

CARIBBEAN EXAMINATIONS COUNCIL

CARIBBEAN SECONDARY EDUCATION CERTIFICATE®
EXAMINATION

13 JANUARY 2016 (a.m.)



FILL IN ALL THE INFORMATION REQUESTED CLEARLY IN CAPITAL LETTERS.

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SUBJECT INFORMATION TECHNOLOGY – Paper 02

PROFICIENCY GENERAL

REGISTRATION NUMBER

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SCHOOL/CENTRE NUMBER

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NAME OF SCHOOL/CENTRE

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CANDIDATE'S FULL NAME (FIRST, MIDDLE, LAST)

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DATE OF BIRTH

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JANUARY 2016

CARIBBEAN EXAMINATIONS COUNCIL

CARIBBEAN SECONDARY EDUCATION CERTIFICATE®
EXAMINATION

INFORMATION TECHNOLOGY

Paper 02 – General Proficiency

2 hours 15 minutes

READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

1. This paper consists of THREE sections and a total of TWELVE questions. Answer ALL questions in all THREE sections.
2. Write your answers in the spaces provided in this booklet.
3. Do NOT write in the margins.
4. Code is to be written in Pascal.
5. If you need to rewrite any answer and there is not enough space to do so on the original page, you must use the extra lined page(s) provided at the back of this booklet. **Remember to draw a line through your original answer.**
6. **If you use the extra page(s) you MUST write the question number clearly in the box provided at the top of the extra page(s) and, where relevant, include the question part beside the answer.**

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

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SECTION I

THEORY – 60 marks

Answer ALL questions.

1. The following table is an extract of the specifications for a particular laptop.

Item	Feature	Specification
(a)		Intel Core 2 Duo T7250
(b)		2000.0 MHz
(c)		15.4 inches
(d)		1280 × 800 pixels
(e)		120 GB
(f)		2048.0 MB
(g)		DDR2 SDRAM
(h)		Fire Wire Port, Mini PCI Port, Universal Serial Bus Port (×4), Video-S-Video
(i)		Vista Home Premium (32 bit)
(j)		Roxio Creator

Complete the table above by writing the feature from the list below that correctly corresponds to EACH specification.

Resolution	Processor speed	Drive size	Memory type	Operating system
Processor type	Available interfaces	Memory size	Utilities	Display size

Total 10 marks

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2. Data is represented within computers using various number systems.

Convert the following data to the number system specified. (Show all steps in the calculations.)

(a) (i) 89_{10} to binary

.....
.....
.....
.....
.....
.....

(3 marks)

(ii) 1001011_2 to decimal

.....
.....
.....
.....
.....
.....

(3 marks)

(b) Using binary addition, add 1011_2 to 101_2 .

.....
.....
.....
.....

(2 marks)



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(c) Using eight bits, find the two's complement representation of -33 .

.....
.....
.....
.....

(2 marks)

Total 10 marks



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3. (a) State the meaning of the following acronyms:

IRC

FTP

HTTP

HTML

URL

VoIP

(6 marks)

(b) State ONE similarity and ONE difference between the Internet and an Intranet.

Similarity:

.....

Difference:

.....

(2 marks)

(c) State TWO differences between a podcast and a blog.

.....

.....

.....

.....

(2 marks)

Total 10 marks



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4. For EACH of the following security options, describe ONE threat that it seeks to prevent.

(a) Use of passwords

.....
.....
(2 marks)

(b) Encryption

.....
.....
(2 marks)

(c) Firewall

.....
.....
(2 marks)

(d) Biometric system

.....
.....
(2 marks)

(e) Back up data

.....
.....
(2 marks)

Total 10 marks

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5. "This automated (computerized) application interacts with a bank's customer and issues money that the customer is currently withdrawing from an account."

Using this banking example, answer the following questions.

- (a) Identify ONE example of
 - (i) data that can be entered into this application
 - (ii) a device used to enter the data.

(2 marks)

- (b) Identify ONE example of
 - (i) information output
 - (ii) an output device.

(2 marks)

(c) Identify and describe the processing that utilizes the data identified in (a) above and generates the output identified in (b) above.

.....

.....

.....

.....

.....

(3 marks)

(d) List THREE advantages of using the automated information processing system over the corresponding manual system.

.....

.....

.....

.....

.....

(3 marks)

Total 10 marks

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6. The national census collects data on persons in a household. The data are collected on a paper-based form and then entered into a database. Data are collected in the following categories:

- The number of persons in the household
- Date of birth
- Educational level
- Current employment

(a) Describe how a user could confirm that data on the paper-based form are exactly equal to the copy of the data in the database.

.....
.....
(2 marks)

(b) Explain EACH of the following as it relates to the census above.

(i) One range check that could be used to validate any item of data collected.

Category of data:
Explanation of check:
.....
(2 marks)

(ii) One reasonableness check that could be used to validate any item of data collected.

Category of data:
Explanation of check:
.....
(2 marks)

(iii) One data type check that could be used to validate any item of data collected.

Category of data:
Explanation of check:
.....
(2 marks)

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- (iv) One consistency check that could be used to validate any item of data collected.

Category of data:

Explanation of check:

(2 marks)

Total 10 marks

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SECTION II

PRODUCTIVITY TOOLS – 15 marks

Answer ALL questions.

7. The following spreadsheet template is being used to generate students' grades. Answer Parts (a) to (c) based on the template.

	A	B	C	D
1	Mark	Grade		
2	≥ 50	P		
3	< 50	F		
4				
5	Surname	First Name	Marks	Grade
6	Seepersad	Alison	52	
7	John	Kathleen	32	
8	Barry	Ken	75	
9	Ramond	Sean	50	
10	Singh	Sarah	87	

- (a) Write a function for cell D6 that will insert an appropriate grade from cell B2 or B3 based on the student's mark.

