TEST CODE **01529010**

FORM TP 2005093

MAY/JUNE 2005

CARIBBEAN EXAMINATIONS COUNCIL

SECONDARY EDUCATION CERTIFICATE EXAMINATION

INFORMATION TECHNOLOGY

Paper 01 – General and Technical Proficiencies

THEORY

1 1/2 hours

03 JUNE 2005 (p.m.)

INSTRUCTIONS TO CANDIDATES

1. **This paper has four sections.**

   SECTIONS *ONE* AND *TWO* ARE TO BE DONE BY *ALL* CANDIDATES.

   ***TECHNICAL PROFICIENCY* CANDIDATES MUST DO SECTIONS ONE, TWO, AND *THREE*.**

   ***GENERAL PROFICIENCY* CANDIDATES MUST DO SECTIONS ONE, TWO, AND *FOUR*.**

2. **Number EACH answer correctly in the answer booklet.**

3. **You may write Basic or Pascal (or any other language) code in those questions requiring pseudocode/algorithm.**

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

Copyright © 2004 Caribbean Examinations Council.
All rights reserved.

SECTIONS I and II

TECHNICAL AND GENERAL PROFICIENCIES

ANSWER ALL QUESTIONS.

SECTION I – 30 marks

1. State the function of EACH of the following hardware components:

(a) Control unit **(1 mark)**

(b) Arithmetic and logic unit (ALU) **(1 mark)**

(c) Read Only Memory (ROM) **(1 mark)**

(d) Random Access Memory (RAM) **(1 mark)**

Total 4 marks

2. Give ONE similarity and ONE difference between EACH of the following terms:

(a) ROM and EPROM **(2 marks)**

(b) Byte and word **(2 marks)**

(c) Floppy disk and Hard disk **(2 marks)**

Total 6 marks

3. In your answer booklet write the letters A to E to represent EACH application in the table below and beside EACH letter write the Roman Numeral to match the applications with the MOST APPROPRIATE input device.

	Application
A	Cheque processing
B	Marking multiple-choice examination
C	Point-of-sale
D	Games
E	Architectural design

	Input Device
(i)	barcode reader
(ii)	joystick
(iii)	graphic tablets
(iv)	optical mark reader
(v)	magnetic ink character recognition

Total 5 marks

GO ON TO THE NEXT PAGE

4. (a) Name ONE direct access secondary storage device and ONE serial access secondary storage device. **(2 marks)**

(b) With reference to a diskette, state the relationship between a track and a sector? **(2 marks)**

(c) State the optical storage medium that is BEST suited for the storage of a movie. **(1 mark)**

Total 5 marks

5. (a) Convert the decimal number 25 to binary, using an eight-bit representation. **(1 mark)**

(b) The binary number 1100101101 uses 10 bits to store sign and magnitude. What is the decimal number equivalent? **(2 marks)**

(c) State the Binary Coded Decimal (BCD) representation for the decimal number 358. **(2 marks)**

(d) State the eight-bit twos complement representation of the decimal number 63. **(2 marks)**

Total 7 marks

6. (a) Name the software package that would have mail merge. **(1 mark)**

(b) Explain why mail merge is important in this software package. **(2 marks)**

Total 3 marks

SECTION II – 30 marks

7. (a) State the relationship that exists among 'web site', 'web page' and 'web browser'. **(3 marks)**

(b) Explain the difference between 'Electronic mail' and 'Internet relay chat'. **(2 marks)**

Total 5 marks

8. The Police Department has introduced a computer system in every police station around the country.

(a) List TWO uses of the computer in the police station. **(2 marks)**

(b) State TWO devices that may be used with the computer. **(2 marks)**

(c) List TWO Information Technology skills the operator of the computer should have. **(2 marks)**

Total 6 marks

9. (a) Name and describe ONE physical access method which would ensure that ONLY authorized personnel have access to important computer equipment. **(2 marks)**

(b) Describe ONE software access method which would ensure that ONLY authorized personnel have access to software and data. **(2 marks)**

Total 4 marks

10. A computer technician visits a company stating that he was sent to "fix some computers". He is not known to the company.

(a) What do you understand by computer fraud? **(1 mark)**

(b) Explain with reasons, TWO actions that you would carry out to verify that this technician is on official business. **(4 marks)**

Total 5 marks

11. (a) Describe ONE job function of EACH of the following:

(i) File Librarian **(1 mark)**

(ii) Electronic Data Processing Auditor **(1 mark)**

(iii) Computer Consultant **(1 mark)**

(iv) Data Communications specialist **(1 mark)**

(b) (i) What is 'teleconferencing'? **(1 mark)**

(ii) a) State THREE advantages of teleconferencing. **(3 marks)**

b) State TWO hardware requirements for teleconferencing. **(2 marks)**

Total 10 marks

GO ON TO THE NEXT PAGE

THIS SECTION IS FOR TECHNICAL PROFICIENCY CANDIDATES ONLY.

SECTION III – 30 marks

PROGRAMMING

ANSWER ALL QUESTIONS.

