**Physics Revision: Advanced Circuits**

Understanding and Explaining

1. **Name the variables in an experiment about how the resistance of a wire changes with length of the wire.**
2. **State if these graphs show linear (ohmic) or non-linear (non-ohmic) relationships.**

Resistor Bulb LED



1. **Explain the I-V relationship for each of the graphs above.**

Resistor

Bulb

LED

1. **Draw a circuit diagram to show how you could investigate the I-V relationship for a component.**

Mastery Matrix Points TRIPLE ONLY

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| (Required practical) use circuits to investigate resistance (triple) |
| Describe the relationship between current and potential difference in ohmic conductors (triple) |
| Describe how resistances changes in thermistors and LDRs (triple) |
| List the applications of thermistors and LDRs (triple) |
| Interpret graphs to determine whether relationships are linear or non-linear (triple) |
| (Required practical) Investigate V-I characteristics using circuits (triple) |

Key Knowledge

Sketch graphs of I-V (current-potential difference) relationships for different components:

Fixed resistor

Filament bulb

Light emitting diode

As temperature increases, the resistance of a thermistor……………….

Applications of thermistors:

As light intensity increases, the resistance of an LDR……………….

Applications of LDRs:

Ohm’s Law (in a sentence and equation)