

GCSE Physics B (Twenty First Century Science)
J259/04 Depth in physics (Higher Tier)

Question Set 12

1

Lyla and Alex are investigating two identical light-dependent resistors (LDRs). A torch is used as a light source by Lyla, and Alex decides to use a table lamp.

Each light source is placed above the LDR.

The resistance of the LDR is determined for different numbers of identical sheets of tracing paper placed on the LDR, as shown in **Fig. 3.1**.

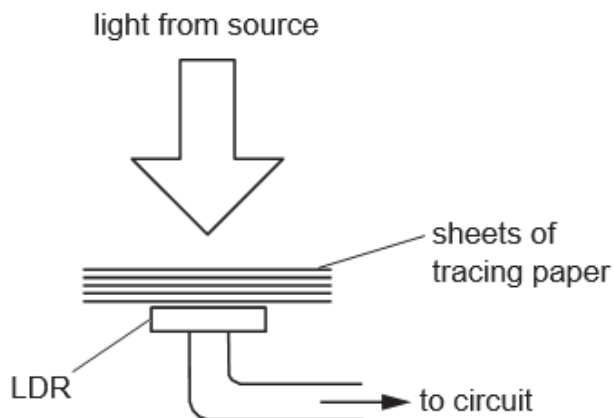


Fig. 3.1

Lyla's and Alex's results are shown in **Fig. 3.2**.

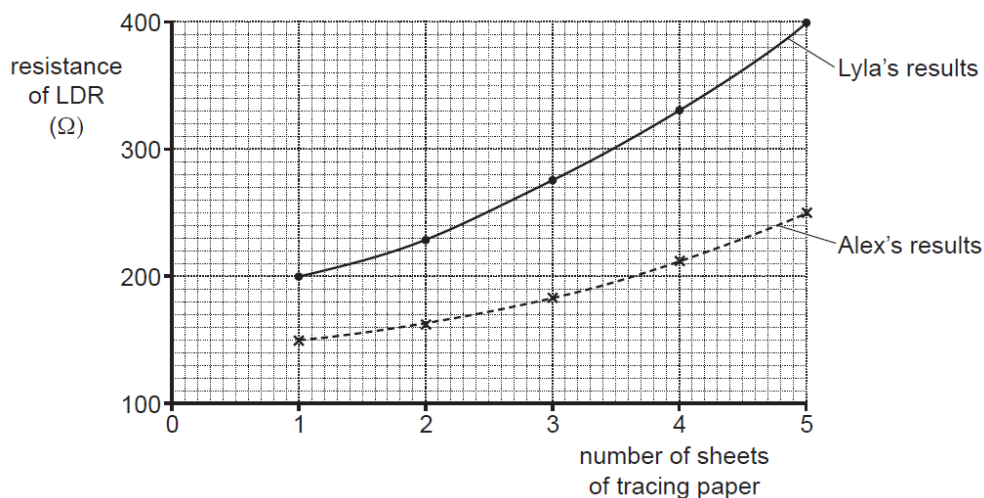


Fig. 3.2

(a) Use **Fig. 3.2** to explain how the **light intensity** affects the resistance of the LDR.

- (b) The LDR is connected to a cell, an **ammeter** and a **voltmeter**.

The meter readings from the ammeter and voltmeter are used to determine the resistance of the LDR.

Complete **Fig. 3.3** to show the likely circuit connected by Lyla and Alex.



Fig. 3.3

- (c) Lyla and Alex worked in different parts of the laboratory to conduct their investigations. [2]

Both used identical sheets of tracing paper and identical LDRs but their results were different.

- (i) Suggest **one** thing that must be kept the same to get identical results. [1]
- (ii) Suggest **one** improvement that needs to be made to get identical results. [1]

Total Marks for Question Set 12: 6

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