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TEST CODE 01229020

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CARIBBEAN EXAMINATIONS COUNCIL

CARIBBEAN SECONDARY EDUCATION CERTIFICATE® EXAMINATION

INFORMATION TECHNOLOGY

Paper 02 – General Proficiency

2 hours

READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

1. This paper consists of FOUR questions. Answer ALL questions.
2. Write your answers in the spaces provided in this booklet.
3. Do NOT write in the margins.
4. 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.**
5. **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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Answer ALL questions.

1. (a) Peripheral devices are those which are usually added to a computer system, connected to and controlled by the CPU.

(i) Circle TWO peripheral devices in the list of devices below.

Motherboard	Microphone	Monitor
Keyboard	Compact disc	Mouse

(2 marks)

(ii) For the TWO peripheral devices circled in (a) (i), state how EACH may be used by an individual in the music industry.

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(2 marks)

(b) Printers are output devices used to create hard copy documents.

(i) Name ONE of the two categories of printers.

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(1 mark)

(ii) Outline ONE difference between a dot matrix printer and a thermal printer.

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(2 marks)

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(c) A musician is in the process of sourcing a printer. Provide THREE reasons why a laser printer should be chosen over an inkjet printer.

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(3 marks)

(d) Consider the following database with two tables named **FARMERS** and **FARM**.

FARMERS

ID No.	FirstName	LastName	Gender	Contact Number	Region
1	Jack	Smith	M	675-8742	1
2	Leslie	Jacobs	F	782-6734	2
3	Bruce	Jordan	M	892-6764	1
4	Karen	Smith	F	323-8792	7
5	Linda	Daniels	F	239-0552	2
6	Jerome	Levy	M	982-1291	5
7	Carlington	Nichols	M	767-2231	5
8	Handel	Brown	M	773-2231	4

FARM

FarmID	Crop	Cost Per Produce	FarmerID
002	Banana	$10.00	1
192	Orange	$8.25	1
778	Irish potato	$30.00	6
252	Lychee	$25.00	2
123	Sweet pepper	$15.00	5

(i) In the database table FARM, name the field by which EACH record can be uniquely identified.

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(1 mark)

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(ii) State the fields that must be linked in order to create a relationship between the two tables.

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(2 marks)

(iii) Complete the Design View extract below to show a simple query that will list the Farmer's full name, Region, Crop and FarmID for FarmerID number 1.

Field						
Table						
Sort						
Show	☐	☐	☐	☐	☐	☐
Criteria						
Or						

(4 marks)

(iv) Complete the Datasheet View extract below by displaying the result of the query created in (d) (iii).

(3 marks)

Total 20 marks

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2. (a) Define EACH of the following terms.

- Verification

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- Validation

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(2 marks)

(b) State ONE example of a typical data entry error.

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(1 mark)

(c) For EACH validation check in the following table, state ONE example of its use.

Validation Check	Example of Use
Range check	
Data type check	
Presence check	

(3 marks)

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(d) (i) Describe how a double data entry check can be applied on a student's application form with respect to confirming the student's age.

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(1 mark)

(ii) For EACH of the following scenarios, state the type of validation check that should be used.

(a) The age entered must correspond with the age calculated from the date of birth.

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(b) The national insurance number must have three alphanumeric characters followed by six numeric characters, for example, XXX-999999.

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(c) A password must have a specific number of characters.

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(3 marks)

(e) Jane is writing an essay using a word processing software. Describe the steps that Jane should take to determine the number of words in her essay.

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(2 marks)

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(f) Complete the table below by inserting the MOST appropriate web technology concepts from the following list.

Webpage HTML HTTP

Hyperlink Web browser Mail merge

Web Technology Concept	Description
	A language used to create documents viewed on the World Wide Web.
	A clickable word or image that opens a file or application.
	A document is created as a template and is used to create multiple personalized documents for distribution.
	A program used to view information on the World Wide Web.
	A single document on the internet.

