Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic :10_ Electricity And Circuits

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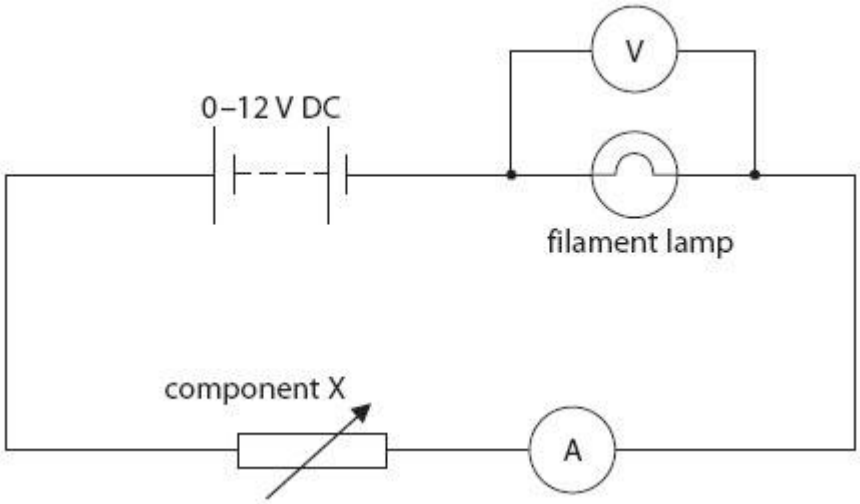
Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Q1.

A student sets up an experiment to measure the potential difference (voltage) across a filament lamp.
She changes the current through the lamp.
The diagram shows the circuit she used.



Complete the sentence by putting a cross (☒) in the box next to your answer.

(i) The component X in the circuit diagram is a

(1)

- ☒ **A** diode
- ☒ **B** fixed resistor
- ☒ **C** thermistor
- ☒ **D** variable resistor

(ii) The meter that measures potential difference is

(1)

- ☒ **A** in parallel with the power supply
- ☒ **B** in parallel with the lamp
- ☒ **C** in series with the lamp
- ☒ **D** in series with the component X

(iii) Describe how the student should increase the current in the lamp.

(2)

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Q2.

A torch has a battery and a bulb.

The current in its circuit is 0.08 A.

Calculate the amount of charge passing a point in this circuit in 2 minutes.

(3)

charge = ... coulombs

Q3.

Figure 12 shows some of the apparatus that students use to determine the resistance of a piece of iron wire.

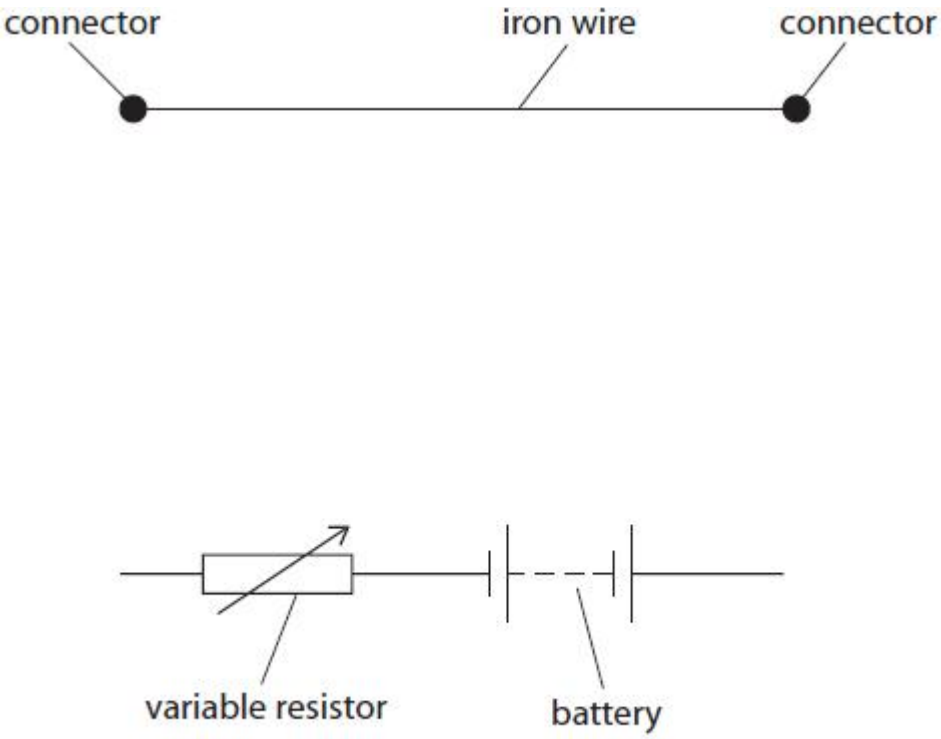

Figure 12

The students extend the investigation to determine how the resistance of the iron wire changes with its length.

(i) Give the name of **one** additional piece of apparatus the students would need.

(1)

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(ii) Figure 13 shows a graph of the results.

