

1145-530 Level 3 Engineering – Theory Exam

March 2023

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 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;

1145-530 – Level 3 Engineering – Theory Exam

Theory Exam – March 2023

Grade boundaries and distribution

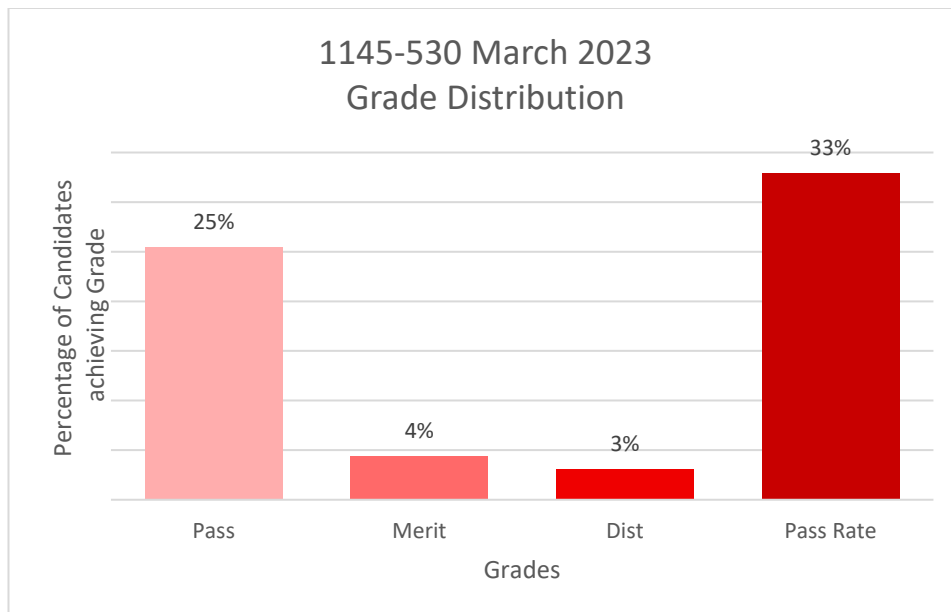
Assessment: **1145-530**

Series: **March 2023**

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

Total marks available	100
Pass mark	38
Merit mark	53
Distinction mark	68

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



Chief Examiner Commentary

Assessment component: 1145-530

Series March 2023

Overall candidates' performance on the paper was not comparable to last year's. Candidates struggled in a number of areas in this examination. The questions covered a wide range of technical knowledge in the specification and were pitched at an appropriate level. The breakdown of available marks per unit was the same as previous papers.

There were very few questions that were answered well in this examination. One of the questions that was answered well was on material properties, however this question was knowledge recall, so a high level of achievement was expected. Another question that was answered quite well was on suitable materials for a given design. The two questions that were answered well were both on materials, which was perhaps a specific strength of this cohort.

Particular areas of weakness in the paper included the topic of electronics. These questions focused on semiconductors, large transformers and system diagrams. In most instances there was a lack of knowledge shown on these topics. A further topic that was a particular weakness in this examination was composite materials, with most candidates not able to show knowledge on this topic, however on the questions on electronics and composite materials a small number of candidates were able to achieve full marks.

The performance on unit 306 Engineering mathematics and statistics was poor, as it has been in previous series. Many candidates did not attempt the majority of these questions. The question where candidates were able to pick up marks in this section was on complex numbers. Other topics covered in this section where candidates were not able to answer well were Cartesian coordinates, trigonometry, and solving problems involving differentiation. Once again, a small number of candidates were able to achieve full marks on these questions.

The extended response questions (there are two within this paper) spanned nearly the full range of available marks, however compared to previous series a smaller number of candidates achieved the highest marking band. This is because consideration was not given to secondary or indirect implications of the factors that were discussed.

Overall, it was noted that this cohort candidates did not perform as well as previous cohorts and, in many instances, when candidates were asked about specific processes they would often answer about a different topic. This could be due to a lack of knowledge or not reading the question properly. There was also a lack of depth and breadth of knowledge from the majority of the candidates.