

**SECTION B****TASK B4**

Candidates will investigate two wires of different materials that are joined together.

**For both tests allow candidates access to the apparatus for the full 45 minutes if required.**

**Test 1:**

- Joined wire with ends labelled X and Y
- Switch
- Ammeter – resolution  $\pm 0.01$  A
- Voltmeter – resolution  $\pm 0.01$  V
- 1.5 V battery
- Connecting wires and crocodile clips
- Metre ruler – resolution  $\pm 1$  mm
- Callipers – resolution  $\pm 0.01$  mm

The joined wire can be made from 1.05 m of 30 swg constantan wire joined firmly (soldered) to 0.55 m of 30 swg nichrome wire to make a joined wire 1.60 m long. The joined wire is to be concealed by a 10 cm length of earth sleeving which is available from any electrical supplier. The joined wire should be mounted firmly e.g. on a piece of batten which allows distances to be measured. The free end of the constantan wire should be clearly labelled X and the free end of the nichrome wire labelled Y.

