TEST 1 – MARK SCHEME

SECTION B

B4

(a) (i) Circuit diagram drawn with correct symbols (ignore positions of voltmeter and ammeter for this mark). *(1)*
Voltmeter and ammeter correctly positioned. *(1)* [2]

(ii) Change length and measure V and I. *(1)*
Reference to $R = \frac{V}{I}$. *(1)*
Suitable intervals and full 1.60 m length used. *(1)* [3]
All the above cannot be awarded from the table.

(b) Clear headings (length or l / current or I / voltage or pd or V / resistance or R) and correct units on all columns. *(1)*
Values of voltage; current; given in increasing values of length. *(1)*
Resistance calculated correctly. *(1)*
All data given to 2 d.p. maximum. *(1)* [4]

(c) Graph of resistance against length plotted with axes labelled and correct units given on both axes. *(1)*
Suitable scale chosen so that all data points occupy at least half the graph paper. *(1)*
All points plotted correctly to within ½ small square division. *(1)*
1 good line of best fit consistent with the data. *(1)*
2 good distinct lines of best fit drawn showing difference in gradient. *(1)* [5]

(d) Distance correctly read from the graph. *(1)*
Unit and value given to the nearest mm. *(1)* [2]