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CARIBBEAN EXAMINATIONS COUNCIL

SECONDARY EDUCATION CERTIFICATE EXAMINATION

INFORMATION TECHNOLOGY

Paper 01 – General and Technical Proficiencies

THEORY

1 1/2 hours

08 JUNE 2006 (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.

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SECTIONS I and II

TECHNICAL AND GENERAL PROFICIENCIES

ANSWER ALL QUESTIONS.

SECTION I – 30 marks

1. (a) Explain the term 'peripheral device'. **(1 mark)**

(b) Give TWO examples of a peripheral device in a computer system. **(2 marks)**

Total 3 marks

2. You are told that your new computer system will consist of 256 megabytes of RAM, a high-resolution 19-inch monitor, a 100-gigabyte hard disk drive and an optical mouse.

(a) Explain the difference between primary and secondary storage. **(1 mark)**

(b) Identify which of the above computer components are suited for

(i) primary storage

(ii) secondary storage. **(2 marks)**

(c) Explain which of the above would store the most data. **(1 mark)**

(d) Explain how you would know if the monitor has high resolution. **(2 marks)**

Total 6 marks

3. Copy EACH of the following and state whether it can be described as (A) soft copy, (B) hard copy, (C) both hard and soft copy, or (D) neither hard nor soft copy:

(a) Sound

(b) Microfilm

(c) Visual display unit

(d) Non-impact printer **(4 marks)**

Total 4 marks

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4. Perform calculations to determine which of the following examples represents binary coded decimal, 8-bit sign and magnitude or even parity. Make sure to state your answer in each example.

(a) 1011000 1

(b) -19 = 1111 0001 1001

(c) -4 = 10000100 **(6 marks)**

Total 6 marks

5. Your teacher has given you notes on Windows NT, Windows 2000, UNIX and Linux.

(a) State the type of system software illustrated in the above examples. **(1 mark)**

(b) Explain why this software is necessary for a computer system. **(1 mark)**

(c) For EACH of the following types of application software, state whether it can be described as general purpose, custom-written, integrated or specialized.

(i) A program that includes all the major types of applications and brings them together into a single software package

(ii) Software written solely for a specific task, and its users are trained in a particular field

(iii) Software which can be modified by writing or adding programming modules to perform specific tasks

(iv) Software which is not specific to any organization or business and can be used by anyone. **(4 marks)**

Total 6 marks

6. (a) Name the TWO types of user interface which are represented in the figures below:



Figure 1

C> dir

Figure 2

(2 marks)

(b) Discuss which user interface would be better for someone who is not familiar with a computer. **(2 marks)**

(c) State the name of another user interface not mentioned in (b). **(1 mark)**

Total 5 marks

SECTION II – 30 marks

7. A new business uses two pieces of equipment shown below. Name them and explain how they would help clients or customers.





(4 marks)

Total 4 marks

8. (a) Explain what you understand by the statement 'Information is a commodity'.

(2 marks)

(b) Name TWO uses of information that can be helpful in decision making. **(2 marks)**

Total 4 marks

9. Write the words or phrases that the following words represent and give ONE advantage of using EACH.

(i) E-mail

(ii) E-commerce

(iii) IRC

(iv) FTP **(8 marks)**

Total 8 marks

10. A consultant is hired to study the computer systems at your office. One of her recommendations was as follows in the paragraph supplied:

> *In addition to software security needs, the department must seek ways to secure the physical components entrusted to it. A secure room is to be identified where fireproof cabinets can be placed to store backup copies of data disks and archived files. These backup copies and files must be provided with virus protection and then encrypted prior to being stored.*

Explain EACH of the underlined words. **(4 marks)**

Total 4 marks

11. A young college student is accused of Electronic Eavesdropping and Unauthorized Surveillance. During the trial it was revealed that the college student used software to access the computer of another student while she was chatting with her friends. She could read all the messages she (other student) wrote and the messages her friends wrote to her. At the end of the trial one of the charges was dropped.

(a) Explain Electronic Eavesdropping and Unauthorized Surveillance. **(2 marks)**

(b) Discuss which charge was kept and why. **(2 marks)**

Total 4 marks

12. Three of the jobs in Information Technology are data entry clerks, data communications specialists and database administrators.

(a) Explain what each of these jobs involves. **(3 marks)**

(b) Show how EACH of these jobs is related. **(3 marks)**

Total 6 marks

TECHNICAL PROFICIENCY

THIS SECTION IS FOR TECHNICAL PROFICIENCY CANDIDATES ONLY.

SECTION III – 30 marks

PROGRAMMING

ANSWER ALL QUESTIONS.

