



*Rewarding Learning*

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

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**Science: Single Award (Modular)**

Electricity, Waves and Communication  
Module 5

Foundation Tier

**[GSC51]**

**THURSDAY 24 FEBRUARY 2011, MORNING**

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**MARK  
SCHEME**

- 1 (a) (i) ammeter **not** units/ampmeter [1]  
2A [1]
- (ii) voltmeter [1]  
5V [1]
- (b) (i) series [1]
- (ii) correct symbols for battery/bulb/switch = [2] for all three  
**complete** circuit = [1] 2 symbols = [1] [3]
- 2 (a) [1] for each correct line [3]
- (b) frequency/audible/noise ([1] each) [3]
- (c) age/loud noise/job (any **two** = [1] each) [2]
- (d) earplugs/earmuffs/no loud sounds/ear defenders [1]
- 3 (a) for safety [1]
- (b) a fuse should be connected to the earth wire [1]
- (c) too small [1]
- (d) [2]

Name	Colour
	blue
live	

AVAILABLE  
MARKS

8

9

5

			AVAILABLE MARKS		
4	(a) (i)	4 points correct = [2], 3/2 points = [1]	[2]		
	(ii)	increase % covered causes a decrease in voltage/electricity (or vice versa)	[1]		
	(iii)	different amounts of sunlight = [1] time of day/weather/clouds/rain = [1]	[2]		
	(b) (i)	radio/X-rays/microwaves/UV/infra-red (I.R.)/gamma	[1]		
	(ii)	travel at same speed/speed of light/carry energy/transverse waves/travel in vacuum (any <b>one</b> )	[1]		7
5	(a) (i)	will not run out/refilled by rain/always be rain	[2]		
	(ii)	more rain in mountains; faster/better fall for water; v-shaped valley	[1]		
	(iii)	wind/waves/solar/sun/biomass (any <b>two</b> )	[1]		
	(b)	flooding/damages habitats	[2]		
	(c)	water in turns the blades of turbine [1] a magnet [1] a coil of wire [1] (any <b>three</b> = [1] each)	[3]		
6	(a)	implied hard surfaces in bathroom/implied soft in bedroom = [1] reflectors absorbers = [1] echoes = [1]	[3]		
	(b)	$6 - 4 = 2\text{ s}$ [1] $1500 = d/2$ / $d = 1500 \times 2$ [2] Divide time or speed by 2 [1] $1500 \times 4$ } $1500 \times 6$ } 1 $d = 1500\text{ m} = [4]$	[4]		7
			<b>Total</b>		<b>45</b>