

0171-515 – Level 3 Land-based Engineering – Theory Exam (1)

March 2024

Examiner Report

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Introduction

This document has been prepared by the Chief Examiner, it is designed to be used as a feedback tool for centres to use in order to enhance teaching and preparation for assessment. It is advised that this document be referred to when preparing to teach and then again when candidates are preparing to sit examinations for City & Guilds Technical qualifications.

This report provides general commentary on candidate performance and highlights common themes in relation to the technical aspects explored within the assessment, giving areas of strengths and weakness demonstrated by the cohort of candidates who sat the **March 2024** examination series. It will explain aspects which caused difficulty and potentially why the difficulties arose, whether it was caused by a lack of knowledge, incorrect examination technique or responses that failed to demonstrate the required depth of understanding.

The document provides commentary on the following assessment:
0171-515 Level 3 Land-based Engineering – Theory Exam (1).

Theory Exam – March 2024

Grade Boundaries and distribution

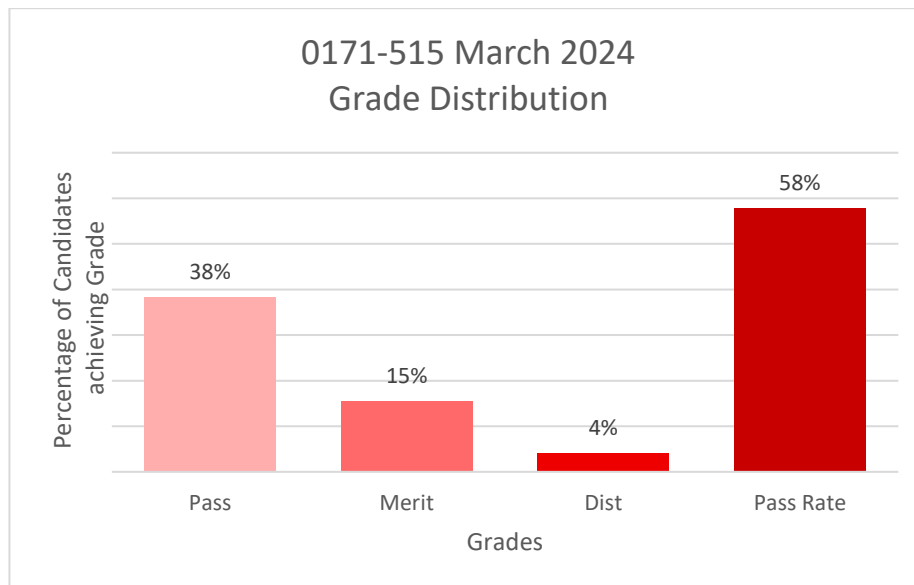
Assessment: **0171-515**

Series: **March 2024**

Below identifies the final grade boundaries for this assessment, as agreed by the awarding panel:

| | |
|------------------------------|-----------|
| Total marks available | 60 |
| Pass mark | 24 |
| Merit mark | 33 |
| Distinction mark | 42 |

The graph below shows the approximate distribution of grades and pass rates for this assessment:



Chief Examiner Commentary

General Comments on Candidate Performance

Assessment component: 0171-515

Series 1 (March)

Overall, the candidates' performance has improved compared to previous series.

Many candidates performed well in topics related to the practical application of knowledge, service, and repair activities. Some candidates showed a deep understanding in places, but other candidates demonstrated limited knowledge.

Performance on recall questions (AO1) was mixed. Candidates struggled with questions relating to the definition of Hooke's Law, principles, and the formula for Pascal's Law. However, candidates performed well on questions relating to types of emissions system and cooling system component identification. There was some good performance seen in understanding questions (AO2) the most notable being a question relating to firing order grid, and the ERQ, but as with the recall questions there were some AO2 questions which performed less well eg questions on Newtons 1st law of motion, and the functions of a cooling system.

Areas of strength

- All calculation questions including calculation of area, Ohm's Law and mean calculations.
- Combustion strokes.
- Types of emissions control systems.
- The Extended Response Question (ERQ).

Areas which proved more challenging

- The principles-based questions, eg defining Hooke's Law, and stating the principles of Pascal's Law (including providing the formula for Pascal's Law).
- Candidates also lost marks by omitting the units from the calculation questions.

Areas with differentiation

- Stating formulas and units in calculation answers,
- Principals-based questions,
- Component identification,
- Function and relationship between power and torque.

The Extended Response Question

The ERQ gave candidates the opportunity to demonstrate their knowledge and understanding of engine servicing, the question in this series related to an agricultural tractor but is transferable to a multi cylindered CI power unit. Responses were improved from the previous series, and most candidates provided sufficient detail to score in the middle of band 2 (60.4% band 2 or above). Some candidates provided in-depth detail achieving marks in the upper band (13.4% achieved within band 3), a very limited number of candidates struggled to provide basic details or did not answer the question.

Centres are advised to help candidates develop their use and understanding of fundamental principles, technical terminology and mathematical and science-based concepts across the qualification. Practising examination techniques when preparing for future series would be particularly beneficial to fully understand the requirements of the question before answering.

All documents are available to download from [Technicals in Agriculture and Land-based Engineering qualifications and training courses | City & Guilds \(cityandguilds.com\)](https://www.cityandguilds.com/qualifications/technical-qualifications)

Past papers and marking schemes: Documents – Level 3 – Assessment materials – Past Papers tabs

Exam guide: Documents – Level 3 – Assessment materials