

0171-018/518 – Level 3 Land-based Engineering – Theory Exam (2)

March 2022

Chief 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 2022** 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;
0171-018/518 Level 3 Land-based Engineering – Theory Exam (2).

Theory Exam – March 2022

Grade Boundaries and distribution

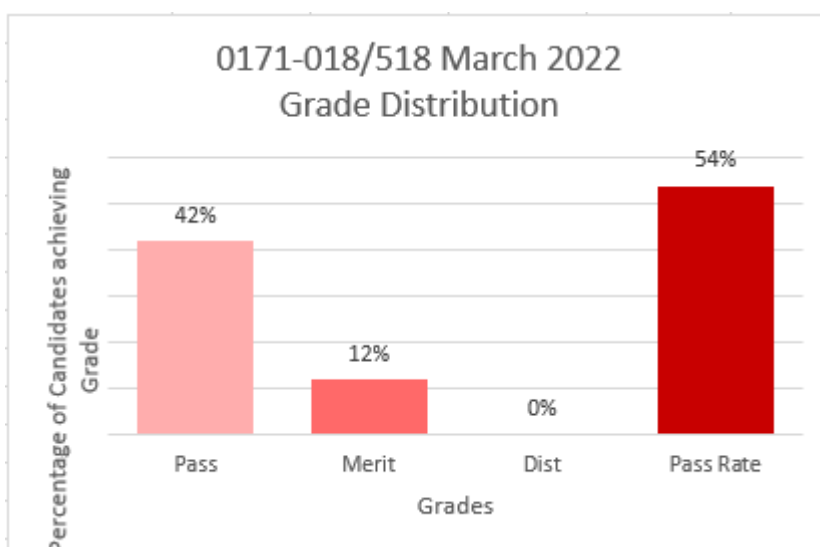
Assessment: **0171-018/518**

Series: **March 2022**

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: 0171-018/518

Series 1 (March)

The March 2022 examination paper covered several areas within the learning outcomes and was comparable to those sat in 2019 and 2020. Overall, candidates' performance was stronger in identifying components, indicating strong recall. However, the many of candidates' explanations lacked detail demonstrating the lack of both depth and breadth of knowledge and understanding.

In this paper, questions that required components or parts to be identified were answered well, most candidates used the correct terminology whether identifying wearing components or when describing the operation of a system. The higher scoring candidates were able to identify the impact of a stretched cable linking it to the possible effects on operation demonstrating knowledge and understanding when responding to explanation questions. The use of recognised terminology within the context of hydrostatic transmissions was evident in higher scoring candidates.

Many candidates demonstrated weaknesses in both knowledge and understanding when responding to questions related to hydrostatic transmission systems and hydro-mechanical transmission systems (CVT). There was consistent inaccurate use of terminology within answers. Within hydrostatic transmission systems, there was a lack of recognition of the varying layouts that are available and the advantages in performance that these different layouts can achieve. Candidates tended to respond by giving generic advantages of a hydrostatic system rather than specifics that were being asked for in a particular system. This was the case with high scoring candidates too. Very few learners were able to demonstrate an understanding of the operating principles of a hydro-mechanical transmission. Some candidates were able to use the correct terminology but few managed it in a logical manner that would offer a technically correct operating principle.

Another factor in the candidates' performance was the lack of detail when responding to an 'explain' question. Candidates tended to list one word responses rather than give a detailed 'cause and effect' scenario which would give access to a greater number of marks. To compound this, when asked for a number of responses candidates would often repeat the same response but in a different wording rather than giving an alternative response.

Extended Response Question (ERQ)

Overall, the cohort's performance, when responding to the ERQ, was an improvement from the previous series. Candidates were asked to fully assess and diagnose a fault on an electronically controlled, power shift transmission system. In the main, candidates were able to approach the task in a logical manner and demonstrated knowledge and understanding with the use of correct terminology within context. This was particularly evident when explaining the use of electronic service tools to scan for fault codes. Candidates across all scoring bands followed a consistent approach of talking to the operator, testing the machine themselves, carrying out a risk assessment and completing the fault code scan and carrying out a calibration. Thereafter, higher scorers were able to use their deeper knowledge and understanding to complete a more comprehensive and logical approach to diagnosis following testing of electronic/electric faults, then moving to testing for hydraulic faults before finally resorting to full strip down to identify mechanical faults. Only a small number gave suggestions of possible faults or readings which may be recorded.

Candidates will benefit from practising exam questions linked to cause and effect, where they are asked to explain an advantage or disadvantage of a system for example. A fuller and more comprehensive understanding of modern but common transmissions systems and how the components within these systems operate and interact with each other would also benefit candidates in the future. Candidates would also benefit from reading the question carefully and

taking note of the number of marks awarded. A question looking for three advantages to be explained and carrying 6 marks will be looking for the advantage to be stated and an explanation for why it is an advantage.

Past papers and marking schemes are available on the City and Guilds website which should be used for exam practice.

City & Guilds also offers a technical exam guide to support the work on the exam technique.

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/Technical-Engineering-qualifications-and-training-courses)

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

Exam guide: Documents – Level 3 – Assessment materials