

0171-023/523 – Level 2 Technical Certificate in Land-Based Engineering- Theory Exam

March 2020

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 2020** 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 assessments;

0171-023 Level 2 Technical Certificate in Land-Based Engineering Version C

0171-023 Level 2 Technical Certificate in Land-Based Engineering Version D2

0171-523 Level 2 Technical Certificate in Land-Based Engineering

Theory Exam – March 2020

Grade Boundaries and distribution - 0171-023 Version C

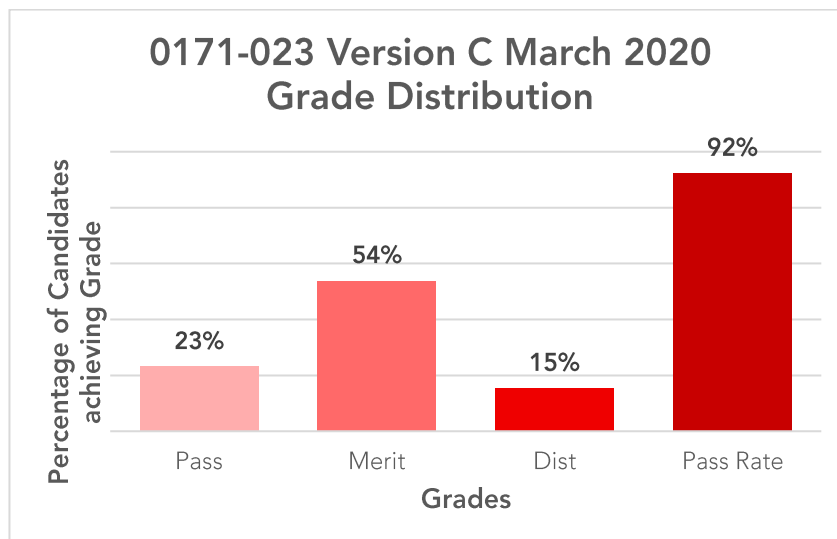
Assessment: **0171-023 Version C**

Series: **March 2020**

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

Total marks available	50
Pass mark	25
Merit mark	32
Distinction mark	40

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



Theory Exam – March 2020

Grade Boundaries and distribution - 0171-023 Version D2

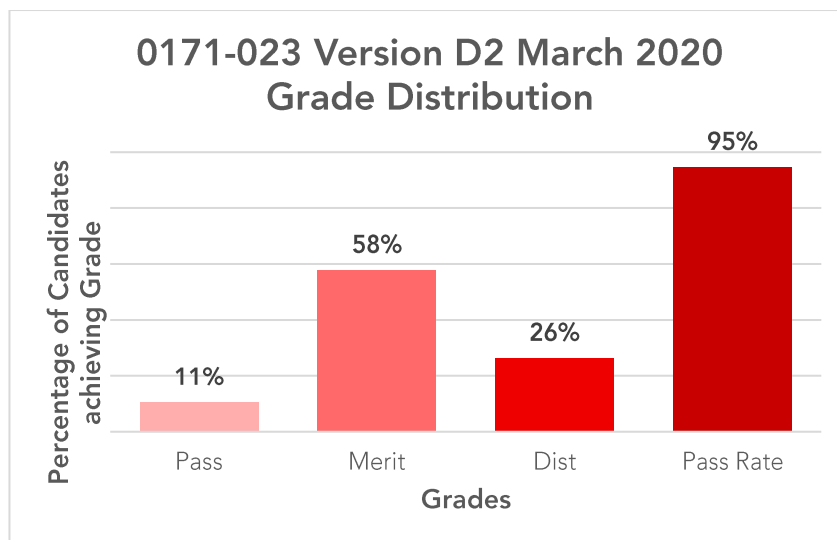
Assessment: **0171-023 Version D2**

Series: **March 2020**

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

Total marks available	50
Pass mark	25
Merit mark	32
Distinction mark	40

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



Theory Exam – March 2020

Grade Boundaries and distribution - 0171-523

Assessment: **0171-523**

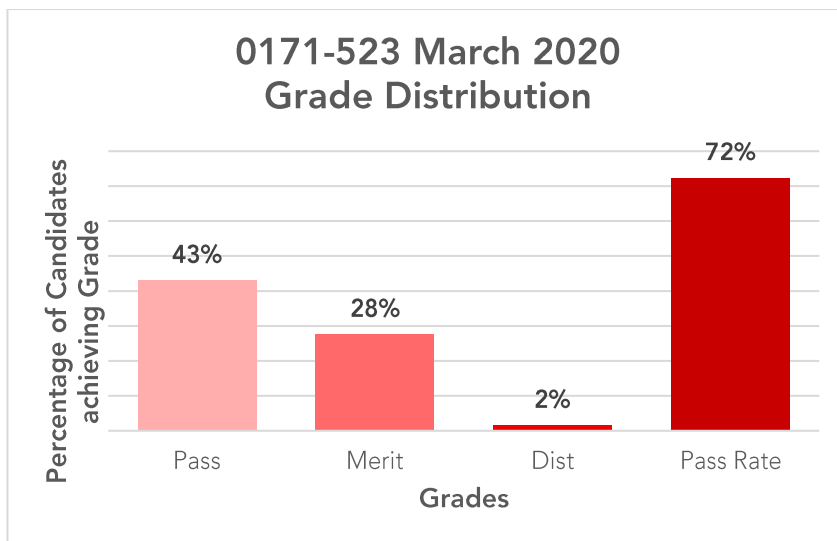
Series: **March 2020**

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

Total marks available	49*
Pass mark	23
Merit mark	30
Distinction mark	38

*One item was excluded

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: 0171-023 Version C

Series 1 (March)

Overall, candidates' performed well on this assessment. Candidates demonstrated a good level of recall over the majority of the subject areas. This paper was comparable to previous on-demand series set in relation to range, level, technical terminology and current technologies.

Candidates accessed marks across the whole paper, particularly in the recall questions. A number of opportunities for the higher performing candidates were available to allow them to demonstrate their greater depth and breadth of knowledge and understanding across the qualification. Questions requiring candidates to apply their knowledge and understanding were not as challenging as in previous papers, yet still provide a fair test and focused on areas which some candidates would find challenging.

