CARIBBEAN EXAMINATIONS COUNCIL

REPORT ON CANDIDATES' WORK IN THE CARIBBEAN SECONDARY EDUCATION CERTIFICATE JANUARY 2008

INFORMATION TECHNOLOGY

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GENERAL PROFICIENCY EXAMINATION

JANUARY 2008

GENERAL COMMENTS

In January 2008, 375 candidates from the participating territories entered for the Information Technology Technical Proficiency examinations. This represents a decrease of 37.2 per cent in registration for the Information Technology examination when compared with January 2007.

DETAILED COMMENTS

Paper 01 – Theory

This paper consisted of three sections with 14 compulsory questions testing the theory profile. Section I consists of five questions testing Hardware and Software; Section II consists of five questions testing Applications and Implications while Section III consists of four questions testing Programming.

The mean score was 39.4 out of 90. The range of marks obtained was 0 – 80.

Section III (Programming) continues to challenge candidates. Many candidates lacked the ability to understand concepts associated with programming; follow the logic of an algorithm and write simple code in a programming language to implement the algorithm.

Candidates continue to display an inability to express themselves clearly in their answers. Complete sentences were not used in many cases. Correct spelling and grammar were lacking in many cases.

Section I – Hardware and Software

Question 1

This question tested candidates' ability to identify the basic components of a computer system.

Part (a) of the question posed some difficulty to candidates as they were not able to identify a primary and secondary storage device, from the given specifications of a computer system.

Part (b) of the question was generally well done by the candidates. Candidates correctly identified two peripheral devices found in the computer system.

Part (c) of the question posed a great deal of difficulty to candidates. Few candidates attempted this question and those who did failed to show the computations for their answer. Candidates should be reminded that 1 Kb = 1024 bytes and not 1000 bytes.

Question 2

This question tested candidates' knowledge of the Central Processing Unit (CPU).

Part (a) of the question was generally well done. Some candidates mentioned CU for Control Unit and ALU for Arithmetic and Logic Unit. Candidates should use the full names of the two sub-units of the Central Processing Unit.

Part (b) of the question was generally well done by the candidates. Candidates provided proper responses for the functions of the two sub-units of the CPU.

Part (c) of the question posed some difficulty to candidates. Most candidates specified ROM instead of RAM as the type of memory most closely connected to the CPU. Most candidates did not seem to have a clear understanding of the difference between ROM and RAM.

Part (d) of the question was well done by the majority of the candidates who identified the chip that holds the CPU as the processor or the microprocessor.

Question 3

This question tested candidates' ability to distinguish between the types of user interfaces.

Part (a) of the question was well done. The majority of candidates was able to identify the interfaces but did not use the correct terminology such as "Graphical User Interface" and "Command Line Interface".

Part (b) of the question was well done. Many candidates indicated that the Graphical User Interface was more appropriate for a novice user and provided the reasons for their answer.

Part (c) of the question was well done. Most of the candidates indicated Operating System as the name of the system software.

Part (d) of the question had less than satisfactory responses from the majority of candidates who mentioned a particular version of the Windows operating system rather that providing the name of another operating system software such as Linux or Unix.

Question 4

This question tested candidates' understanding of how data are stored and manipulated within the computer.

Part (a) of the question posed difficulty to candidates. The majority of candidates could not compute the Binary Coded Decimal Representation of -12.

Part (b) of the question was generally well done by the candidates.

Part (c) of the question was well done by the candidates.

Part (d) of the question was well done by the candidates.

Question 5

This question tested candidates' understanding of the concepts associated with data communication.

WAN – Most candidates were able to provide a proper definition of a WAN.

Protocol – The majority of candidates could not provide a proper definition of the term, protocol.

Bandwidth – Most of the candidates could not provide a proper definition of the term bandwidth. Terms such as frequency, amount, speed and capacity were loosely used by the candidates.

Down-load - Most of the candidates seem to have a good understanding of the concept of download.

Point-to-point - Most of the candidates could not provide a proper definition of point-to-point transmission.

Upload – Most of the candidates seem to have a good understanding of the concept of upload.