(5 marks)

(g) The following URL is used by students to gain access to their examination results.

https://www.cxc.org/results

Describe EACH of the THREE components of the URL.

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(3 marks)

Total 20 marks

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3. Manufacturer X is in the process of integrating technology into its day-to-day operations and has hired different consultants to assist in the selection of the correct hardware and software. The company has also hired programmers who will be developing an application specifically for its use.

(a) State ONE difference between hardware and software, and provide an example of EACH.

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(3 marks)

(b) (i) Identify the category of the software being created for Manufacturer X.

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(1 mark)

(ii) A member of the accounts department is having trouble printing a document from the current payroll application. She printed the document but only saw lines on the paper.

State the likely cause of the problem.

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(1 mark)

(c) The application would be designed for the interaction of users via a graphical user interface.

State TWO advantages of a graphical user interface over a command-line user interface.

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(2 marks)

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(d) A 2 terabyte solid state drive will be installed in the computer of the lab technician at Manufacturer X. Determine the number of 5 gigabyte files that could fit on the drive. **Show all working.**

(3 marks)

(e) Having met with the chief technical officer for Manufacturer X, the programmers/designers will finalize the problem-solving process.

(i) Place EACH of the following problem-solving steps in the correct order.

- Define the problem.
- Develop the algorithm.
- Propose and evaluate solutions.
- Test and validate the solution.
- Determine the most efficient solution.

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(3 marks)

(ii) Complete the paragraph below by inserting the most appropriate terms in the blank spaces.

The values that are changeable during the execution of the program are known as _____ and the values set by the programmer that will never change during the execution of the program are known as _____.

(2 marks)

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(f) Complete the following algorithm snippet to show the payroll process for Manufacturer X.

```
Rate ← 5
ExpectedHours ← 40
OvertimeRate ← 6

Read hoursWorked

IF hoursWorked > ExpectedHours THEN

    OvertimeHours ← _____ - _____

    Pay ← (OvertimeHours * _____) + (_____ * _____)

ELSE

  Pay ← _____ * _____

ENDIF
```

(3 marks)

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(g) Draw a flowchart to represent the completed algorithm snippet in (f) **on page 14.**

(7 marks)

Total 25 marks

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4. (a) Complete the table below by placing EACH of the following transmission media devices into the appropriate category. **(An example is given.)**

- Twisted pair
- Coaxial cable
- Satellite
- Microwave
- Fibre optics
- Infrared

Wired Transmission Media	Wireless Transmission Media
Twisted pair	

(5 marks)

(b) The Logistics Hub has created a spreadsheet to track the number of containers that pass through its port for different shipping lines.

	A	B	C	D	E	F	G	H
1	**Logistics Hub**							
2	**Shipping Line**	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Total**
3	Blue Sea Line	450	121	188	290	501	420	
4	Canva Shipping	200	500	300	125	203	112	
5	Caribbean Gateway	116	132	165	111	178	101	
6	Grains Across the Sea	109	100	207	186	232	200	
7	King of the Seas	522	587	429	139	192	100	
8	**Total**							

(i) State ONE formatting feature applied in the spreadsheet image above.

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(1 mark)

(ii) The data in the spreadsheet is sorted. State the column on which the sorting feature was applied **and** the sorting order.

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(2 marks)

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(iii) Write the formula/function to be inserted in Cell H3 to calculate the number of containers shipped during the week for Canva Shipping.

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(2 marks)

(iv) Write the function that would be used to determine the **lowest** number of containers shipped on Wednesday.

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(2 marks)

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(c) Figure 1 below is a chart was created using the spreadsheet data of the Logistics Hub.