13. Explain the difference between EACH of the following pairs of terms:

(a) Machine language and high level language

(b) Second generation and fourth generation languages

(c) Pseudocode and trace table

(d) Input and output **(8 marks)**

Total 8 marks

14. Consider the following segment of code:

```
Read X, Y
While (X <> Y) DO
        Print Y
        Y = Y + 1
Print Y
```

(a) Explain what is meant by:

(i) <>

(ii) Y = Y + 1 **(3 marks)**

(b) Write an example of a variable from the above segment of code. **(1 mark)**

(c) Use a trace table to determine the output of the code if X=4 and Y= 2. Use the headings X Y Print Y. **(3 marks)**

Total 7 marks

15. Explain what is produced by EACH of the following:

(a) Object code

(b) Executing

(c) Test data

(d) Syntax error

(e) Dry run

(f) Debugging **(6 marks)**

Total 6 marks

16. Write an algorithm to perform the following sequence of tasks:

(i) Read a number NUM, and a letter LET

(ii) Add 5 to the number NUM and place the result in ANS

(iii) If LET is equal to 'A', then subtract 4 from the number NUM and place the result in ANS

(iv) Print the results of NUM and LET. **(5 marks)**

Total 5 marks

17. Copy the labels EX1, EX2, EX3 and EX4 on separate lines on your answer book. Then, write the corresponding example, Name 1 to Name 4, which matches the appropriate label.

```
EX1:  IF weather = 'SUNNY' Then SMILE
EX2:  While (ANSWER='Y') Do
            Print 'Yes'
EX3:  hours > 12
EX4:  Grade = Grade + 5
```

Name1: a logical operation
Name2: an arithmetic operation
Name3: conditional statement
Name4: a loop **(4 marks)**

Total 4 marks

GENERAL PROFICIENCY

THIS SECTION IS FOR GENERAL PROFICIENCY CANDIDATES ONLY.

SECTION IV – 30 marks

PRODUCTIVITY TOOLS

ANSWER ALL QUESTIONS.

18. The following questions relate to Word-Processing:

(a) Explain how you would move the last paragraph in your document to be the second paragraph of the document. **(1 mark)**

(b) Why would the insertion point move to the centre of the page if you press the tab key? **(1 mark)**

(c) You have a one-page document with four paragraphs. Suppose a page break is inserted between the second and third paragraphs. What will happen to your document? **(1 mark)**

(d) Explain how you would insert the page number automatically at the centre of the bottom of EACH page of the document. **(1 mark)**

(e) You have right-aligned the third paragraph of your document. What would happen to the text in the paragraph? **(1 mark)**

(f) Explain how you would set the left and right margins at 1.5" for the entire document. **(1 mark)**

(g) What is the most efficient way of printing pages 7 – 9 of a 15-page document? **(1 mark)**

(h) Explain how you would set the line spacing of the third paragraph to be 2". **(1 mark)**

(i) You have typed the text "INTERNET LAB". Explain how you would print the text across the length of the page. **(1 mark)**

(j) The heading of your document is "THE IMPORTANCE OF POWER PROTECTION". List TWO formatting features besides bolding, underlining and italicizing you would apply to the heading to highlight it. **(1 mark)**

Total 10 marks

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19. Questions (a) - (j) refer fo the following spreadsheet:

	A	B	C	D	E
1	EASYSURF				
2	REVENUE: JAN - MAR 2006				
3					
4	SERVICE	JAN	FEB	MAR	TOTAL
5	Surfing	600	720	800	
6	Printing	100	130	180	
7	Phone Calls	300	200	600	
8	Diskette	50	60	80	
9	Scanning	20	30	40	
10	TOTAL				

(a) State the range of data in the spreadsheet. **(1 mark)**

(b) Suppose you enter data in a cell and '####' appears in the cell. Why is this so? **(1 mark)**

(c) Suppose a cell has the value 356. List TWO ways to change the value to 386. **(1 mark)**

(d) Explain how you would centre the title 'EASYSURF' across the columns used by the spreadsheet. **(1 mark)**

(e) State the formula to place in cell B10 to compute the revenue collected in JAN. **(1 mark)**

(f) How would you enter the value 300 as a text in a cell? **(1 mark)**

(g) Explain how you would format all numeric values so that all values over 1000 are separated by commas. **(1 mark)**

(h) State the function to compute the maximum monthly revenue. **(1 mark)**

(i) In columns B, C and D, the months are left aligned while the values are right aligned. Why is this so? **(1 mark)**

(j) Suppose you have a formula in cell B10 to compute the revenue collected in JAN. What is the most efficient way of computing the revenue collected for FEB and MAR? **(1 mark)**

Total 10 marks

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20. The following questions relate to Databases:

You have been assigned as a Computer Lab Assistant in the Computer Laboratory of your school. Your first task is to create a database to store the items in the Computer Laboratory. You have decided to use one table called INVENTORY to store the data. For each different item in the lab you will store a unique item number, the description of the item, the quantity of items, the date of purchase and the name and telephone number of the supplier.

(a) Create a structure for the table INVENTORY. Your structure should indicate the name, data type and size for each field in your table. **(3 marks)**

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

(c) Explain how you would insert a new field in the table to store the current value of each item. **(1 mark)**

(d) You would like to arrange the records in descending order by date of purchase. What database feature would you use? **(1 mark)**

(e) Write a database query to show only the description and quantity of each item supplied by "ABC Computers". **(2 marks)**

(f) What database feature would allow you to print the data in a presentable manner for a meeting? **(1 mark)**

(g) State ONE reason for using a form to enter records into your database table. **(1 mark)**

Total 10 marks

END OF TEST