.....
.....
.....

(4 marks)

- (b) Write a formula to find the average mark of the students.

.....
.....
.....

(3 marks)

- (c) State the default alignment for numeric data.

.....

(1 mark)

Total 8 marks

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8. Star Cricket Club keeps a file on its players. Some of the information stored on each member is as follows.

MemberID	Member Surname	Member First Name	Date of Birth	Email Address
001	Sammy	Peter	11/03/93	pali@hotmail.com
002	Baloo	Mandela	25/08/95	j_jack@yahoo.com
003	Smith	Keith	11/10/91	dsmith@gmail.com
004	Ali	Zachary	10/02/94	traviss@gmail.com

(a) State

(i) the key that can be used as a primary key.

.....
(1 mark)

(ii) the data type used for the "Date of Birth" field.

.....
(1 mark)

(iii) the surname of the member with MemberID = 003.

.....
(1 mark)

(iv) how many members were born before 19/10/94.

.....
(1 mark)

(b) Write

(i) ONE additional field which would be appropriate for inclusion in the file.

.....
(1 mark)

(ii) the criteria to find the member with surname Baloo.

.....
(2 marks)

Total 7 marks



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SECTION III

PROBLEM SOLVING AND PROGRAMMING – 45 marks

Answer ALL questions.

9. Shani wants to sign up on a social network called LookToME where she can post updates and send messages.

(a) Shani has to use the Help feature to sign up. Explain the purpose of this feature.

.....
.....
.....

(2 marks)

(b) Shani can earn a “flash” after 10 updates AND 50 messages. Complete the following table to show whether she earns a flash for EACH of the options below.

	Updates	Messages	Flash Earned? Yes/No
(i)	10	10	
(ii)	10	50	
(iii)	50	10	
(iv)	50	50	

(4 marks)

(c) Consider the message: ~cTht trl was nce;

The message means ‘That trail was nice’.

(i) State the technical term given to the code for the original message.

.....

(1 mark)

(ii) State the name of the document that explains how a user can send a message.

.....

(1 mark)

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(d) The following format is used for sending a message:

- Each word can only be three letters long
- Each line must begin with ~c
- Each line ends with a semicolon (;)

(i) Identify the error in the following message:

~cHrd that trl ths wek;

.....

.....

(1 mark)

(ii) State the technical term that caused the error in the message.

.....

(1 mark)



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(e) Answer the following questions based on the fragment of code below.

```
If trails = 30  
Then flash := Flash + 1  
Else writeln('Chase a trail');
```

State

(i) the type of control structure.

.....
(1 mark)

(ii) the relational operator used in the code.

.....
(1 mark)

(iii) the data type of trails.

.....
(1 mark)

(iv) the location of the cursor if the statement is written.

.....
(1 mark)

(v) the result when trails has the value of 15.

.....
(1 mark)

Total 15 marks



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10. A one-dimensional array named TRAIL is used to store the number of points for three levels in a game.

(a) Write Pascal code for the following:

(i) Declare the array TRAIL.

.....
.....
(4 marks)

(ii) Initialize the array to 0.

.....
.....
(4 marks)

(b) Complete the following array to illustrate that 50 has been assigned to the 3rd index. Be sure to number the values of the index.

Index		

(2 marks)

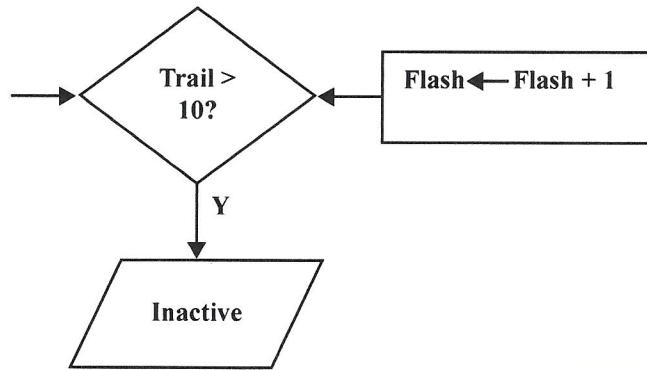
Total 10 marks



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11. (a) State any TWO errors in EACH of the following diagrams.

(i)



.....

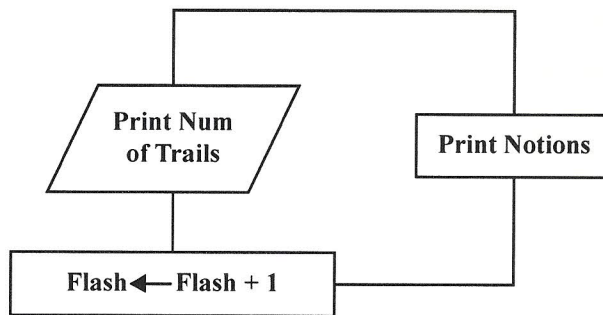
.....

.....

.....

(2 marks)

(ii)



.....

.....

.....

.....

(2 marks)

(b) Write the name of the process that locates and fixes errors in programs.

.....

(1 mark)

Total 5 marks

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12. (a) Write correct Pascal statements with correct syntax for the following instructions in an algorithm.

(i) START (1 mark)

(ii) STOP (2 marks)

(iii) Assign 10 to the variable TOTAL (3 marks)

(iv) PRINTSCORE (4 marks)

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- (b) Rewrite the following algorithm using Pascal code. (Assume variables have been declared.)

```
Input message
Initialize Flash to 0
Repeat 10 times
    If message is equal to 50 then
        Flash = Flash + 1
    Input message
Print Flash
```



(5 marks)

Total 15 marks

END OF TEST

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS TEST.

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