

## PHY1H

## Question 2

question	answers	extra information	mark
2(a)(i)	UVC	reason only scores if UVC is chosen	1
	it is absorbed / stopped by the ozone layer	accept atmosphere / air for ozone layer accept does not reach the Earth	1
2(a)(ii)	increases the risk	accept more likely to get (skin) cancer / sun burn accept more people likely to be harmed (by UV radiation)	1
	due to higher levels of UV (radiation) <b>or</b> less UV (radiation) absorbed	specific reference to UVA / all three increasing negates this mark	1
2(b)(i)	(type of) surface	accept snow and sand accept place / location do <b>not</b> accept position (of dummy head)	1
2(b)(ii)	repeat measurements / investigation <u>and</u> take average(s) / mean	both parts required repeat measurements / experiment is insufficient	1

Question 2 continues on the next page

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## Question 2 continued

question	answers	extra information	mark
2(b)(iii)	<p><b>snow</b> the intensity (facing the Sun) is higher, (so more must be reflected)</p> <p><b>or</b> intensity hardly reduces when facing away from the Sun (so most UV entering sensor must be reflected)</p>	<p>mark is for reason, only scores if snow chosen</p> <p>accept results are higher (for snow than sand)</p> <p>accept white surfaces are good reflectors</p> <p>accept it's white</p>	1
2(c)	<p><b>No</b> for all wavelengths shown some UV is reaching the sensor</p>	<p>this mark point can score even if yes is chosen</p> <p>accept some UV is passing through (the goggles)</p> <p>accept the reading should be zero (but it isn't)</p>	1 1
<b>Total</b>			<b>9</b>

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**Question 5**

question	answers	extra information	mark
5(a)	C or 0.18 mm		1
5(b)	0.6 (m)	allow 1 mark for correct substitution and/or transformation or 1 mark for changing frequency to Hz answer 600 gains 1 mark	2
5(c)	creates an alternating current	accept 'ac' for alternating current accept alternating voltage	1
	with the same frequency as the radio wave	accept signal for radio wave  accept it gets hotter for 1 mark provided no other marks scored	1
5(d)	X-rays cannot penetrate the atmosphere  or  X-rays are absorbed (by the atmosphere) before reaching Earth	accept atmosphere stops X-rays  do <b>not</b> accept atmosphere in the way  <u>ignore</u> explanations	1
<b>Total</b>			<b>6</b>