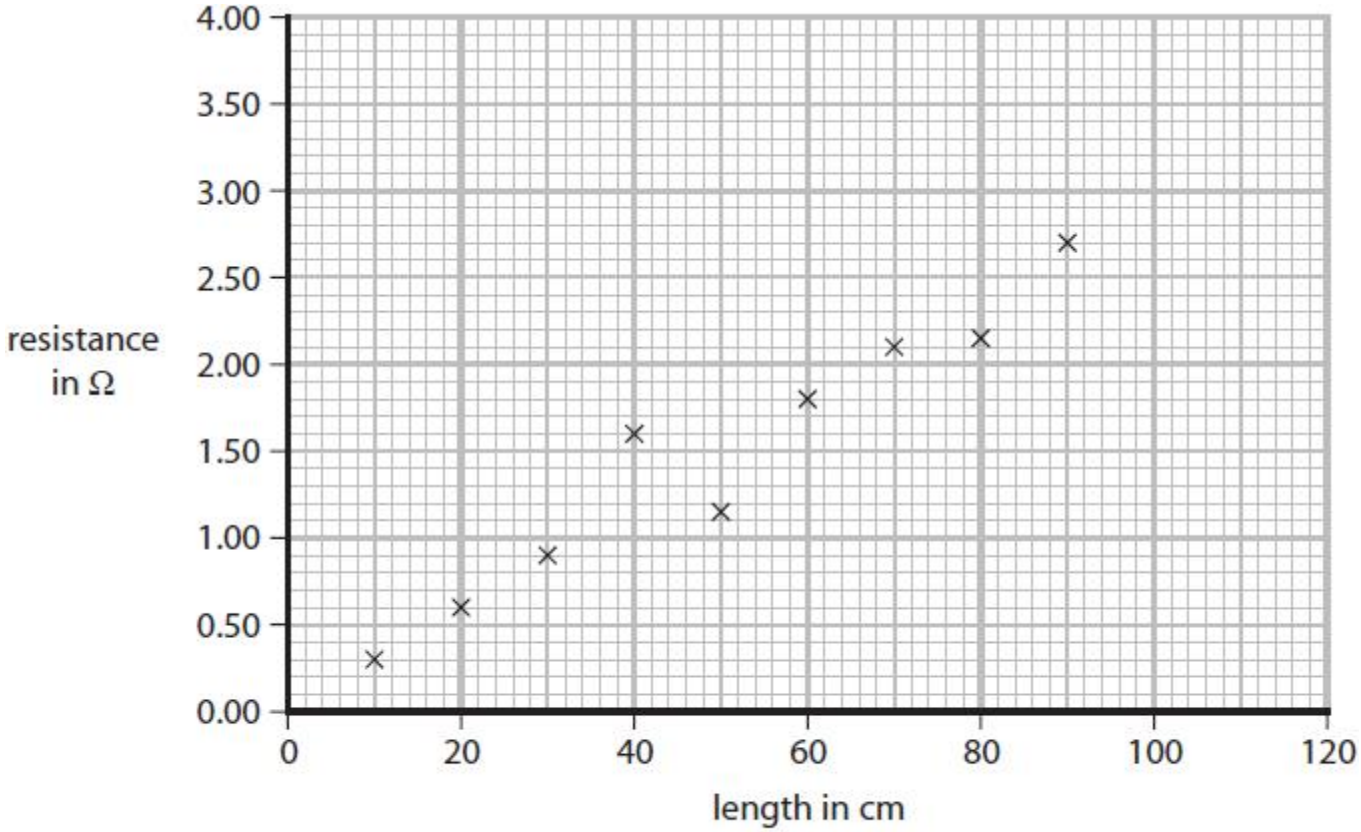

Figure 13

Draw a straight line of best fit on Figure 13.

(1)

(iii) Use Figure 13 to estimate the resistance of a 100 cm length of the iron wire.

(1)

resistance = ... Ω

(iv) The variable resistor shown in Figure 12 is used to prevent the iron wire from becoming too hot.

Explain how the variable resistor is used to prevent the iron wire from becoming too hot.

(2)

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(Total for question = 5 marks)

Q4.

Figure 10 shows a battery connected to a filament lamp.

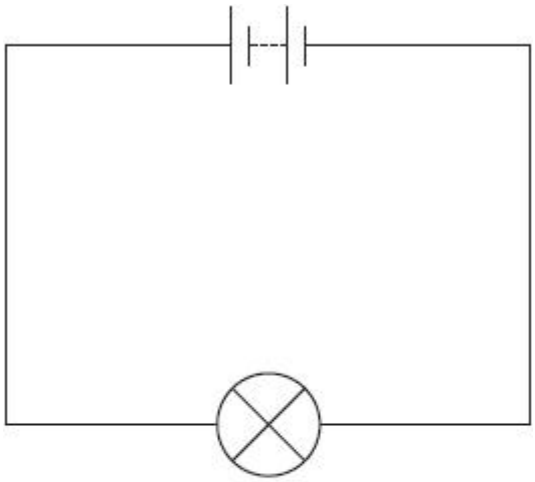

Figure 10

Explain, in terms of the movement of charged particles, how energy is transferred from the battery, through the lamp, to the surroundings.

(6)

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(Total for question = 6 marks)