



**QUESTION 2**

a) E = 3.0 V (2.9 – 3.1)

c) I = 0.12 (0.10 - 014)

 V = 2.6 (2.4 – 2.8)

d)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Length L (cm) | 100 | 70 | 60 | 50 | 40 | 20 |
| I (A) | 0.12 | 0.19 | 0.20 | 0.24 | 0.28 | 0.42 |
| P.d (V) | 2.6 | 2.5 | 2.4 | 2.35 | 2.3 | 2.0 |
| E – V (v) |  |  |  |  |  |  |

* *Current (I) 0.5 marks x 6 = 3 marks, Error of 0.02*
* *Pd (V) 0.5 marks x 6 = 3 marks, Error of 0.2*
* *E – V = 1 mark (all values must be correct)*

e) Graph Axis – 1 mark

 Scale – 1 mark

 Plotting – 2 marks

 Line – 1 mark (straight line with a positive gradient)

f) Slope - change in x 1 mk

 - change in y 1 mk

 - answer 1 mk

g) internal resistance (r) = slope 1 mk

 Answer 1 mk