# CARIBBEAN EXAMINATIONS COUNCIL
**HEADQUARTERS**

# REPORT ON CANDIDATES' WORK IN THE SECONDARY EDUCATION CERTIFICATE EXAMINATION

**JANUARY 2010**

## INFORMATION TECHNOLOGY
## TECHNICAL PROFICIENCY EXAMINATION

## GENERAL COMMENTS

In January 2010, 626 candidates from the participating territories registered for the Information Technology (Technical) examination. This represented an increase in registration of 54.19 per cent when compared with January 2009.

## DETAILED COMMENTS

### Paper 01 – Theory

This paper consisted of three sections with 14 compulsory questions testing the theory profile. Section 1 consisted of 6 questions testing Hardware and Software; Section 2 consisted of 5 questions testing Applications and Implications and Section 3 consisted of 3 questions testing programming.

**Section I**

Question 1

This question tested candidates' knowledge of computer acronyms and their ability to provide one task that is performed by each of the components represented by the given acronyms.

The majority of candidates were able to give the meaning of the acronyms, CU, ALU and ROM but not RAM (Random Access Memory). In addition, about half the number of candidates were unable to correctly provide one task that is performed by each of the given components.

Question 2

This question tested candidates' ability to state the types of optical disk best suitable for the three given situations.

This question was well done by the majority of candidates. Some candidates provided magnetic storage media (floppy disk and hard drive) instead of the types of optical disk.

Question 3

This question tested candidates' knowledge of data capture methods.

This question was well done by the majority of candidates. However, some candidates confused OMR, OCR and MICR.

Question 4

This question provided candidates with pictures of four types of printers and tested their ability to match the type of printer with their best uses, and required them to state the general name of the devices indicated by the pictures.

This question was poorly done by the majority of candidates. Most of the candidates were able to supply the best use for Figure 2 (inkjet printer) but were unable to do so for the other types of printers. In addition, most of the candidates did not provide printer as the general name of the devices, instead they provided the name for each printer and in some cases they mentioned output devices.

Question 5

This question tested candidates' ability to

- convert decimal number to binary using eight-bit binary representation
- find the decimal equivalent for a binary coded decimal number
- perform subtraction in binary using two's complement representation.

This question was poorly done by the majority of candidates. Most of the candidates experienced difficulty in performing subtraction in binary using two's complement representation. Some candidates were able to find the decimal equivalent of binary coded decimal number and to convert from decimal to binary for both positive and negative integers.

Question 6

This question tested candidates' knowledge of user interfaces.

This question was poorly done by the majority of candidates. Most of the candidates were not familiar with the command line and menu-driven user interfaces.

**Section II**

Question 7

This question tested candidates' knowledge of the use of computers in the music industry.

This question was well done by the majority of candidates. Some candidates mentioned computer devices that can connect to the computer but failed to link them to the music industry.

Question 8

This question tested candidates' knowledge of concepts associated with the Internet.

The majority of candidates were able to state the differences among the .edu, .org and .gov extensions found on websites. Most candidates were also able to provide the name of a well-known search engine and to indicate where they would type the name of the website to access it. Although there were few variations, the majority of candidates indicated correctly what the terms http and www represent.

Question 9

This question tested candidates' knowledge of Internet, Intranet and Extranet.

This question was well done by the majority of candidates who were able to match the terms Internet, Intranet and Extranet with the types of network provided. Some candidates confused Internet with Extranet.

Question 10

This question tested candidates' knowledge of the illegal use of computers and the misuse of personal information.

This question was poorly done by the majority of candidates who were unable to describe two ways a computer can be used illegally and to provide one example of how an organization can misuse its customers' personal data.

Question 11

This question tested candidates' knowledge of the use of credit or debit cards to purchase items; health problems associated with the use of computers for prolonged periods and the impact of the increased use of cell phones in the workplace.

This question was well done by the majority of candidates. Most of the candidates were familiar with the use of credit or debit cards to make purchases and the impact of the increased use of cell phones in the workplace. However, some candidates listed health problems associated with the prolonged use of computers without providing explanations of how the health problems could develop.

**Section III**

Question 12

This question tested candidates' ability to

- differentiate between syntax and logic errors (Part a)
- analyse two line of codes and indicate the results when the codes are executed (Part b)
- trace programme segments and indicate the results, given the value of the variable (Part c).

Part (a) of the question was poorly done as the majority of candidates could not explain the difference between syntax and logic errors.

Part (b) of the question was well done. The majority of candidates provided the correct results when the codes are executed. Some candidates misinterpreted the sign as 'lesser than or equal to' instead of 'greater than or equal to'.

Part (c) of the question was well done as the majority of candidates was able to perform the programme trace and provide the correct results.

