FORM TP 2023092

TEST CODE 01229020

MAY/JUNE 2023

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.

Copyright © 2021 Caribbean Examinations Council
All rights reserved.

0 1 2 2 9 0 2 0 0 3

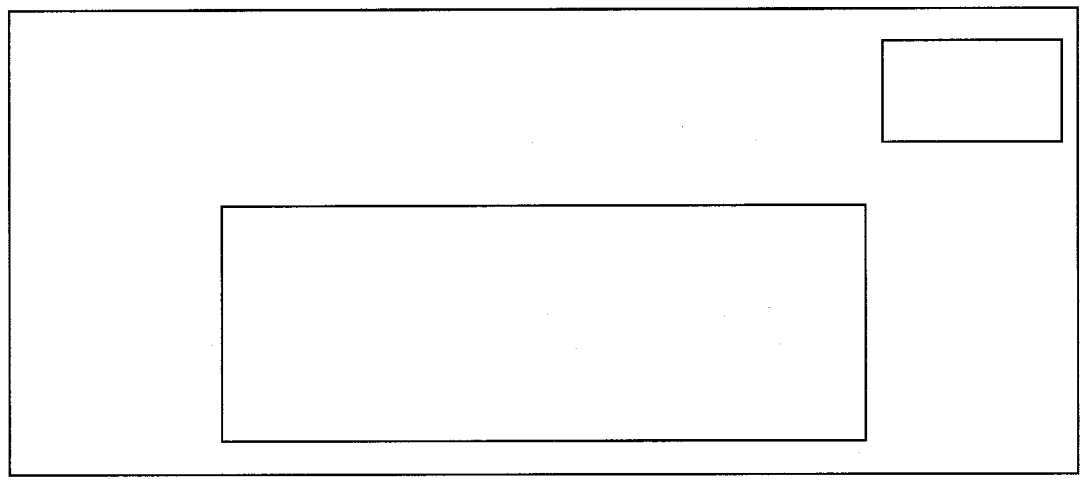
Answer ALL questions.

439

1. (a) A company needs to notify its 650 clients about its new opening hours. This information must be sent to its clients by the end of the week. The clients' contact information is stored in a table format using the following list of field headings.

ACCT NUM	FIRST NAME	LAST NAME	GENDER	EMAIL ADDRESS	LOCAL ADDRESS	PARISH NAME

The information is printed on paper and distributed using the envelope shown below.



0024

(i) State the type of printer MOST appropriate for printing the notices and envelopes.

.....

(1 mark)

(ii) State TWO field headings, from the list in (a), that should NOT be used on the envelope.

.....

(2 marks)

(iii) You wish to see a preview of what the document will look like. On the envelope in (a), illustrate where the appropriate field headings should be placed.

(3 marks)

(iv) State the type of document, needed to complete a mail merge, that is represented by the list of field headings in (a).

.....

(1 mark)

(v) While printing the information on the new opening hours, the printer stopped printing after page 450. Suggest TWO possible causes of this printer problem.

.....

.....

.....

.....

(2 marks)

(b) Direct data entry is a more efficient method for the company to use to enter data for its future clients in the table.

(i) State ONE direct data entry device that would support this type of data entry.

.....

(1 mark)

(ii) Identify an appropriate validation check that would ensure that all data for ONE client is entered before entering data for the next client.

.....

(1 mark)

(c) The company is contemplating storing the data table in the cloud.

(i) Describe what is meant by 'cloud storage'.

.....

.....

.....

(1 mark)

(ii) State ONE advantage of using the cloud instead of local storage as the medium for storing the data table.

.....

.....

.....

(1 mark)

(d) Data is stored on many different types of storage devices.

State the type of storage device that is MOST appropriate for EACH of the following scenarios.

Scenario	Storage Device
A large amount of data stored for back-up and recovery purposes.	
Data that is frequently taken from one computer to another.	
Data that is stored as a file on a computer.	

(3 marks)

A sample of the list of clients is shown below.

