1], long lasting [1], waterproof [1]	[3]	4
	(b)	oil	[1]	
2	(a)	UV light/forged bank notes [1] breathalyser/drink driving [1] chromatography/forged cheque [1] microscope/fibres [1]	[4]	7
	(b) (i)	D A C B 4 correct [2] any two in correct position [1]	[2]	
	(b) (ii)	carbon powder is black (or implied)	[1]	
3	(a) (i)	4 correct [2], 3 correct [1]	[2]	7
	(a) (ii)	2007 and 2008	[1]	
	(a) (iii)	wound dressings/plasters/sterilising spray	[1]	
	(a) (iv)	smaller	[1]	
	(b) (i)	smart	[1]	
	(b) (ii)	change in intensity of light (or implied)	[1]	
4	(a)	biodegradable cardboard grass	non-biodegradable copper polythene bricks aluminium	7
		$6 \times \left[\frac{1}{2}\right]$ (round down)	[3]	
	(b)	rot/decay/broken down [1] by microbes [1]	[2]	
	(c)	running out of landfill sites [1] idea it doesn't rot [1] or different types/have to be sorted [1] difficult to recycle [1] (must have cause → effect)	[2]	
5	(a) (i)	transport (or implied)	[1]	5
	(a) (ii)	crushed/smashed up/broken up	[1]	
	(a) (iii)	saves resources/saves energy/saves landfill sites/not biodegradable	[1]	
	(b)	cost less to produce/saves energy/idea of safer/lighter/easier to mould Any two	[2]	

			AVAILABLE MARKS			
6	(a)	(i) tar	[1]	7		
		(ii) the boiling point of the fraction increases/gets higher	[1]			
		(iii) heating oil/used as fuel/in lamps	[1]			
	(b)	(i) made up of carbon and hydrogen [1] only [1]	[2]			
		(ii) carbon dioxide/CO ₂	[1]			
		(iii) leads to global warming/produces greenhouse gases	[1]			
7	(a)	(i) C	[1]	8		
		(ii) B	[1]			
		(iii) B	[1]			
		(iv) same volume of water/soap solution/boiled for 2 minutes	[1]			
	(b)	(i) calcium sulphate/magnesium sulphate/ calcium chloride/magnesium chloride or correct formulae	[1]			
		(ii) calcium carbonate [1], water [1] (or correct symbols)	[2]			
		(iii) add washing soda/ion exchange/distillation/sodium carbonate	[1]			
		Total				45