Section II – Applications and Implications

Question 6

This question tested candidates' understanding of the application and implication of using a computer in a classroom.

Part (a) of the question was generally well done by the candidates. Candidates were able to indicate how the use of a computer in a classroom will enhance the classroom experience.

Part (b) of the question was not satisfactorily done by the candidates. Many candidates indicated keyboard and mouse which are normally part of a computer system rather than devices such as printer and scanner.

Part (c) of the question was well done by the majority of candidates who provided practical ideas to keep the system safe and functional. Use of fire alarms and physically locking the computer in a room were popular responses.

Question 7

This question tested candidates' understanding of the concepts associated with the Internet and intranet.

Part (a) of the question was generally well done by the candidates. Candidates were able to state the difference between the Internet and the intranet.

Part (b) of the question was not satisfactorily done by the candidates. Candidates could not provide a clear statement to indicate how the terms, "web-browser", "web-sites" and "web-pages" differ.

Part (c) of the question was generally well-done by the candidates. Some candidates confused e-commerce with videoconferencing.

Question 8

This question tested candidates' understanding of the measures used to secure data.

Part (a) of the question was well done by the candidates. Candidates were able to provide the two steps such as checking ID and calling the employment agency for verification.

Part (b) of the question was well done by the candidates. Candidates were able to give good reasons for the steps indicated in part (a).

Part (c) of the question was not satisfactorily done by the candidates. Some candidates associated computer fraud with the inability to use a computer.

Part (d) of the question was well done by the majority of candidates who provided good examples such as "working for a competitor" and "placing virus onto the system".

Question 9

This question asked candidates to explain the role of four persons in a setting where computers are used to conduct everyday business.

Part (a) of the question was not satisfactorily done by the candidates. Many candidates deemed a file librarian as one working only with books and not with computers or computer files.

Part (b) of the question was not satisfactorily done by the candidates. Many candidates failed to described the computer consultant as one who is sought for consultation or as one giving professional advice on computer systems.

Part (c) of the question was not satisfactorily done by the candidates. Many candidates described the data communications specialist as one who specializes in ensuring that computer networks are maintained in good working order, as opposed to designing and maintaining communications systems.

Part (d) of the question was satisfactorily done by the candidates. Most of the candidates who attempted this question referred to the systems analyst as one who analyzes the computer systems, and were not specific in mentioning the role of performing system reviews, or the design of new systems.

Question 10

This question tested candidates' understanding of the functions and use of a scanner and barcode reader as computer-related hardware.

Part (a) of the question was well done by the candidates. Some candidates were unable to distinguish between the scanner and the barcode reader.

Part (b) of the question was well done by the candidates. Popular responses include supermarket and retail industry.

Part (c) of the question was not satisfactorily done. Most candidates stated job titles of persons who would most likely use BOTH devices rather than a job title for each of the devices. Also, many candidates did not clearly indicate how the device would make the person's job more efficient. The job title most candidates stated was cashier; one who would use a barcode reader to search the names and prices of items rather than keying in the item codes or manually searching for item names and prices.

Section III - Programming

Question 11

Part (a) of the question required candidates to write a one-line example of code to illustrate the generation of programming language. Many candidates were able to give correct examples for Machine Language and High Level Languages but not for Assembly Language. Some candidates explained the difference among the generations rather than writing the one-line examples.

Part (b) of the question asked candidates to order the generations of programming languages from the earliest to the most recent. Most candidates were able to provide satisfactory responses. Some candidates also wrote '1st generation, 2nd generation, 3rd generation' instead of machine, assembly and high-level language.

Question 12

This question tested the candidate's ability to write program code to implement a given algorithm and to trace the execution of the statements.

Part (a) of the question was not satisfactorily done. Most candidates wrote in a pseudocode format rather than the actual code of a programming language.