Question 13

This question tested candidates' ability to analyse a programme segment to

- identify input, declaration and output statements (Part a)
- identify errors and to provide the corrected codes (Part b)
- identify a variable, a conditional statement and a data type (Part c)
- explain the purpose of the programme segment (Part d)
- state the results of the programme segment, given the value of the variables (Part e).

Part (a) of the question was poorly done by the majority of candidates who were unable to identify the correct line numbers containing input, declaration and output statements. Part (b) was also poorly done. The majority of candidates could not identify the errors in the programme segment and hence, could not provide the corrected codes. Candidates did badly on Part (c) as well. The majority of them seemed unfamiliar with the concepts of variable, data type and conditional statement.

Performance on Part (d) was also poor. The majority of candidates provided a definition of the term, 'programme segment' rather than the purpose of *the* programme segment.

Part (e) of the question was poorly done. The majority of candidates failed to apply the logic to the given programme segment to compute the correct results.

Question 14

This question tested candidates' ability to analyse logical statements and to indicate whether they are true or false based on the given values of the variables. This question was well done by the majority of candidates who obtained full marks.

## Paper 02 – Practical Exercises

Paper 02 is a practical paper consisting of three questions testing Word Processing, Spreadsheet and Database Management profiles.

Question 1 – Word Processing

This question tested candidates' ability to use the various features of Word Processing software.

This question was well done by the majority of candidates. Some areas of difficulty were:

- Inserting footer. Many candidates inserted header instead of footer (Part i).
- Justifying text. Many candidates confused fully justified with centring text (Part j).
- Use of spell check feature. Many candidates did not use the spell check feature to correct the spelling of all misspelt words (Part l).
- Centring a table in a document. Most candidates centred the table in the column rather than in the centre of the document when the column settings were discontinued (Part m).
- Mail-merge. Many candidates printed out the merge letters but failed to print out the form letter with the merge fields inserted (Part o).

Question 2 – Spreadsheet

This question tested candidates' ability to use the various features of spreadsheet software.

This question was satisfactorily done by the majority of candidates. Some areas of difficulty were as follows:

- Calculating totals. Some candidates selected the incorrect range while others used the COUNT function instead of the SUM function (Part c).
- Inserting footer. Many candidates did not follow the instructions to insert the footer on the left (Part g).
- Merge and centre feature. Many candidates did not use the merge and centre feature to centre the title rows across the columns used by the worksheet (Part j).

- Sorting data. Many candidates had difficulty sorting the data on the required column (Part k).

- Totalling non-adjacent ranges. Many candidates could not find the total population for 2010 and 2011 and hence, the difference between the total populations for 2010 and 20100 (Part l [i and ii]).

- Advanced filtering of data. Many candidates seemed unsure of how to perform the advanced filter, and thus this part was poorly done. Those who attempted it, did not include the correct criteria and in most cases the output/extraction range was not seen (Part m).

- Creating charts. Many candidates did not select the correct data as it was in non-adjacent cells (Part n).

Question 3 – Database Management

This question tested candidates' ability to use the various features of Database Management software.

This question was satisfactorily done by the majority of candidates. Some areas of difficulty were as follows:

- Performing queries. Most of the candidates could not complete the required queries. Creating calculated fields and joining tables proved challenging to many candidates (Parts f and g).

- Reports. Grouping, totals per group and inserting candidate number as a footer seemed to be challenging for some candidates (Part j).

**Paper 03/2 – Alternative to School-Based Assessment (SBA)**

This paper is the alternative to the SBA and consisted of three questions testing Word Processing, Spreadsheet and Database Management profiles.

Question 1 – Word Processing

This question tested candidates' knowledge of the features of a word processing programme.

This question was well done by the majority of candidates. Some areas of difficulty were as follows:

- Justification. Most candidates were able to identify the line spacing used but were unable to recognize that full justification was used in the paragraph (Part c).

- Header, footer, footnote and endnote. The majority of candidates was unable to recognize that the footnote was used in the given document (Part d).

- Mail merge. The majority of candidates could not provide the correct names of the two documents (data source and primary document) (Part e).

- Formatting. Many candidates could not identify that the subscript format had been applied to the '2' in the text '$H_2O$' (Part i).

Question 2 – Spreadsheets

This question tested candidates' knowledge of the features of a spreadsheet programme.

It was satisfactorily done by the majority of candidates. Some areas of difficulty were:

- COUNT function. Many candidates were unfamiliar with the COUNT function (Part c (ii)).
- Row/column title locking. The majority of candidates were not familiar with this feature and did not attempt this part of the question (Part d).

Question 3 – Database Management

This question tested candidates' knowledge of the features of a Database Management programme.

This question was satisfactorily done by the majority of candidates. Some areas of difficulty were as follows:

- Primary keys. Many candidates could not identify the primary keys for the three tables provided (Part a).
- Joining tables. The majority of candidates did not demonstrate an understanding of the concept of relationships among tables and therefore could not create the relationships among the three given tables (Part d).