12. Write an algorithm using pseudocode to do the following sequence of tasks:

(a) Read in two values **(1 mark)**

(b) Multiply both values by the number 10 and add the results **(2 marks)**

(c) Square both values and add the squares **(2 marks)**

(d) Check if the answer to (**b**) is greater than the answer to (**c**) **(1 mark)**

(e) If the question **c** answer is greater, print a statement indicating that "The squares have won." If the question **b** answer is greater, print a statement indicating that "The Products have produced a win." **(2 marks)**

Total 8 marks

13. Use a structured language to code an algorithm that will find the sum and average of a collection of integers.

(a) Allow the user to enter the quantity of values being used. **(1 mark)**

(b) Allow the user to input the values. **(2 marks)**

(c) Calculate the sum and the average. **(2 marks)**

Total 5 marks

GO ON TO THE NEXT PAGE

14. (a) Give ONE example of a high level language and explain how it is different from an assembly level language. **(2 marks)**

(b) The following is a small program segment. For EACH line, write a short comment explaining what the statement does.

```
For i = 1 to count
        Print "Item No.", i;
Next i
```

(3 marks)

(c) The following code uses the operator '%' to find the remainder after one number has been divided by another (e.g. 5 % 4 = 1 and 12 % 5 = 2). Use a trace table to show the output of the program.

```
For i  = 1 to 3
        If i  % 3 = 0
                Print A
        Else
                Print B
```

(2 marks)

Total 7 marks

15. Develop pseudocode and then translate the pseudocode to a structured language for the following sequence of steps.

(a) Prompt the user for a value. Announce that this value is a bid being placed on a valuable artifact - a 1751 antique watch. **(2 marks)**

(b) Accept the value. **(2 marks)**

(c) Compare the value received from the user with the minimum price of the item – a value that you have as a part of your program (antique watch – 7,000). **(2 marks)**

(d) Indicate to the user if his bid has been successful (if the bid is higher than the minimum it is a successful bid). If the bid is not successful indicate that also. **(4 marks)**

Total 10 marks

THIS SECTION IS FOR GENERAL PROFICIENCY CANDIDATES ONLY.

SECTION IV – 30 marks

PRODUCTIVITY TOOLS

ANSWER ALL QUESTIONS.

16. The following questions relate to Word-processing:

(a) Identify TWO formatting features used in the following letterhead of an organization:

PREMIER TRAINING ACADEMY
100 South Road, New Town, Murray Town
Tel: 1-800-235-7645; email: pta@training.net

(2 marks)

(b) The text in the body of the letter aligns to both the left and right margins. What justification has been applied to the text? **(1 mark)**

(c) How would you interchange the second and fourth paragraphs in a document? **(2 marks)**

(d) Write an efficient way to place ALL texts after the second paragraph on page 2 of the document. **(1 mark)**

(e) State TWO ways to indent the text in the second paragraph of a document. **(2 marks)**

(f) What is the purpose of the print preview feature of your word processing program? **(1 mark)**

(g) Page 3 of a document was not clearly printed. State an efficient way of reprinting only page 3 of the document. **(1 mark)**

Total 10 marks

17. Questions (a) - (h) refer to the following spreadsheet:

	A	B	C	D	E	F
1		2001	2002	2003	Total	%
2	Chemistry	100	75	65		
3	Biology	40	50	70		
4	Physics	25	15	5		
5	Total					

The spreadsheet above indicates the number of science graduates from a college during the period: 2001 – 2003.

(a) How many rows are in the spreadsheet? **(1 mark)**

(b) In which range on the spreadsheet are the Biology graduates for the three years indicated? **(1 mark)**

(c) Indicate the cell and the formula to be inserted in the cell to compute the number of graduates in 2001. **(2 marks)**

(d) What is an efficient way of computing the number of graduates for 2002 and 2003? **(1 mark)**

(e) The formula E2/E5 in Cell F2 was copied to Cell F3. What is the formula in Cell F3? **(1 mark)**

(f) The value in cell B3 is changed. List TWO cells whose value will be affected, given that formulae are inserted to compute the totals. **(2 marks)**

(g) The formulae in the range F2:F4 produce decimal values. How can you convert the values into percentages with 2 decimal points? **(1 mark)**

(h) What is the default alignment for numeric data? **(1 mark)**

Total 10 marks

18. The following questions relate to Databases:

The owner of a small computer store maintains a stock card for each item in the store. A sample of the stock card is shown below:

Item No	A100
Description	Mouse Pad
Quantity	200
Price	3.00
Fast Moving	Yes

(a) Design the structure of a database table. Your table structure should include appropriate field names, Field Type and Field Size. The data in the Fast Moving field should only be Yes or No. **(3 marks)**

(b) Give ONE example of another record in the table. **(1 mark)**

(c) Which field in the table must have a unique value? **(1 mark)**

(d) State TWO ways to arrange the records in a table in a specific order. **(2 marks)**

(e) List TWO meaningful queries that would be of benefit to the owner of the store. **(2 marks)**

(f) The storeowner needs a price list showing the Item No, Description and Price. How can this report be generated? **(1 mark)**

Total 10 marks

END OF TEST