ACCT NUM	FIRST NAME	LAST NAME	GENDER	EMAIL ADDRESS	LOCAL ADDRESS	PARISH NAME
3550	Lorene	Walsh	Female	lorwal@mailbox.com	2 Fieldstile Road	Saint Peter
3839	Angeline	Harper	Female	harpera@carlisle.edu	45 Carlisle Terrace	Christ Church
3028	Theresa	Taylor	Female	theresa@mailboxes.com	89 Musley Lane	Saint Joseph
2261	Lisabeth	Tiner	Female	sales@printersmate.com	4 Haigh View	Saint John
4977	Mohammed	Wilcox	Male	info@claytonhouse.com	Clayton House	Christ Church
4847	Ricardo	McCamp	Male	info@brambleside.com	25 Bramley Court	Saint Andrew
4483	Jeanne	Turner	Female	jt@boxes.com	5 Woolven Row	Christ Church
2642	Vonda	Salisbury	Female	vonda@windowsrus.com	318E Green Street	Saint George
3904	Brandon	Morphew	Male	info@morphew.edu	1 Waterloo Terrace	Saint John
3019	Johnathon	Cisneros	Male	hassan@doordash.com	9 Leopold Gardens	Christ Church
4300	Hassan	Valle	Male	hvalle@nis.gov	1 Brambleside	Saint Joseph
2044	Doreen	Singh	Female	info@bergercans.com	131 Station Road	Saint Andrew

(e) State the specific spreadsheet function that would achieve EACH of the following results.

(i) The total number of clients

.....

(ii) The number of female clients

.....

(2 marks)

GO ON TO THE NEXT PAGE

(f) The company wants to know how many male clients reside in Christ Church.

(i) State the feature that would extract these clients.

.....

(ii) Determine the number of clients that would be produced from the given sample, using the feature identified in (f) (i).

.....

(2 marks)

Total 20 marks

2. Ali and Raffy are working together to create the lyrics of a song. They are not experts at using technology and need your assistance with completing certain tasks.

(a) Ali typed the first verse in a document saved as VERSES, while Raffy typed the chorus in another document saved as BRIDGE. State TWO features that would produce a new document containing both the verse and the chorus.

.....

.....

(2 marks)

(b) State the purpose of including the comments feature in a document.

.....

.....

(1 mark)

(c) After making updates to the lyrics, identify the feature that should be used to ensure that the document is regularly updated.

.....

(1 mark)

(d) Suggest to Ali and Raffy the BEST feature to use to ensure that no one can view the content of their document.

.....

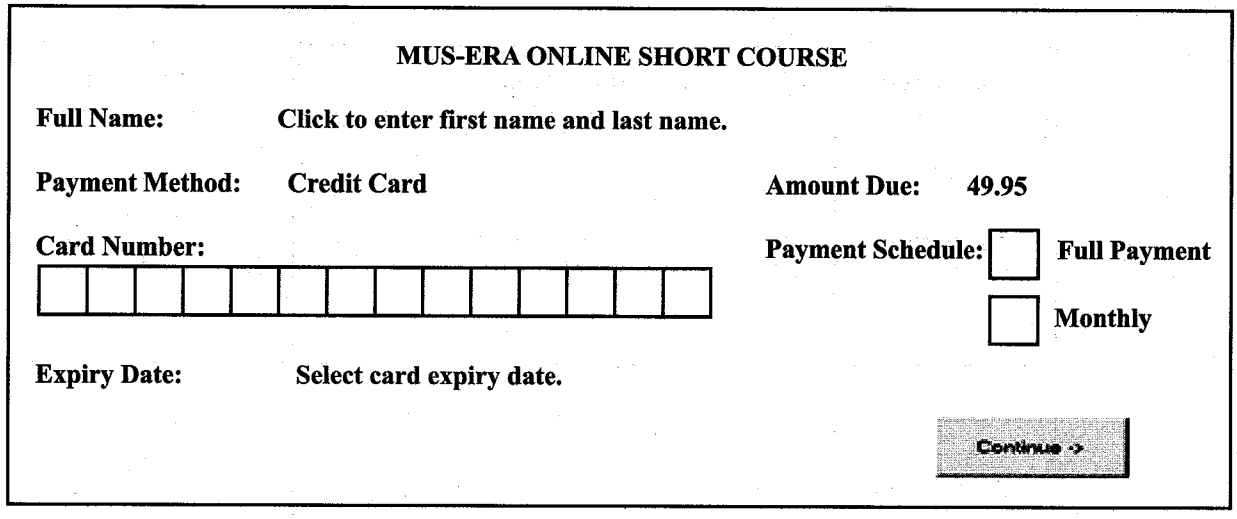
(1 mark)

(e) Suggest the feature which both Ali and Raffy could use to see updates/amendments made to the lyrics by each other.

