

(d) For the circuit provided it can be shown that

$$E = I(R + r)$$

Where  $R$  = resistance of the combination of resistors

$r$  = internal resistance of the power supply

Using the above equation and the definition of resistance, which should be stated, show that

$$r = R\left(\frac{E}{V} - 1\right) \quad [3]$$

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(e) (i) From your results calculate a value for  $r$  using **each** of your results obtained in (c). [2]

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(ii) Hence determine an average value for the internal resistance of the cell. [1]

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