Candidates wrote statements such as:

(a) "User inputs two numbers" as opposed to **Read Num1, Num2:**
(or similar structure)
(b) "Input 1, 2;" where the values 1 and 2 represented variables

Many candidates also did not seem to be aware of the importance of assigning value to variables from right to left. As a result candidates wrote:

num1 = temp; when they meant, **temp = num1;**

Part (b) of the question required candidates to complete the trace table. Many candidates did not attempt this part of the question. Following the logic of the question proved difficult for most candidates who attempted this question and they were only able to accurately calculate one of the required values.

Question 13

This question asked candidates to match various types of errors which occurred during processing with the appropriate description of that error.

Part (a) of the question was attempted by the majority of the candidates who were able to match the example given with the error described.

Part (b) of the question required candidates to match the correct error term with the specific type of error. Many candidates did not attempt this part of the questions. Of the candidates who attempted this part, most of them were able to provide two out of four satisfactory responses.

Question 14

This question asked candidates to explain the meaning of four terms associated with running a program.

The majority of candidates did not know what the terms, object code, compiling, executing and interpreting meant. The process and steps involved in writing and executing a piece of code were not understood, as well as the difference between compiling and interpreting. Some incorrect answers included "transferring data from one place to the other", "bringing all the data together in one place", and "translating the program so humans could understand it".

Paper 02 – Practical

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

The mean score for paper 02 was 84.4 out of 150. The range of marks obtained by the candidates was 5 – 148.

Candidates' performance in the Database Management profile was satisfactory however their performance was notably better in the word processing and spreadsheets profiles.

Question 1

This question tested candidates' ability to use the various features of a word processing program. The majority of candidates gave satisfactory responses.

Part (b) of the question was generally well done by the majority of candidates.

Part (c) of the question was satisfactorily done by the candidates but some candidates could not use column break and were unable to place the required paragraphs in the correct columns.

Part (d) of the question was generally well done by the majority of candidates. Some candidates changed the headings of the two paragraphs to the text 'uppercase' and 'italicize' rather than formatting the headings to uppercase and italics.

Part (e) of the question was generally well done by the majority of candidates. However, some candidates only fully justified the text in one of the two paragraphs rather than both.

Part (f) of the question was generally well done by the candidates but some candidates changed the line spacing of both paragraphs rather than the second paragraph only. Some candidates also used double line spacing rather than 1.5 line spacing.

Part (g) of the question was generally well done by the candidates but some candidates indented the bodies of the paragraphs rather than the headings only.

Part (h) of the question was well done by the candidates but some candidates inserted the title at the centre of the first column rather than the centre of the page.

Part (i) of the question was well done by the candidates. Some candidates used Times New Roman font rather than Arial font.

Part (j) of the question was satisfactorily done by the candidates. Some candidates format the '2' as subscript rather than superscript or did not apply any formatting on the '2'.

Part (k) of the question was well done by the candidates. Some candidates applied the bullets to the wrong text.

Part (m) of the question was well done by the candidates but some of them placed the footer in the wrong location.

Part (o) of the question was well done by the candidates. Some candidates incorrectly exchanged the bodies of the paragraphs and left the headings of the paragraphs unchanged.

Part (p) of the question was satisfactorily done by the candidates. Some candidates had typographical errors in the data source file while other candidates did not print out the data source file.

Part (q) of the question was satisfactorily done by the candidates. Some candidates inserted the merge fields and did not remove the place holders for the merge fields while others did not place a space between the merge fields.

Part (r) of the question was satisfactorily done by the candidates. Some candidates did not print both merge letters while some candidates edited the letters after merging.

Question 2 – Spreadsheet

This question tested candidates' ability to use the various features of a spreadsheet program. The majority of candidates gave satisfactory responses.

Part (b) of the question was generally well done by the candidates but some of them used the incorrect formula to add the values in the two required rows.

Part (c) of the question was well done by the candidates.

Part (d) of the question was well done by the candidates as they were able to add a new column and a new row with the required headings.

Part (e) of the question was well done by the majority of the candidates. Some candidates did not use the correct range to perform the SUM function.

Part (f) of the question was generally well done by the candidates.

Part (g) of the question was well done by the candidates.

Part (h) of the question was well done by the candidates. Candidates were able to insert a footer with their candidates number at the right of the worksheet.

