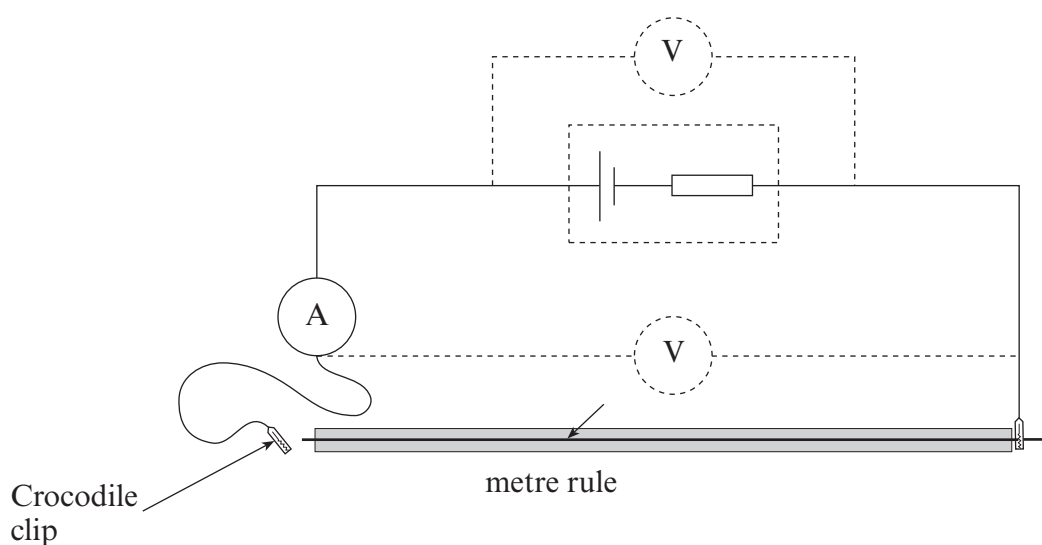


## TEST 1 – MARK SCHEME

## SECTION B

## TASK B4 (45 minutes)

You are going to determine the internal resistance of a cell, and the resistivity of a wire using the circuit shown below. This circuit has already been set up for you.



- (a) (i) Add to the circuit diagram a voltmeter to find the e.m.f. of the cell. [1]

*Voltmeter indicated across cell [accept across cell and ammeter] - see above*

- (ii) Now add the voltmeter to the circuit to measure the e.m.f.  $E$ . [1]

$$E = \dots\dots\dots$$

*e.m.f. to 2 d.p. with units: volt(s)/V*

Ask your supervisor to check the position of the voltmeter before continuing

Correct	Incorrect
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*N.B. There is no penalty for incorrectly connecting the voltmeter.*

- (iii) State the resolution of the voltmeter, and using this as your uncertainty, calculate the percentage uncertainty in your value for the e.m.f.  $E$ . [2]

*Resolution = 0.01 V (1)*

*% uncertainty correctly calculated (1)*