

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

March 2023

Examiner Report

Contents

Introduction.....	3
Theory Exam – March 2023	4
Grade Boundaries and distribution.....	4
Chief Examiner Commentary.....	5

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 2023** 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 2023

Grade Boundaries and distribution

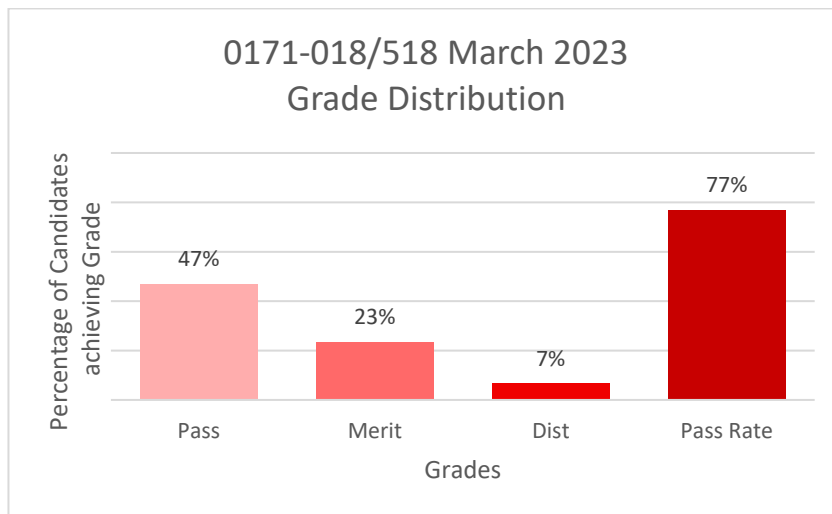
Assessment: **0171-018/518**

Series: **March 2023**

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 2023 examination paper covered a number of topics within the designated learning outcomes and was comparable to previous papers sat in 2020 and 2022. Overall, candidates' performance improved compared to previous series. This upward trend was mainly driven by stronger responses to 'explain' questions, as the majority of candidates were able to demonstrate greater depth by following the expected 'cause and effect' answer format.

In this paper, candidates responded well when identifying parts or components in mechanical and power shift transmission systems. The use of correct terminology demonstrated strong recall and a depth of understanding when explaining causes of faults. Higher scoring candidates were able to show a greater breadth of knowledge and understanding across the paper and access marks with more descriptive and accurate responses.

Most candidates demonstrated weakness in the identification of components within an axial piston, variable displacement pump. There was a consistent theme of inaccuracy and most candidates were unable to identify core components such as swash plate, pistons and cylinder/barrel. When testing a hydrostatic transmission, there was also a lack of knowledge and understanding as to why a technician would want to measure and record both pressure and flow to successfully diagnose wear within the pumping unit. Very few learners were able to demonstrate knowledge and understanding of the flow of power through a differential when a vehicle is turning sharply. Most candidates described the function of the differential and detailed elements of its working principle, rather than following the flow of power from component to component.

The cohort responded well to the extended response question, showing improvement from previous series. Candidates were asked to fully assess and diagnose a fault related to the constant engagement of an electronically controlled four-wheel drive hydraulic clutch. Candidates demonstrated a competent approach which followed a logical plan. In the main, responses mentioned discussions with the operator, pre-stat checks followed by a risk assessment, before testing the machine themselves. Several made use of a scanning tool to identify fault codes and the process of clearing codes before retesting. Candidates who performed well tested individual systems (electric/electronic, hydraulic and mechanical). This was mostly carried out in the order of simple tests before moving on to the more complex tests. Lower achieving candidates lacked the depth of knowledge to suggest possible faults and consistently missed key steps in the process. Only a small number of candidates suggested possible readings from measuring equipment, such as digital multimeters or hydraulic pressure gauges.

Candidates will benefit from greater exposure to more complex transmission systems to build their depth and breadth of knowledge and understanding. Along with this, an opportunity to diagnose faults on these systems would enhance their ability to apply this knowledge into the testing and inspecting procedures that are commonly completed on these transmission systems. Candidates would also benefit from greater familiarity with the command verbs used in questions and an understanding of what is expected in response to these will allow for greater access to marks across the paper as a whole.

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/0171-018/518)

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

Exam guide: Documents – Level 3 – Assessment materials