Candidates in general scored well in questions about transmission and driveline operational principles, engine operation principles, vehicle electrics and land-based vehicle machinery operation. All candidates demonstrated excellent knowledge and understanding concerning health and safety indicating the importance centres are placing on this aspect of the qualification.

Candidates demonstrated a consistent lack of knowledge and understanding of hydraulic symbols and what components these symbols represented.

Candidates did not perform so well when questions were focused on technical adjustments or process where particular consequences were discussed. Questions where candidates had to identify technically correct detail within a statement were not answered well by the lower scoring candidates, however higher scoring candidates performed well in these type of questions.

Overall centres are preparing candidates well as the results demonstrate higher percentage achieving merit in comparison to pass percentages. Centres are encouraged to continue to embed elements of diagnostic process within their delivery with a view to developing candidate's logical thinking and understanding of cause and effect. Greater emphasis could be shown to the importance of the knowledge and understanding of hydraulic symbols and the subtle differences, which can alter a symbols meaning.

Centres are reminded of the City and Guilds Technicals exam guides available here

https://www.cityandguilds.com/-/media/productdocuments/land_based_services/agriculture/0171/level_2/assessment_materials/0171-023_and_523_technicals_exam_document_2018_v1-pdf.ashx

Assessment component: 0171-023 Version D2

Series 1 (March)

Overall, candidates performed well on this assessment with excellent recall across all topic areas. The paper was of a similar level to previous on-demand series in relation to range and technical terminology with a mix of traditional and more recent technologies covered.

