

NEATH PORT TALBOT COLLEGE COLEG CASTELL NEDD PORT TALBOT

School of Maths & Science Science Practical

Investigating Resistors in Series and Parallel

◆ Aim

To investigate the total resistance of various resistor combinations.

◆ Introduction

In this experiment, you will investigate how the total resistance of different combinations of resistors depends on their arrangement. Your results will enable you to comment on the validity of using the equations for resistors in series and parallel.

◆ Safety

Control Measures

- You are reminded of the need of good laboratory practice in order to maintain a safe working environment.

Hazards

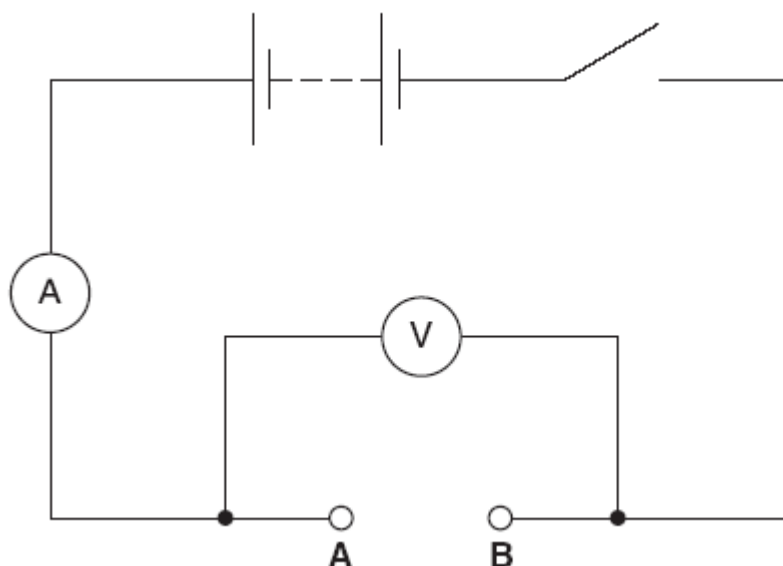
Electrical hazard.

Take care with circuits. Switch off power before connecting and disconnecting the circuit.



◆ **Equipment provided**

Battery pack or power supply of fixed e.m.f.
three identical resistors
ammeter
voltmeter
switch
connecting leads



1. Set up the circuit shown above. Connecting one resistor between A and B

2. Record the potential difference, V between **A** and **B** and the current I .

$$V = \underline{\hspace{10cm}} \text{ V}$$

$$I = \underline{\hspace{10cm}} \text{ A}$$

3. Calculate the resistance R .

$$R = \underline{\hspace{10cm}}$$

4. It is possible to connect up to three resistors in a number of different combinations. Connect at least six different combinations of resistors between **A** and **B** and repeat steps **2** and **3**. Record your results in a table. Include sketches of resistor arrangements and values of R .

