



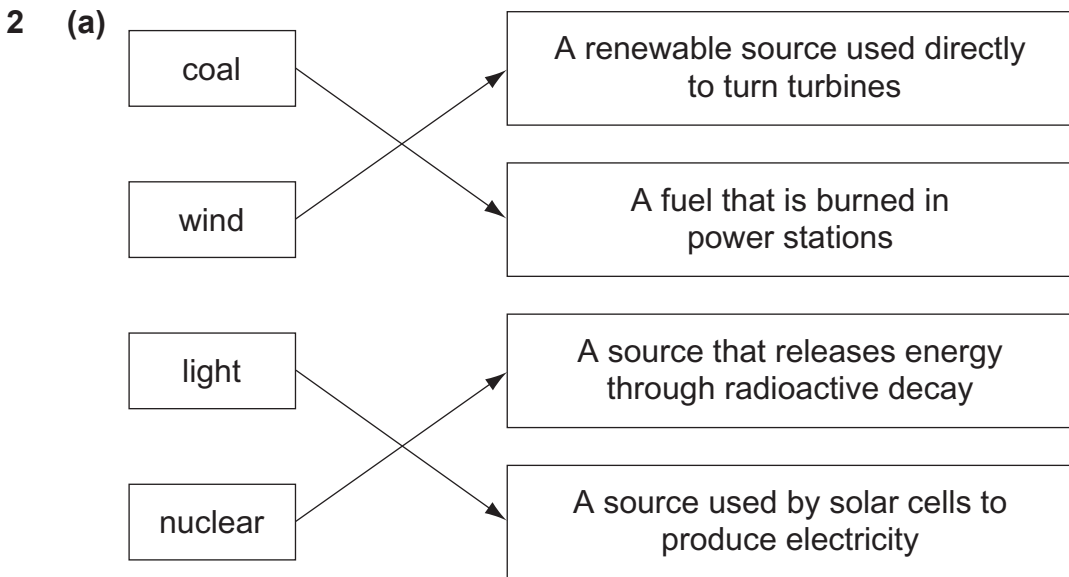
Rewarding Learning

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

Science: Single Award (Modular)
Electricity, Waves and Communication
Module 5
Foundation Tier
[GSC51]
THURSDAY 24 MAY 2012
9.15 am–10.00 am

**MARK
SCHEME**

- 1 (a) bulbs are brighter/one out, rest stay lit/bigger current flowing/easier to replace blown bulb/more bulbs could be lit/all have battery voltage (any 2 = 1 mark each) [2]
- (b) (i) 6V [1]
- (ii) brighter/increase [1]
- (iii) bigger current/bigger voltage/hotter bulbs/more power more energy (any 2 = 1 mark each) could blow *NOT* more electricity will fuse/blow up [2]
- (c) (i) ammeter [1]
- (ii) amp [1]



All lines correct = 3 marks
 2/3 correct = 2 marks 1 correct = 1 mark [3]

- (b) (i) 44p [1]
- (ii) from May 07 to Jan 08 [1]
- (iii) will run out/cannot be replaced *NOT* can't be used again [1]
- (iv) carbon dioxide/greenhouse gases/air pollution/sulphur dioxide causes global warming/greenhouse effect/acid rain *NOT* wrong symbol [2]

AVAILABLE MARKS	
8	
8	

				AVAILABLE MARKS	
3	(a)	(i)	6×3 [1] 18 [2]	[2]	7
		(ii)	watt	[1]	
	(b)	(i)	cancer/tumour	[1]	
		(ii)	hold phone further away/loudspeaker/phone not under pillow hands free kit/text instead of calling/ reduce length of calls <i>NOT</i> use phone less	[1]	
		(c)	(i) B	[1]	
	(ii)	(read) processed by computers/less interference/clearer/better quality <i>NOT</i> better signals/more accurate/more reliable/more information	[1]		
4	(a)	(i)	retina	[1]	7
		(ii)	cornea	[1]	
		(iii)	bend/change direction	[1]	
	(b)	concave diverges/spread rays out	[2]		
	(c)	(i)	short sight	[1]	
		(ii)	too thick/too converging/too strong	[1]	
5	(a)	(i)	$120/0.8$ [1] $240/0.8$ or $120/0.4$ [2]	[3]	8
		(ii)	300 [3]		
	(b)	(i)	(sound with a) frequency [1] too high for humans to hear/above 20 kHz [1]	[2]	
		(ii)	scanning/fish finding/cleaning delicate equipment/lithotripsy/ map seabed/dog training/mosquito	[1]	
	(c)	(i)	transverse	[1]	
		(ii)	(caused by) vibrations/carry energy	[1]	

6	(a) 6.8p	[1]	AVAILABLE MARKS
	(b) renewables cost more to build/have cheaper fuel costs cost more to run/total cost is more (any 2 = 1 mark each)	[2]	7
	(c) power station is shut down/waste removed site restored to former state (any 2 = 1 mark each) expensive to get rid of waste waste is radioactive for a long time/concrete over/no radiation leaks	[3]	
	(d) ruins habitats/eyesore = ugly/inhibits shipping lanes/not many suitable areas	[1]	
	Total		45