



Rewarding Learning

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

Science: Single Award (Modular)

Electricity, Waves and Communication
Module 5

Higher Tier

[GSC52]

THURSDAY 24 FEBRUARY 2011, MORNING

**MARK
SCHEME**

			AVAILABLE MARKS	
4	(a)	$4/11.5 = [1]$ $0.347/0.3 = [2]$ 0.35	[2]	
	(b)	5 points correct = [2], 4/3 points = [1] correct line = [1]	[3]	
	(c)	type/thickness of wire/temperature (any two)	[2]	
	(d)	increased length = increased resistance = lower current (any one)	[1]	
	(e)	repeat/average	[1]	9
5	(a)	(i) conventional from +ve to -ve = [1]	[1]	
		(ii) opposite direction = [1] (-ve to +ve) flow of electrons = [1] electrons -ve charge = [1]	[3]	
	(b)	1282 units = [1] 19230 pence or £192.30 = [1] (need units)	[2]	6
6	(a)	(i) convex/converging	[1]	
		(ii) refracted/bent [1] inwards/converge together/meet focus on retina [1]	[2]	
		(iii) long sight	[1]	
	(b)	light enters reflector at/above critical angle [1] critical angle = angle at which TIR occurs/42 degrees for glass [1] = angle at which refraction doesn't occur [1] = angle below which refraction occurs [1] with TIR no refraction occurs [1] (any three = [1] each)	[3]	7
			Total	45