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

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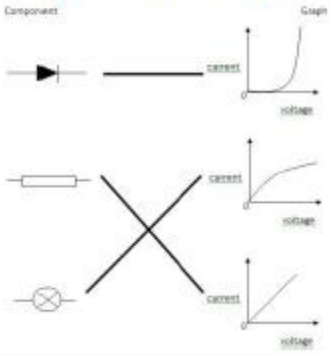
Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Mark Schemes

Q1.

Question Number	Answer	Acceptable answers	Mark
	Connecting lines as shown  (2)	all 3 for 2 marks allow one mark if one or two lines correct more than one line from any component or to any graph is incorrect, so a maximum of 1 mark is possible	**(2)**

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Q2.

Question Number	Answer	Acceptable answers	Mark
	Conversion to correct units: 120 seen anywhere (1) Substitution: 0.08 x 120 (1) Evaluation: 9.6 (C) (1) accept 10 C	Allow full marks for correct answer with no working seen. 0.08 x 2 gains 1 mark for sub of their time into correct eq'n 0.16 (C) gains 2 marks (only mistake is not converting time to seconds) accept any power of 10 error for 2 marks e.g. 960 (C)	**(3)**

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Q3.

Question Number	Answer	Acceptable answers	Mark
(i)	(correct) voltmeter symbol seen anywhere (1) voltmeter symbol connected in parallel / across heater (1)	accept symbols that are attempts at circles. accept line through symbol accept for second mark: any symbol or diagram of meter or box provided it is just from one side of the heater to the other	**(2)**

Question Number	Answer	Acceptable answers	Mark
(ii)	Substitution (into V = I x R) V = 0.56 x 15 (1) Evaluation = 8.4 (V) (1)	Allow full marks for correct answer with no working shown accept any power of 10 error for 1 mark e.g. 84 (V) or 0.84 (V) scores 1 mark accept rounding to 8 (V) for both marks	**(2)**

Question Number	Answer	Acceptable answers	Mark
(iii)	Substitution Energy = 6.0 x 0.40 x 30 (1) Evaluation 72(J) (1)	accept any power of 10 error for 1 mark e.g. 720 or 7200 (J) scores 1 mark Allow full marks for correct answer with no working shown	**(2)**

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Question Number	Answer	Acceptable answers	Mark
(iv)	An explanation linking any two from: (there is the same) current in the (variable) resistor/ wires (1) (so) energy is {transferred/used/goes to/ lost/ wasted} in the {(variable) resistor/wires} (1) (so) {(variable) resistor / wires} gains/loses thermal energy (1)	 accept there is a p.d. across the (variable) resistor or {p.d./voltage} across heater is different to battery {p.d./voltage} ignore references to voltmeter and heater ignore 'energy wasted as heat' without qualification accept {resistor/wires} {heats/warms} (up) gains 1 mark energy lost in (variable) {resistor/ wires} as heat gains both marks	**(2)**

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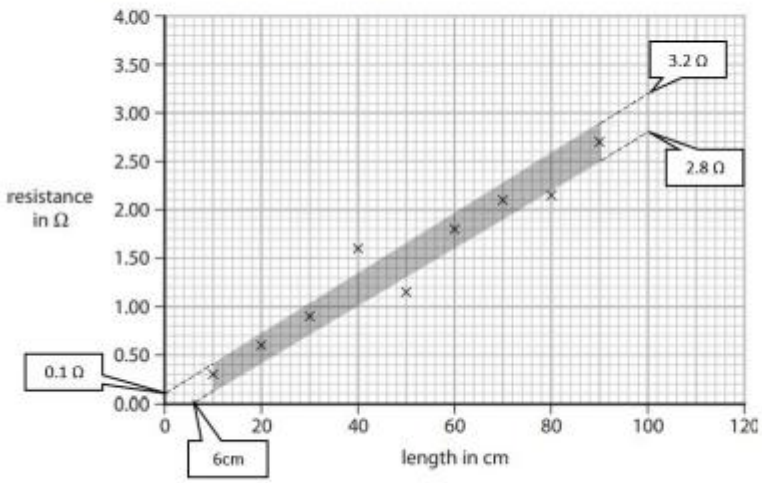
Q4.

Question number	Answer	Additional guidance	Mark
(i)	one from (1) metre rule / metre stick / ruler / (measuring) tape / crocodile clip / other clip / wire cutters / pliers / sliding contact jockey / more (iron) wire	 accept scissors ignore additional electrical devices such as ohmmeter / multimeter	**(1)** **AO3**

Question number	Answer	Additional guidance	Mark
(ii)	(ii) Figure 4 shows a graph of the results.  	accept any straight line within the shaded range shown judge by eye. ignore extrapolation	**(1)** **AO2**

Question number	Answer	Additional guidance	Mark
(iii)	any number between 2.7 and 3.3 inclusive	allow ecf from (ii) ±0.1 Ω	**(1)** **AO2**

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Question number	Answer	Additional guidance	Mark
(iv)	explanation linking any **two** from: (variable) resistor increases the resistance (of the circuit) (1) (therefore) keeps the current constant / small(er) (1) because **current** increases temperature of the (iron) wire (1)	accept flow of electrons / charge for current reduces current / limits the current ignore slows the current / charge accept current heats up (iron) wire accept for two marks: adjust variable resistor to keep current constant / small	**(2)** **AO1**

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