Candidates were able to access marks across the whole paper. Questions requiring application of knowledge and understanding to practice proved a challenge for lower scoring candidates, while higher scoring candidates scored well across the majority of these questions.

Candidates demonstrated excellent recall across all topic areas; they managed to identify components, symbols and warning indicators to a high standard. They also demonstrated good knowledge and understanding of adjustments and repair process within the engine and transmissions subject areas. There was strong performance on the electrical topics and on machinery used within land-based engineering.

Candidates continued to have a thorough understanding of risk assessment and matters relating to health and safety.

The vast majority of candidates scored poorly on questions where technical terminology was used to describe a process of repair and if the question looked at the logical cause and effect behind a fault within a system. This was particularly apparent in questions relating to hydraulic or electrical diagnostics.

Overall, centres are preparing learners in an appropriate manner and the greater percentage of candidates passing in the merit or above grading band is supportive of this view. Centres are encouraged to promote the enhancement of diagnostic knowledge and understanding at a level appropriate for Level 2 candidates, and introduce the concept of 'cause and effect', which would allow candidates to access marks that they have not been able to achieve this time.

Centres are reminded of the City and Guilds Technicals exam guides available here

https://www.cityandguilds.com/-/media/productdocuments/land_based_services/agriculture/0171/level_2/assessment_materials/0171-023_and_523_technicals_exam_document_2018_v1-pdf.ashx

Assessment component: 0171-523

Series 1 (March)

This paper was considered to be slightly more difficult for candidates in comparison to the previous comparable series. This paper saw a greater number of questions that required a strong understanding of technologies and technical terminology. One question was excluded. The aforementioned was taken into account in awarding to ensure no candidates were disadvantaged.

Candidates scored well when asked to identify components, functions, advantages and disadvantages of systems across the qualification topics. Electrical questions were also answered well across all levels, however many candidates failed to identify the units used when measuring within electrical circuits. The vast majority of candidates answered hydraulic questions to a high standard. However, few candidates were able to identify a type of hydraulic circuit from the detail contained within a control valve to determine open centred, closed centred or load sensing or identify the one that would be best suited given a variable flow and pressure requirement. Candidates at all levels were unable to correctly place testing gauges in a circuit to best test a named component, with the aid of a schematic.

Candidates performed extremely well when responding to health and safety questions across all topics and had a strong awareness of the importance of risk assessment. However, candidates did not show strength in legislation relating to legal limits on vehicle width. The topic of legislation in general should be enhanced during delivery.

Continuing a theme across a number of papers, candidates at all levels did not score well on diagnostic questions, particularly where cause and effect was referenced and application of knowledge and understanding required. Lower scoring candidates did not perform well on questions on transmissions and engines where measuring, testing or modern technology was required. High scoring candidates accessed marks across all these areas, however this was not as consistent as in other papers.

Candidates were also unable to determine which speed and torque scenario would call for an economy gear selection within a PTO system, however they did well when applying an understanding of speed and torque when looking gears in a traditional driveline.

The stretch and challenge questions required strong logic, deep understanding and knowledge. Continuing the theme identified throughout the paper, candidates did not score well in the diagnostic areas or questions with larger quantities of technical terminology. Candidates did gain marks across the question but not in a consistent nature.

Candidate performance was lower than past exams. Candidates did not access marks across the whole paper as they have in previous test or series. Candidates were able to identify components and symbols to a high standard; however, they achieved lower marks in more structured questions that required logic and/or diagnosis. Centres are advised to enhance the opportunities of candidate exposure to basic diagnostic processes and utilise realistic fault scenarios when covering each topic with a view of improving their ability to link cause and effect within land-based engineering systems. Candidates should also work on further developing their knowledge and understanding of technical terminology, as well as improving their exam technique.

Centres are reminded of the City and Guilds Technicals exam guides available here

https://www.cityandguilds.com/-/media/productdocuments/land_based_services/agriculture/0171/level_2/assessment_materials/0171-023_and_523_technicals_exam_document_2018_v1-pdf.ashx