



Rewarding Learning

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

Science: Single Award (Modular)

Electricity, Waves and Communication

Module 5

Foundation Tier

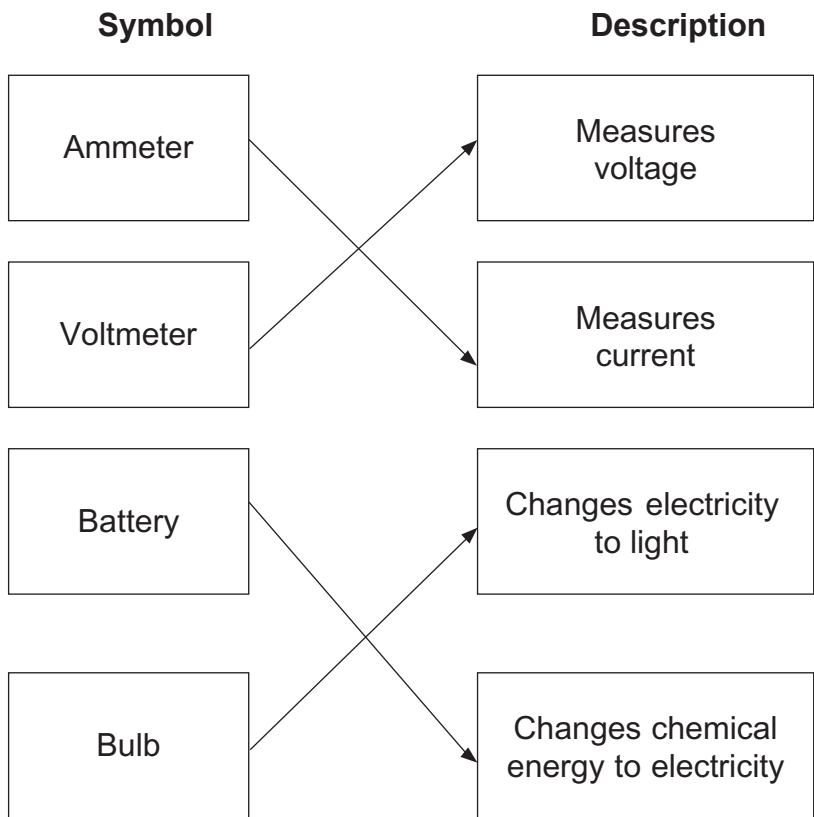
[GSC51]

MONDAY 14 NOVEMBER 2011

1.30 pm–2.15 pm

**MARK
SCHEME**

1 (a)



All correct = [3]
 3/2 correct = [2] 1 correct = [1] [3]

(b) (i) correct symbols [1] ammeter in series [1]
 voltmeter in parallel [1]
 deduct 1; for reversed symbols/incomplete circuit

(ii) $5/2 = [1]$ $2.5 = [2]$ [2]

(iii) ohm or symbol [1]

2 (a) (i) will not run out [1]

(ii)

Renewable	Non-renewable
hydroelectric	Coal
solar	Nuclear
wind	Oil

$\frac{1}{2}$ mark each round down [3]

AVAILABLE MARKS

9

		AVAILABLE MARKS	
	(b) (i) Does not produce greenhouse gases	[1]	7
	(ii) Produces nuclear waste	[1]	
	(iii) Only works during the day	[1]	
3	(a) (i) vibrate	[1]	7
	(ii) amplitude	[1]	
	(iii) age	[1]	
	(b) ultrasound	[1]	
	(c) (i) echo	[1]	
	(ii) soft materials = [1] or named absorb/take in sound [1]		
4	(a) (i) cancer/tumour/damage brain cells	[1]	7
	(ii) 100,000 users/lots of users [1] 20 to 30 years/long period of time [1]		
	(b) (i) microwaves	[1]	
	(ii) cell	[1]	
	(c) (i) infra red/visible light	[1]	
	(ii) electricity/current/electrons	[1]	
5	(a) all points correct [2] 6/5 points correct [1] correct line [1]	[3]	9
	(b) (i) increasing magnet speed gives more current [1] up to a maximum current [1]		
	(ii) 1. less current	[1]	
	2. more current	[1]	
	(c) produce light even when stopped/go fast for bright light (up hill) slow dim light	[1]	
	safer/or implied	[1]	

- 6 (a) In summer UV level is above 3 or implied [1]
- (b) (i) particles **vibrate** at right angles/particles move up and down [1]
to the direction of wave travel [1]
- (ii) Any **two** from:
all carry energy/can travel through a vacuum/same speed in
vacuum/speed of light [2]
- (iii) longitudinal [1]

Total

**AVAILABLE
MARKS**

6

45