SEG Awards Level 2

Motor Vehicle Studies

**Underpinning Knowledge Evidence Record**

K/601/6013 Knowledge of Locating and Correcting Simple Electrical Faults in the Automotive Workplace

|  |  |
| --- | --- |
| **Learners Name** |  |
| **SEG Awards Registration Number** |  |
| **Centre Name** |  |
| **Assessor 1 Name**  |  |
| **Assessor 2 Name**  |  |

**DECLARATION OF AUTHENTICITY**

This declaration must be completed and signed by the learner and countersigned by the tutor / assessor and covers all evidence submitted for moderation.

|  |  |
| --- | --- |
| Learner Name |  |
| Unique Learner Number (ULN) |  | SEGLearner Reg. ID |  |
| Qualification Title |  |
| Centre Name |  |

# Learner statement of authenticity

**Before signing please read the guidance below**.

I confirm, that the attached assignment / portfolio is all my own work[[1]](#footnote-1) and does not include any work completed by anyone other than myself. I have completed the assignment / portfolio in accordance with SEG Awards’ instructions and within the time limits set by my centre.

|  |  |  |  |
| --- | --- | --- | --- |
| Signature |  | Date |  |

# Centre confirmation of authenticity

On behalf of …………………………………….(insert centre name), I confirm that the above mentioned learner, to the best of my knowledge, is the sole author of the completed assignment / portfolio attached, and the assessments have been completed under the required conditions.

|  |  |  |  |
| --- | --- | --- | --- |
| Signed |  | Date |  |
| Name |  |
| Title |  |

**Guidance for Learners**

You have been asked to sign this Declaration of Authenticity and place it at the front of your portfolio or course work assessment. It confirms that the work you have submitted for assessment is your own and that you have not copied it from someone else or allowed another learner to copy it from you.

When preparing any course work it is good practice to undertake research using information from published sources. If you quote directly from these sources then this must be indicated in your work by using quotation marks and referencing the document from which the quotation was taken. You must then comment in your own words on any ideas expressed.

Assessors, internal verifiers and SEG Awards’ external moderators and verifiers are subject specialists who can spot the use of published materials that may be passed as your own words or ideas.

If you do copy words from a published source and do not indicate their reference you will be committing plagiarism. This is considered a form of cheating and may result in your assessment being declared void.

**Contents**

|  |  |  |
| --- | --- | --- |
| **Task No** | **Title** | **Assessment Criteria** |
| 1 | Electrical test equipment | 1.1, 1.2, 1.3, 1.4 |
| 2 | Basic circuit diagnosis | 1.5, 2.1, 2.2, 2.4, 2.6 |
| 3 | Electrical components | 1.6, 2.3, 2.8 |

|  |  |
| --- | --- |
| **Task 1 – Electrical test equipment** | **Assessment Criteria 1.1, 1.2, 1.3, 1.4** |

|  |
| --- |
| **Identify 4 items of electrical test equipment, safety checks and how to use the equipment safely in the table below** |
| **Name** | **Safety checks** **(where appropriate)** | **Explain how you would use the equipment safely** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

|  |
| --- |
| **Using Ohms Law calculate the missing values in the table below** |
| **Volts** | **Amps** | **Resistance** |
| **12** | **2** |  |
| **12** |  | **1.5Ω (Ohms)** |
|  | **2.2** | **6Ω (Ohms)** |

|  |  |
| --- | --- |
| **Task 2 – Basic circuit diagnosis** | **Assessment Criteria 1.5, 2.1, 2.2, 2.4, 2.6** |

|  |
| --- |
| **A vehicle electrical circuit with no faults when tested should read** |
| **Volts** | **Amps** | **Resistance** |
| **12** | **4** | **3** |
| **From the readings below identify the type of circuit fault** |
| **Volts** | **Amps** | **Resistance** | **Type of Circuit fault** |
| **12** | **0** | **0Ω (Ohms)** |  |
| **5** | **20** | **0.2Ω (Ohms)** |  |
| **12** | **0.5** | **24Ω (Ohms)** |  |

|  |  |
| --- | --- |
| **Task 3 – Electrical components** | **Assessment Criteria 1.6, 2.3, 2.8** |

|  |
| --- |
| **Describe the basic function of the components listed below** |
| **Name of Electrical component** | **Function****Briefly explain how it operates** |
| **DC motor** |  |
| **Actuator** |  |
| **Sensors** **(active and self generating)** |  |
| **Transistor** |  |
| **Resistor** |  |
| **Capacitor** |  |
| **Semi-conductor** |  |

|  |
| --- |
| **Describe how you would test electrical systems safely and dispose of any removed electrical components**  |
|  |

1. Unless otherwise stated e.g. for some entry level qualifications, learners can work together but should identify sections which are their own work. [↑](#footnote-ref-1)