Part (i) of the question posed great difficulty to the majority of candidates. Some candidates sorted the data on the Region column instead of the REGTOT column while others sorted in a single column rather that all the columns.

Part (j) of the question was well done by the majority of candidates but some candidates forgot to insert the blank row between the title row and the worksheet data.

Part (k) of the question posed some difficulty to the candidates. Most of the candidates did not use the correct formula to calculate the Total Government Fees. The Average and the Maximum functions were used correctly by the majority of candidates but some candidates did not use the correct format for the date function.

Part (l) of the question posed great difficulty to the candidates. The majority of candidates did not attempt the filtering of data in the worksheet. The candidates who attempted this question provided satisfactory responses. Some candidates perform separate filters, one for each condition rather than one filter for the combined conditions.

Part (m) of the question was generally well done by the majority of candidates but some candidates did not use proper labelling.

Part (n) of the question was generally well done by the majority of candidates but some candidates did not use the required labelling.

Question 3– Database Management

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

Many candidates provided satisfactory responses but some candidates found the components related to querying the database challenging.

Part (b) of the question was generally well done by the candidates as they were able to add a new field called Cost.

Part (c) of the question was well done by the candidates as they were able to insert the correct data in the Type and Cost fields.

Part (d) of the question was well done by the candidates but some of them sorted the table in descending order rather than in ascending order.

Part (e) of the question posed some difficulty to candidates. Many candidates could not sort the table on the two required fields and sorted on one of the two required fields.

Part (f) of the question posed some difficulty to candidates. Most of the candidates searched the table on one condition, Registrar = "Redspider" and ignore the other condition, Billing = "Chase Bank".

Part (g) of the question posed some difficulty to candidates. Many candidates used the correct criterion but could not display the required fields since they did not join the two relevant tables.

Part (h) of the question posed great difficulty. Many candidates did not attempt this question but for those who attempted it, while they were able to create the calculated field they could not compute the total VAT paid.

Part (i) of the question was not attempted by the majority of candidates. Of those candidates who attempted it, all the required queries were not copied to the word processing document.

Part (j) of the question was generally well done by the majority of candidates who created the basic report.

Part (k) of the question posed some difficulty to candidates. Many candidates did not use grouping in the report and did not sort on the required field. Many candidates also did not include the total cost in their reports and did not insert their candidate numbers as a footer.

Paper 03/2 – Alternative to the SBA

Paper 03/2 is the theoretical alternative to the practical School-Based Assessment (SBA) and consists of three questions testing the Word Processing, Spreadsheet and Database Management profiles.

The mean score for this paper was 31.6 out of 60. The range of marks obtained by the candidates was 4 - 54.

Question 1 – Spreadsheets

This question tested candidates' understanding of the features of a spreadsheet Package.

Candidates who scored highly on this question displayed the ability to answer the question succinctly, and not give details on how to achieve the answer; in addition functions and formulas were correctly written, including the use of brackets and the equal sign.

Part (a) of the question was generally well done by the candidates. Some responses incorrectly stated the column letter instead of the field name.

Part (b) of the question required candidates to write functions to calculate the minimum, average and total values of some ranges. Many candidates wrote the incorrect format of a function. Some incorrect responses for the sum function included:

- =sum F2:F12
- Total(F2:f12)
- F2*F12(Sum)

Many candidates also include the word SUM before formulas. For example, if a correct formula is =B3*C15, candidates wrote =Sum(B3*C15), which is incorrect.

Part (c) of the question asked the candidate to STATE the minimum value in a column. Most of the candidates responded with the correct answer. However, there were some candidates who wrote the cell location instead of the value, or stated the minimum value of another range.

Part (d) of the question asked for a formula such as =F15-G15. Some candidates incorrectly wrote the formula as =Total Balance Owed – Total YTD Sales.

Part (e) of the question required the response to the currency formatting feature for a range of numbers. Some candidates wrote bold, underline and other features from a word processing perspective instead of the currency or comma feature.

