**Task 7 :Physics 11 Electrical Circuit Investigation Marking Grid: Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| --- | --- | --- | --- | --- |
| A PRELAB MARKS: | Part marks | Max  Mark | Mark | Comments |
| 1. **Ohms Law Stated** |  | **1** |  |  |
| 1. **Ohmic devices:** linear dependence of V on I or resistance constant |  | **1** |  |  |
| 1. **Non-ohmic**: non-linear dependence of I on V or resistance changes |  | **1** |  |  |
| 1. **Examples of non-ohmic devices**, at least 2, (1 mark device, 1 mark use) |  | **4** |  |  |
| 1. **LED** |  | **2** |  |  |
| **TOTAL PRELAB** |  | **9** |  |  |
| B. PLANNING : |  |  |  |  |
| **AIM:** |  | **1** |  |  |
| **Hypothesis** |  | **1** |  |  |
| **Method :** |  | **8** |  |  |
| Logical steps written (4) |  |  |  |  |
| Diagram of Resistor circuit with correct labels. (2) |  |  |  |  |
| Diagram of LED circuit with correct labels (2) |  |  |  |  |
| **Equipment List:** |  | **3** |  |  |
| **TOTAL PLANNING** |  | **13** |  |  |

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| CONDUCTING AND ANALYSING RESULTS |  |  |  |  |
| **Table of Results for Resistor** |  | **8** |  |  |
| Ruled table (1) |  |  |  |  |
| Suitable headings (2) |  |  |  |  |
| Units for voltage and current (2) |  |  |  |  |
| Sensible Results (3) |  |  |  |  |
| **Table of Results for LED** |  | **8** |  |  |
| Ruled table (1) |  |  |  |  |
| Suitable headings (2) |  |  |  |  |
| Units for voltage and current (2) |  |  |  |  |
| Sensible Results, (3)  enough data points taken |  |  |  |  |
| **Resistor : Graph for resistor (V vs I)** |  | **6** |  |  |
| Title (1) |  |  |  |  |
| Axes labels (1) |  |  |  |  |
| Units and sensible increments (1) |  |  |  |  |
| Accurate plotting of results (2) |  |  |  |  |
| Line of best fit (1) |  |  |  |  |
| **Graph for Resistor ( P vs I)** |  | **5** |  |  |
| Title (1) |  |  |  |  |
| Axes labels (1) |  |  |  |  |
| Units and sensible increments (1) |  |  |  |  |
| Accurate plotting of results (2) |  |  |  |  |
| **Determining Resistance using Gradient** |  | **8** |  |  |
| Determine the gradient form line of best fit. (3 marks from gradient, 1 from data points) |  |  |  |  |
| Relating gradient to resistance  ( 3 marks) |  |  |  |  |
| Accuracy –does it match given value  ( 2 marks) |  |  |  |  |
| **LED : Graph (V vs I)** |  | **5** |  |  |
| Title (1) |  |  |  |  |
| Axes labels (1) |  |  |  |  |
| Units and sensible increments (1) |  |  |  |  |
| Accurate plotting of results (2) |  |  |  |  |
| **Graph for LED ( P vs I)** |  | **5** |  |  |
| Title (1) |  |  |  |  |
| Axes labels (1) |  |  |  |  |
| Units and sensible increments (1) |  |  |  |  |
| Accurate plotting of results (2) |  |  |  |  |
| **LED : Determining resistance at 3 locations** |  | **9** |  |  |
| Determines the gradient at three points using tangent ( 6 marks)  Uses points ( max 3 marks ) |  |  |  |  |
| Relates gradient to resistance  ( 3 marks) |  |  |  |  |
| **TOTAL CONDUCTING AND ANALYSING** |  | **54** |  |  |
| D. DISCUSSION AND CONCLUSION |  |  |  |  |
| **Discussion** |  | **9** |  |  |
| Interpreting results – includes discussion of trends (6) |  |  |  |  |
| Errors/Uncertainties/ modifications (3) |  |  |  |  |
| **Conclusion –** summarises results |  | **3** |  |  |
| **TOTAL DISCUSSION AND CONCLUSION** |  | **12** |  |  |

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| **LABORATORY TOTAL** |  | **88** |  |  |
| **VALIDATION TEST** |  |  |  |  |
| **Laboratory scaled** |  | **70** |  |  |
| **Validation test scaled** |  | **30** |  |  |
| **FINAL MARK** |  | **100** |  |  |