

Question number	Answer	Notes	Marks
9 (a)	correct voltmeter symbol; voltmeter connected in parallel with resistor;		2
(b)	light dependent resistor;	allow LDR	1
(c) (i)	9(.0) (V);		1
(ii)	substitution OR rearrangement; evaluation; e.g. $9.0 = \text{current} \times 4500$ OR $\text{current} = \text{voltage} / \text{resistance}$ (current =) 0.0020 (A)	allow ecf from (i) allow 0.002 (A)	2
(iii)	substitution OR rearrangement; evaluation in Ω ; conversion to $k\Omega$; e.g. $3.0 = 0.0020 \times \text{resistance}$ OR $\text{resistance} = \text{voltage} / \text{current}$ (resistance =) 1500 (Ω) (resistance =) 1.5 ($k\Omega$)	allow ecf from (ii)	3
(d)	lamp should be connected in parallel with component X / LDR; resistance of component X increases when it gets dark; voltage across component X increases / becomes greater than 10V when it gets dark;		3

Total for Question 9 = 12 marks