SECTION B

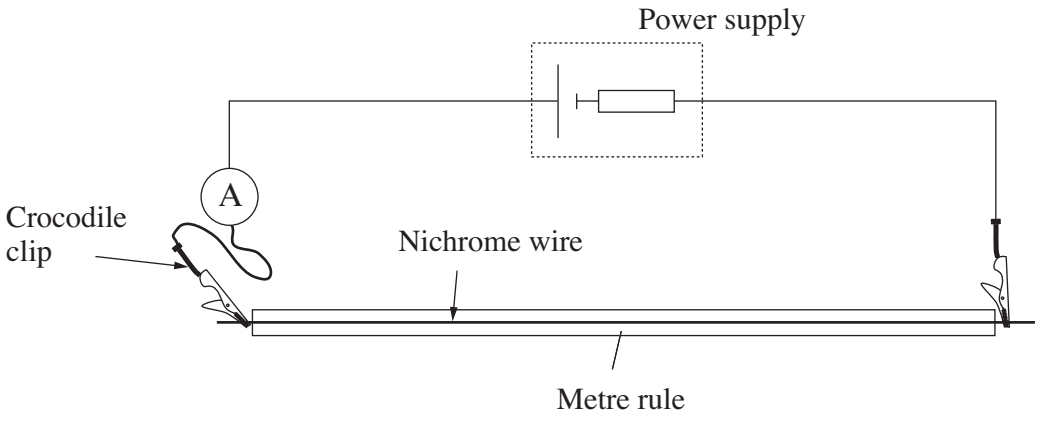
TASK B4

The candidates will be expected to investigate the circuit below.

Test 1

Apparatus required:

1 × power supply constructed from two 1.5 V 'D' type cells and a 3.9 Ω resistor in series. The components of the power supply should be concealed from the candidates. The resistor may be soldered to the cells – this will require the use of a soldering iron with a high thermal capacity bit.
1 × ammeter of resolution ± 0.01 A
2 × crocodile clips
0.27 mm diameter (32swg) nichrome wire
1 × metre ruler
1 × voltmeter of resolution ± 0.01 V
electrical leads to complete the circuit



The circuit should be set up for the candidates as shown. The Nichrome wire can be taped to the metre ruler with a few centimetres overhanging at each end to allow crocodile clips to be attached.
The voltmeter should have leads so that candidates can attach it to the circuit to measure the e.m.f. of the power supply. Crocodile clips should be provided for this purpose if necessary. If crocodile clips are required these should be made available.

Test 2

The apparatus required is as for **Test 1** except that 0·38 mm diameter (28 swg) nichrome should be used.