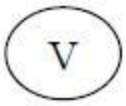
**Name of the Student**:_____
**Max. Marks : 21 Marks** **Time : 21 Minutes**

Mark Schemes

**Q1.**

| | Answer | Acceptable answers | Mark |
|---|---|---|---|
| **(a)** | ☒ D a variable resistor | | **(1)** |
| **(b)(i)** |   connected in parallel with lamp (1) | recognisable symbol such as a box with letter V inside or box with the word voltmeter inside it accept voltmeter across both lamp and ammeter | **(1)** |
| **(b(ii)** | Substitution R = 6.0 / 0.26 (1) Evaluation = 23 (1) | An answer which rounds to 23 Give full marks for correct answer no working | **(2)** |
| **(c)(i)** | point correctly plotted at 2.0, 0.14 to within half a small square (1) smooth curve of best fit connecting all given points within half a small square (1) | Judge curve by eye. If more than one line present then ignore any that appear to be erased or deleted. Ignore any part of line which goes beyond given points. If plotted point is incorrect then allow ecf for line | **(2)** |
| **(c)(ii)** | a description including **two** of the following:<br>• current increases as voltage increases (1)<br>• current is not proportional to the pd (1)<br>• gradient gets less (1) | Allow reverse argument positive correlation (between them ) graph is not a straight line not in equal steps current does not increase as much (as it gets higher) accept resistance has increased with increase in current for two marks | **(2)** |
| **(c)(iii)** | a suggestion to | to break the circuit | **(2)** |

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| | | | |
|---|---|---|---|
| | include: there is still a current (when control is at min position) (1) make the battery last longer (1) | to switch **the current** off accept flow of<br><br>electricity/charge/electrons for current<br>battery / energy would be drained /used up/ wasted<br>otherwise accept reverse arguments<br>ignore reference to power / volts | |

**Q2.**

| Question Number: | Answer | Additional guidance | Mark |
|---|---|---|---|
| | a comment that makes reference to any three of the following points:<br><br>• idea that the current increases with the p.d. /voltage (1)<br><br>• until (current) reaches a constant value (1)<br><br>• the current is not directly proportional to p.d. (1)<br><br>• uses idea that the values do not go up in equal steps / does not show doubling | (staying) at 0.13(A) | **(3)**<br>AO 3 2a<br>AO 3 2b |

**Q3.**

| | Answer | Acceptable answers | Mark |
|---|---|---|---|
| | substitution (1) | 48.1 | **(2)** |

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| | | | |
|---|---|---|---|
| | 3.7 x 13 evaluation (1) 48 (C) | Correct answer with no calculation scores 2 marks | |

**Q4.**

| | Answer | Acceptable answers | Mark |
|---|---|---|---|
| **(i)** | point correctly plotted at 2.0, 0.14 to within half a small square (1) smooth curve of best fit connecting all given points within half a small square (1) | Judge curve by eye. If more than one line present then ignore any that appear to be erased or deleted. Ignore any part of line which goes beyond given points. If plotted point is incorrect then allow ecf for line | **(2)** |
| **(ii)** | a description including **two** of the following:<br>• current increases as voltage increases (1)<br>• current is not proportional to the pd (1)<br>• gradient gets less (1) | Allow reverse argument positive correlation (between them ) graph is not a straight line not in equal steps current does not increase as much (as it gets higher) accept resistance has increased with increase in current for two marks | **(2)** |
| **(iii)** | a suggestion to include: there is still a current (when control is at min position) (1) make the battery last longer (1) | to break the circuit to switch **the current** off accept flow of<br><br>electricity/charge/electrons for current battery / energy would be drained /used up/ wasted otherwise accept reverse arguments ignore reference to power / volts | **(2)** |

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