Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic: Electricity (Standard demand)

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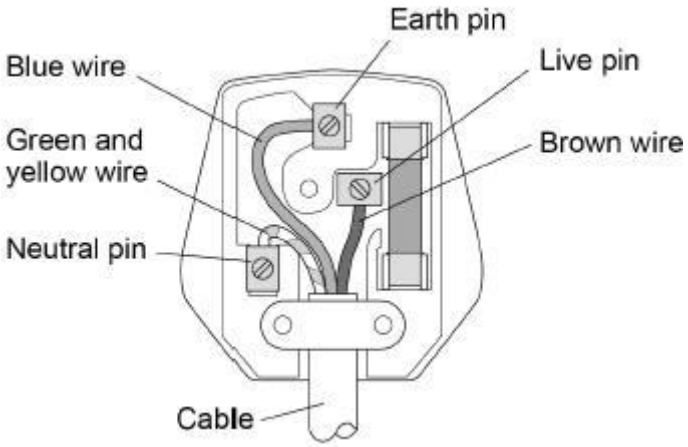
Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Q1.

The diagram below shows the inside of a plug.



(a) The plug is **not** wired correctly.

What should be done to connect the wires in the plug correctly?

_____

_____

(1)

The correctly wired plug and cable connects a washing machine to the mains electricity supply.

(b) Give the potential difference and frequency of the mains electricity supply in the UK.

The potential difference is _____ V

The frequency is _____ Hz

(2)

(c) The washing machine is switched on.

What is the potential difference between the neutral wire and the earth wire?

Potential difference = _____ V

(1)

(d) The plug has a fuse.

Draw the circuit symbol for a fuse in the space below.

(1)

The washing machine has a metal case.

A fault causes the live wire to make an electrical connection with the metal case of the washing machine.

(e) The earth wire is **not** connected to the metal case of the washing machine.

Explain why it would not be safe for a person to touch the metal case.

_____

_____

_____

_____

_____

_____

(2)

(f) The earth wire is now connected to the metal case of the washing machine.

Explain why it would now be safe for a person to touch the metal case, even if the live wire touches the metal case.

_____

_____

_____

_____

_____

_____

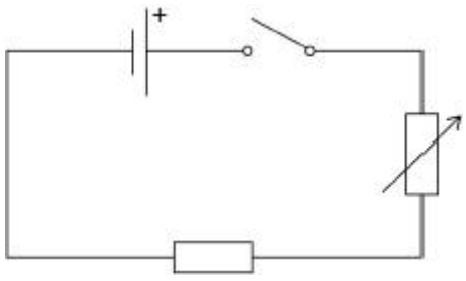
(2)

(Total 9 marks)

Q2.

A student investigated how the current in a resistor varies with the potential difference across the resistor.

The diagram shows part of the circuit used.



(a) The student connected an ammeter and a voltmeter into the circuit.

What is the correct way to connect the ammeter and the voltmeter into the circuit?

Tick (✓) **one** box.

Ammeter	**Voltmeter**	
In parallel with the resistor	In series with the resistor	☐
In parallel with the cell	In series with the resistor	☐
In series with the resistor	In parallel with the resistor	☐
In series with the resistor	In parallel with the cell	☐

(1)

(b) The student increased the resistance of the variable resistor.

How did increasing the resistance affect the current in the circuit?

_____

_____

(1)

(c) How should the student change the circuit to give negative values for current and potential difference?

_____

_____

(1)

(d) Name the type of relationship between current and potential difference for a resistor at constant temperature.

_____

_____

(1)

(e) Write the equation which links current, potential difference and resistance.

_____

(1)

(f) The current in the resistor was 0.12 A when the potential difference across the resistor was 3.0 V

Calculate the resistance of the resistor.

_____

_____

_____

_____

_____

_____

Resistance = _____ Ω

(3)

(Total 8 marks)