

CARIBBEAN EXAMINATIONS COUNCIL

**REPORT ON CANDIDATES' WORK IN THE
CARIBBEAN ADVANCED PROFICIENCY EXAMINATION**

MAY/JUNE 2004

ELECTRICAL AND ELECTRONIC TECHNOLOGY

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GENERAL COMMENTS

When compared with 2003, there has been a significant increase in the number of candidates for this examination. It is evident also that there has been improvement in the performance of candidates even though their improved performance appeared to be skewed to the electronics areas. Most candidates appear to be comfortable with the electronics related topics. It is evident that there is lack of understanding of some basic electrical and electronics concepts which affect the candidates' performance.

Fifty four candidates registered for this examination. Of this number, only thirty eight sets of scripts were received for marking.

The examination offered a wide coverage of the syllabus, in fact, the two papers when combined, covered all units in the syllabus.

It is quite evident that the schools are doing a better job of preparing students for this subject. However, more work is needed to get candidates to perform at the standard required for this level examination. Of the candidates who entered, a significant number of them have attempted more questions in the examination than in the past examinations.

The overall performance of candidates in this examination declined when compared with the performance of those who wrote the examination in 2003. In 2004, 68 per cent of the candidates achieved Grades II – V, compared with 86 per cent in 2003. No candidate achieved Grade I. This decline in performance was consistent across Modules 2 and 3, Analogue and Digital Electronics and Electrical Energy Systems respectively. Module 1 - Circuit Theory, continues to experience the best performance by candidates.

Only a few candidates have demonstrated competency in electronics as well as electrical energy systems. Most seem to be well prepared in topics on circuit theories and electronics. Candidates would be well advised to spend more time on both specializations electrical and electronics.

DETAILED COMMENTS

PAPER 01

Module 1 – Circuit Theory

Questions 1 – 10

Candidates were required to use fundamental laws to solve simple electrical/electronics circuits. More than 50 per cent of the candidates scored above 50 per cent in Module 1. From a possible 30 marks, six candidates scored in the 20 – 25 range, 16 scored in the 15 – 19 range, six scored in the 10 – 14 range and the remaining 10 candidates scores below 10 points.

Module 2 – Analogue and Digital Electronics

Questions 11 – 20

Basic analogue and digital electronic concepts were covered in this module. This module proved to be somewhat challenging. Of the 38 candidates, three candidates scored zero and only three above 20 points. Another three scored in the 15 – 19 range. Seven scored in the 10 – 14 range and the remaining 25 scored below 10 points.

Module 3 – Electric Energy Systems

Questions 21 – 30

This was the most challenging module. None of the candidates scored above 12 points and four scored zero. Twenty-three scored in the 1 – 5 range and the remaining 12 scored in the 6 – 12 range. This reveals that most candidates were ill prepared for this module.

PAPER 02

Candidates were required to do all six questions in this paper.

Module 1 – Circuit Theory

Questions 1 and 2

Candidates were required to state and use the Superposition Theorem to solve simple problems in Question 1 and solve problems in inductance in Question 2. Only two candidates scored in the 20 – 25 range for Question 1 and two in that range for Question 2. Eight candidates scored in the 10 – 20 range for Question 1 and 19 for Question 2. Twenty-seven candidates scored below 10 for Question 1 and 17 for Question 2.

Module 2 – Analogue and Digital Electronics

Questions 3 and 4

Question 3 concentrated on operational amplifiers, whereas Question 4 concentrated on logic circuits. Two candidates scored above 20 in both questions. Four candidates scored in the 10 – 20 range in Question 3 whereas 11 scored in this range for Question 4. Thirty-two scored 10 and below (seven zeros) in Question 3 and 25 (two zeros) in Question 4.

Module 3 – Electrical Energy Systems

Questions 5 and 6

These question were the most challenging and concentrated on several types of motors and transformers. No candidate scored above 15 marks in either question. Three candidates scored in the 10 – 15 range for question 5 and seven scored in this range for Question 6. The remaining 35 and 31 candidates scored below 10 for Questions 5 and 6 consecutively. Seventeen candidates scored zero for Question 5 and four scored zero for Questions 6.

INTERNAL ASSESSMENT

Only written reports for School Based Assessment were submitted for moderation. For the most part, the reports were poorly written. It appears that candidates are not encouraged to prepare their reports on projects in a timely manner. Consequently they are rushed when due by CXC.

RECOMMENDATIONS

1. Candidates need to spend more time on the electrical and electronics specializations. Only few candidates have demonstrated competency in electronics and few in electrical energy systems. Most seem to be quite knowledgeable about circuit theories and electronics.
2. Practical exercises should be more closely monitored. It appears that candidates are focussing primarily on electronics at the expense of the electrical areas.
3. Sample projects should be made available in order to effectively moderate grades assigned by teachers.