Part (f) of the question asked for the criteria that would be used in a query to produce customers with type P. Although the correct response was TYPE= 'P', many candidates wrote TYPE P or wrote in words, what they would have used to obtain the result. There were a few candidates who sketched where the criteria would be placed if they were using Microsoft Access, which was also acceptable.

Part (g) of the question asked for the number of records that would be produced by the query given in part (f). Most of the candidates provided the correct results, a few candidates wrote the records out, which was also acceptable.

Part (h) of the question asked the candidate to write the ranges that would have been used from the worksheet to produce a chart. Two ranges were required, but many candidates wrote only one range of data and omitted the range for the corresponding customers. Other candidates explained how they would produce the chart, but did not indicate the ranges involved.

Question 2 – Word Processing

Question 2 tested the candidate's recognition of the features of a word processing package that would be fairly common and rehearsed in a practical setting.

This question was generally well done by the majority of candidates.

Part (a) of the question tested the candidate's ability to identify formatting features used in word processing document. The majority of candidates were able to identify two formatting features used in the given document.

Part (b) of the question asked candidates to identify the mail merge as a word processing feature used to create customized copies of a standard document. Many candidates were able to identify the feature and to provide an advantage of using it. Some candidates identified email as the feature being requested.

Part (c) of the question asked candidates to identify the merge fields that would be used in a mail merge from the data given in the spreadsheet. Most candidates were able to identify the merge fields used but some candidates selected all the fields.

Part (d) of the question tested the candidate's ability to name the file used to hold data in a mail merge (data source). Most of the candidates provided satisfactory responses while some provided incorrect responses.

Part (e) of the question tested the candidate's knowledge of the placement of a footnote and a header. Most of the candidates confused footer with footnote and footnote with endnote and provided incorrect responses.

Part (f) of the question asked candidates to identify whether a footer or endnote is found in the letter and to state its text. Many candidates provided unsatisfactory responses as they confused footer with footnote and footnote with endnote.

Part (g) of the question tested candidates on the function of the spell-check feature of the word processor. To answer this question properly a candidate would need to know when a word is misspelled. This proved interesting as some words that were correctly spelt were deemed incorrect because the student did not know the correct spelling or was not familiar with the word (Bristol, disregard, Accountant General, pharmaceuticals). Overall, the candidates demonstrated that they knew what the spell-check feature was intended to do and their role in deciding how to treat a spell-check notification.

Part (h) of the question asked candidate to identify the item at the top of the document. Many candidates treated the item as the entire letterhead rather than the logo or picture used in the letterhead. Over half of the candidates provided satisfactory responses.

Part (i) of the question asked candidates to identify the feature used to record the names and telephone numbers and to explain the layout. Most of the candidates correctly indicated that a table was used to record the names and telephone numbers in the letter but many of them could not identify that each table was in a separate column.

Question 3

This question tested candidates' understanding of the various features of a Database Management program.

The majority of candidates provided satisfactory responses. Some responses however indicated that candidates did not have a good understanding of Database Management concepts.

Part (a) of the question tested candidates' ability to identify the number of fields and records in a database table. Most of the candidates provided unsatisfactory responses as they included the row with the field names, as a record and mentioned 13 instead of 12 records. Some candidates mentioned 6 fields instead of 7 fields as they did not count the "CustNo" field.

Part (b) of the question asked candidates to identify the data type for the Type and Rep fields. Most of the candidates provided unsatisfactory responses.

Part (c) of the question was generally well done by the majority of candidates. Some candidates could not identify appropriate primary keys for each of the table.

Part (d) of the question asked candidates to write simple queries. The majority of candidates could not give the correct queries for part (i) to part (iii). Part (iv) required the candidates to do a calculated field. Again, the majority of candidates could not state the correct formula for the calculated field.

Part (e) of the question asked candidates to write the result of the query in part d (ii). The majority of candidates could not write the result of the query.

Part (f) of the question requires candidates to analyze a report and identify the fields used for grouping, sorting as well as the table from which the field originated. The majority of candidates provided unsatisfactory responses. Some candidates seem unfamiliar with the concept of grouping.