Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic : 10_Electricity

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Name of the Student:_____
Max. Marks : 27 Marks **Time : 27 Minutes**

Mark Schemes

Q1.

Question number	Answer	Additional guidance	Mark
	substitution (1) $\frac{3.4\ (\times 10^{29})}{2.0\ (\times 10^{30})}$ evaluation (1) 0.17	 award 1 mark for 1.7 to any incorrect power of 10 ignore any units given award full marks for the correct answer without working	**(2)**

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Q2.

Question number	Answer	Additional guidance	Mark
(a)	Rearrangement of equation (1) $Q = \frac{E}{V}$ Substitution including change of unit (1) 64 MJ = 64 000 000 J $Q = \frac{64000000}{330}$ Answer and unit (1) Q = 190 000 (C)	allow answers that round to 190 000, e.g. 193 939 if the calculation is worked throughout without changing MJ to J, then maximum of 2 marks unless unit matches quantity	(3)

Question number	Answer	Additional guidance	Mark
(b)	Rearrangement (1) $I = \frac{Q}{t}$ Conversions and substitution (1) 190 (kC) = 190 000 (C) 8 hours = 8 × 3600 (s) = 28 800 (s) $I = \frac{190000}{28800}$ Evaluation (1) = 6.6 (A)	ecf from (a) (6.5972) if 193 939 used then accept 6.7	(3)

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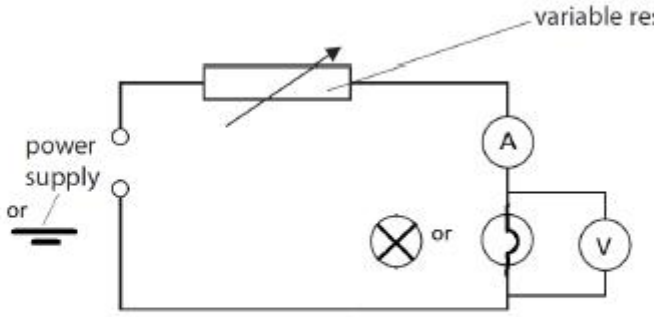
Q3.

Question number	Answer	Mark
(i)	C	(1)

Question number	Answer	Additional guidance	Mark
(ii)	Equating the same variable in both equations (1) $\Delta Q = m \times c \times \Delta\theta = P \times t$ Rearrangement (1) $t = \frac{(m \times c \times \Delta\theta)}{P}$ Substitution and evaluation (1) $t = \frac{(1 \times 4200 \times 77)}{3500}$ = 92 s	allow $\Delta\theta$ seen as 95 − 18 92.4 evaluation must be seen to at least 2 s.f. at some point in the working	(3)

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Q4.

Question number	Answer	Mark
	 ammeter with correct symbol, in series with the lamp (1) voltmeter with correct symbol, in parallel with the lamp (1) valid method of changing the potential difference (1)	(3)

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Q5.

Question Number	Answer	Acceptable answers	Mark
(a)(i)	**B**	.	**(1)**

Question Number	Answer	Acceptable answers	Mark
(a)(ii)	substitution V = 0.039 x 185 (1) evaluation 7.215 (which is about 7.2) (V) (1)	Substitution 7.2 = I x 185 (1) transposition I = 7.2 ÷ 185 (1)	**(2)**

Question Number	Answer	Acceptable answers	Mark
(a)(iii)	**C** (same as)		**(1)**

Question Number	Answer	Acceptable answers	Mark
(a)(iv)	An explanation to include The resistance (of the LDR) changes Greater resistance when in the dark	 LDR has less resistance in the light	**(2)**

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Question Number		Indicative Content	Mark
QWC	***(b)**	An explanation linking some of the following. • less current is used at night-time • Resistance (of LDR or circuit) would increase with less ambient light • Higher resistance will allow less current (in the circuit) (ORA) • Less current in circuit means less energy from the battery • Less power required in the dark ORA for light conditions • Less current means less energy transferred (per second) • Total energy transferred is less during night time (than it would otherwise have been) due to the higher resistance of the LDR	**(6)**
Level	**0**	No rewardable content	
1	**1 - 2**	• A limited explanation linking the light level to EITHER resistance OR current. eg. It increases the resistance in the dark. • the answer communicates ideas using simple language and uses limited scientific terminology • spelling, punctuation and grammar are used with limited accuracy	
2	**3 - 4**	• A simple explanation linking the light level to TWO of resistance, current, energy. eg. At night-time its resistance would increase. This would reduce the current from the battery • the answer communicates ideas showing some evidence of clarity and organisation and uses scientific terminology appropriately • spelling, punctuation and grammar are used with some accuracy	
3	**5 - 6**	• A detailed explanation linking the light level to resistance AND current, AND energy. e.g. At night-time the resistance would be more. This would reduce the current and mean that the battery will not have to supply as much energy. • the answer communicates ideas clearly and coherently uses a range of scientific terminology accurately • spelling, punctuation and grammar are used with few errors	

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