Practice Question Set For GCSE
**Subject : Physics**
**Paper-2 Topic : 10_Electricity**

Merit Minds
www.merit-minds.com
Exam Preparation and Free Resources

**Name of the Student**:_____
**Max. Marks : 22 Marks** **Time : 22 Minutes**

Q1.

A student investigates how the resistance of a thermistor varies with temperature.

Figure 7 shows a graph of the results of this investigation.

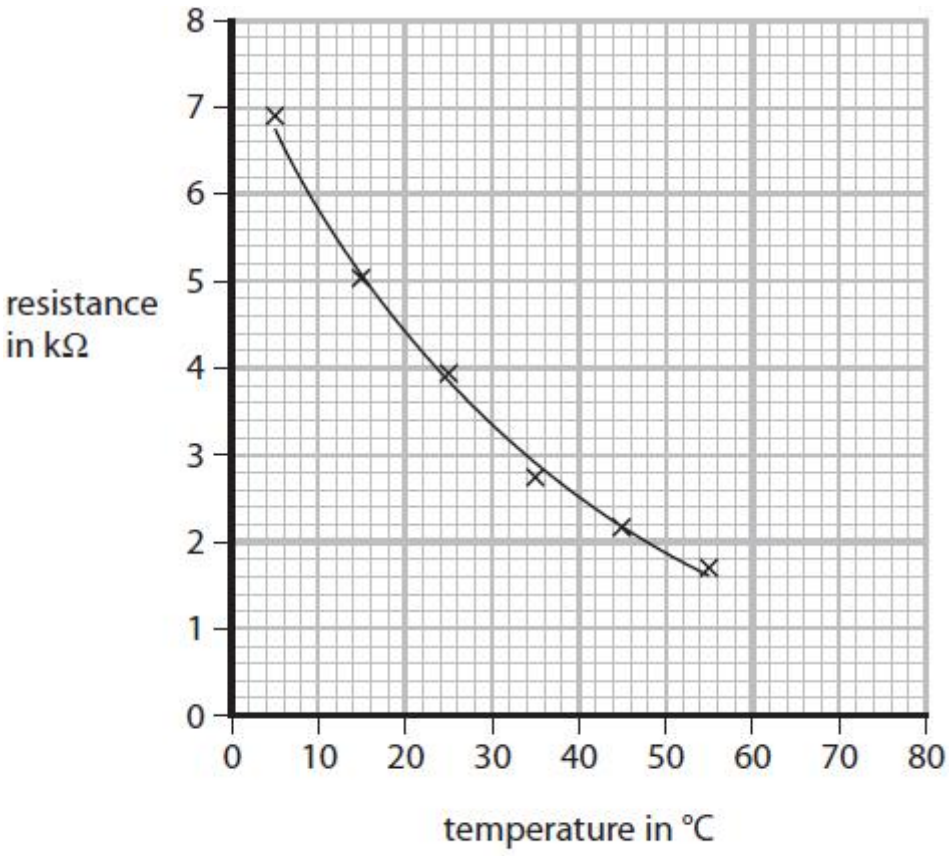


**Figure 7**

(i) Describe how the resistance of this thermistor varies with temperature.

**(2)**

.....

.....

.....

.....

(ii) Draw the tangent to the curve at a temperature of 30 °C, to find the rate of change of resistance with temperature at 30 °C.

State the unit.

**(3)**

rate of change of resistance with temperature at 30 °C = ..... unit .....

**(Total for question = 5 marks)**

Q2.

A student is given a low voltage power supply and 1 m of resistance wire.

The student uses these and other pieces of equipment to measure the resistance of just 50 cm of the resistance wire.

Draw a diagram of the circuit that the student should use.

Your circuit diagram should identify the pieces of equipment that the student uses.

**(3)**

**(Total for question = 3 marks)**

Q3.

Figure 1 shows some of the apparatus that students use to determine the resistance of a piece of iron wire.

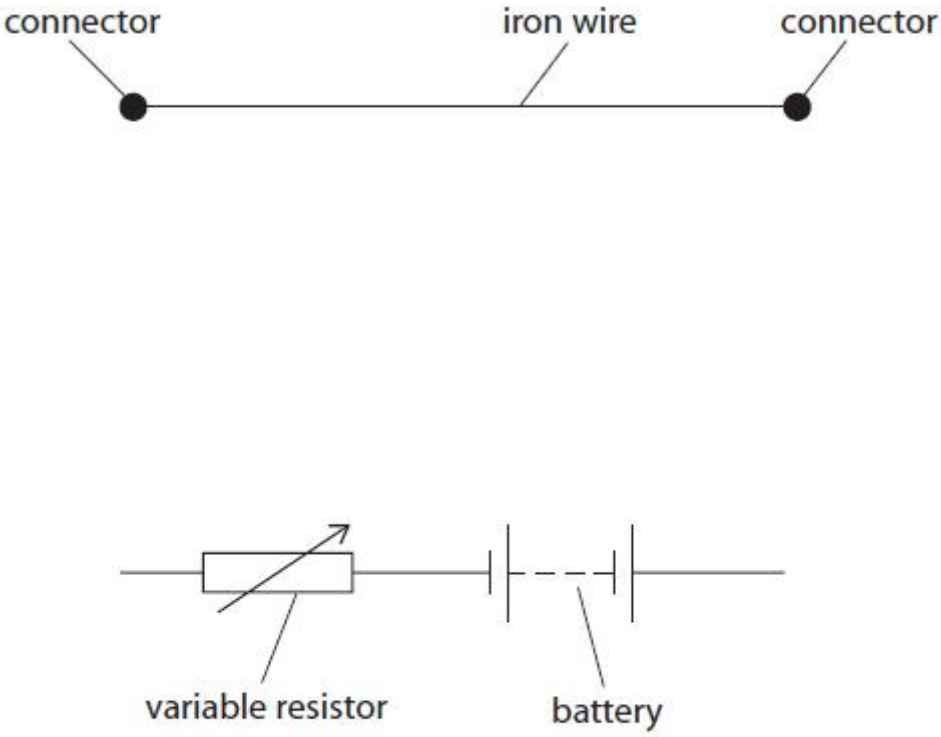


**Figure 1**

Add connecting wires, a voltmeter and an ammeter to complete the circuit in Figure 1 so that the students can determine the resistance of the piece of iron wire.

**(Total for question = 2 marks)**

Q4.

A man monitors how much money he spends on electricity.
He uses a device which calculates the cost of electrical energy used.
He connects his 2.9 kW electric kettle to the 230 V mains supply.

(i) Calculate the current in the kettle element.

**(3)**

current = ..... A

(ii) The device shows that in one week the total cost of the electrical energy used by the kettle is 97 p.
1kW h of electrical energy costs 17 p.

Calculate the length of time for which the kettle has been switched on during the week.

**(3)**

time = ..... hours

Q5.

A resistor is connected to a power supply.

The potential difference across the resistor is 6.0 V.

(i) Which of these corresponds to a potential difference of 6.0 V?

**(1)**

- ☒ **A** 6.0 joules per ohm
- ☒ **B** 6.0 amps per coulomb
- ☒ **C** 6.0 joules per coulomb
- ☒ **D** 6.0 amps per ohm

(ii) The resistor remains connected for a period of time.

The current in the resistor is 200 mA.
A total charge of 42 C flows through the resistor.
Calculate, in minutes, the time taken for this amount of charge to flow through the resistor.

**(3)**

time = ..... minutes

(iii) Calculate the total energy transferred by the 6.0 V power supply when a charge of 42 C flows through the resistor.

**(2)**

energy = ..... J

**(Total for question = 6 marks)**