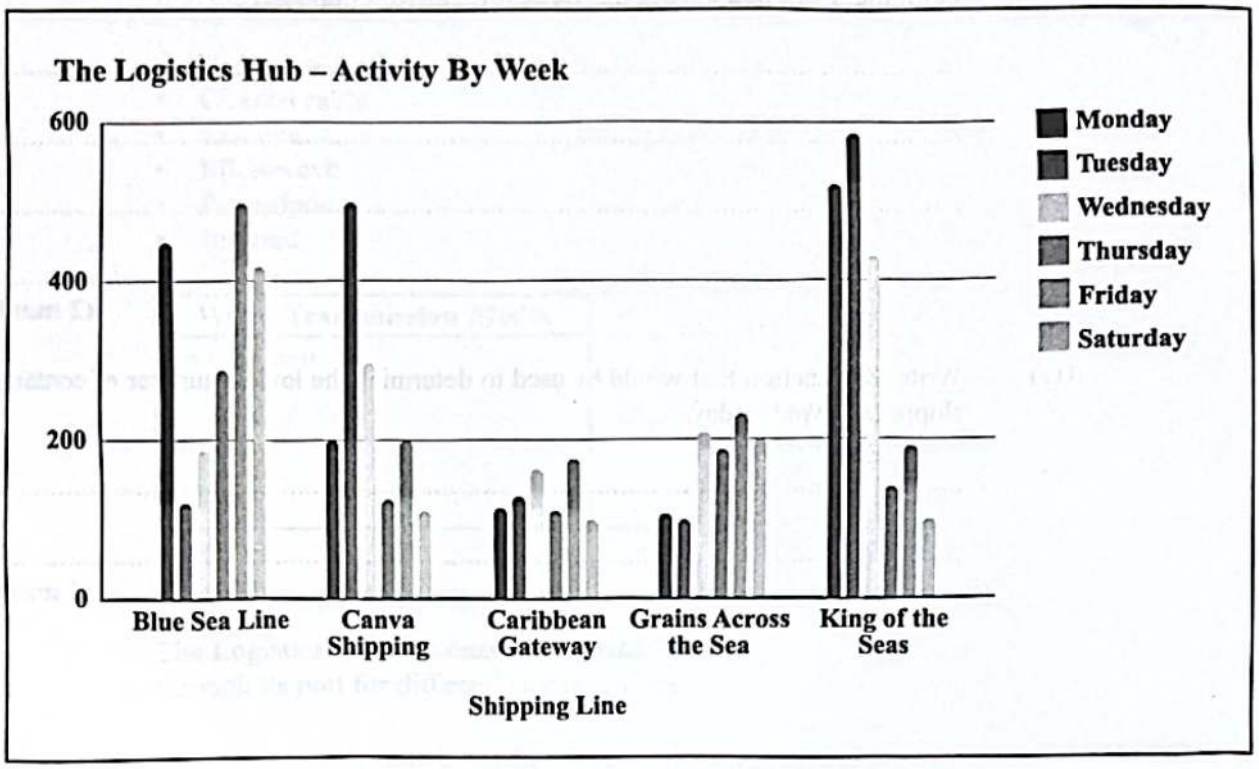


Figure 1. The Logistics Hub – Activity by Week

(i) State the type of chart used to represent the data in Figure 1.

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(1 mark)

(ii) Using the spreadsheet data provided in (b) **on page 16**, list (in the correct order) the steps required for creating the chart shown in Figure 1.

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(2 marks)

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(d) Define the term 'syntax error'.

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(1 mark)

(e) Complete the table below by inserting the data types to be used for EACH of the following variables.

Variable	Data Type
FirstName	
ItemPrice	
Receipt_Number	
Instock	

(4 marks)

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(f) Using a **while loop** construct, write pseudocode to produce the following.

- Accept a whole number from the user.
- If the number entered is greater than zero, print "Positive Number".
- If the number entered is less than zero, print "Negative Number".
- If the number entered is zero, print "You have entered a zero. Goodbye".

Declare all variables used.

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(5 marks)

Total 25 marks

END OF TEST

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

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