**IGCSE Electricity I – Homework 3 Name……………………………….**

Aims

**Core**

• State that the e.m.f. of an electrical source of energy is measured in volts

• State that the potential difference (p.d.) across a circuit component is measured in volts

• Use and describe the use of a voltmeter, both analogue and digital

• State that resistance = p.d. / current and understand qualitatively how changes in p.d. or resistance affect current

• Recall and use the equation *R* = *V* / *I*

• Describe an experiment to determine resistance using a voltmeter and an ammeter

• Relate (without calculation) the resistance of a wire to its length and to its diameter

**Supplement**

• Show understanding that e.m.f. is defined in terms of energy supplied by a source in driving charge round a complete circuit

• Recall that 1 V is equivalent to 1 J / C

• Sketch and explain the current-voltage characteristic of an ohmic resistor and a filament lamp

• Recall and use quantitatively the proportionality between resistance and length, and the inverse proportionality between resistance and cross-sectional area of a wire

**EMF and Potential Difference**

There are two types of voltage \_\_\_\_\_\_\_\_\_\_\_\_\_\_. and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (p.d.).

A cell or power supply increases the amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a circuit.

The energy given to each unit of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ as it passes around the circuit, is called the e.m.f.

This can be thought of as the electrical pressure pushing the current around a circuit.

When the electrical current flows through a component it \_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.

For example in a bulb \_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy is given out. The difference in the energy of each unit of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is known as the potential difference.

Homework

028

2.



037

Extended

3.

068

Practical

4.



033