.....

(1 mark)

(f) Raffy used a fillable electronic form to complete the payment option for an online music course.



(i) The fillable electronic form was created using various content controls. Identify FOUR labels and their associated content controls.

Label	Content Control
1.	
2.	
3.	
4.	

(4 marks)

(ii) The fillable electronic form is designed for a graphical user interface (GUI). State TWO advantages of using a GUI instead of a command line interface.

.....

.....

.....

.....

(2 marks)

GO ON TO THE NEXT PAGE

(g) Ali and Raffy were discussing the approaches to prevent and detect incorrect data entry. Complete the following table by inserting the definition of EACH approach and giving TWO examples of each.

Approach	Definition	Example
Validation		1. 2.
Verification		1. 2.

(8 marks)

Total 20 marks

3. The Ministry of Transport has captured data on the amount of traffic using the highway during the day. This data is transmitted from the tollbooths to the headquarters using the network. Use the Highway Traffic Monitoring Data shown in the table below to answer the questions that follow.

	A	B	C	D	E	F	G	H
1	**Highway Traffic Monitoring Data**							
2	**Time**	**Cars**	**Trucks**	**Buses**	**Government Vehicles**	**Motorcycles**	**Total**	**ANS**
3	**9 AM**	110	124	61	47	47	389	77.8
4	**10 AM**	278	78	54	58	43	511	102.2
5	**11 AM**	247	102	73	39	11	472	94.4
6	**12 noon**	119	96	60	39	8	322	64.4
7	**1 PM**	140	83	53	42	45	363	72.6
8	**2 PM**	203	123	54	60	15	455	91.0
9	**3 PM**	101	84	63	42	13	303	60.6
10	**4 PM**	261	111	73	45	26	516	103.2
11	**5 PM**	254	107	74	48	40	523	104.6
12	**Total**	1713	908	565	420	248	3854	770.8
13								
14			Time	10 AM				
15			Total					

(a) Write spreadsheet formulae or functions to calculate EACH of the following.

(i) The total traffic observed at 11 AM

.....

.....

(2 marks)

(ii) The total road tax owed if every car that crosses the highway pays $5

.....

(2 marks)

(b) State the spreadsheet feature that allows a user to summarize and manipulate data without making changes on the worksheet.

.....

(1 mark)

GO ON TO THE NEXT PAGE

(c) State the function that has produced the values in Column H, with field heading ANS.

.....

(1 mark)

(d) The syntax for the VLOOKUP function is = VLOOKUP (P1, P2, P3, P4). State exactly what EACH of the four parameters in the VLOOKUP function represents.

P1 .....

.....

P2 .....

.....

P3 .....

.....

P4 .....

.....

(4 marks)

(e) Consider the following algorithm.

Accept total_vehicles

If total_vehicles is greater than 500

Then print "Toll Free"

Otherwise print "Pay Toll"

Identify EACH of the following.

(i) The type of algorithm shown .....

(ii) ONE variable .....

(iii) The type of branching used .....

(3 marks)

GO ON TO THE NEXT PAGE

(f) Use the algorithm in (e) to create the following input-processing-output chart.

Input	Processing	Output

(4 marks)

(g) You need to use a dry run to test the algorithm for correctness.

List THREE numbers that could be used to adequately test many aspects of the algorithm.

.....

.....

.....

(3 marks)

(h) Define the term 'wide area network' (WAN).

.....

.....

.....

(2 marks)

(i) The traffic data can be viewed by clicking a hyperlink on the ministry's homepage. Name the TWO basic parts of a hyperlink.

.....

.....

(2 marks)

(j) State the MOST important aspect that must be considered when assessing the impact of automation on job security.

.....

(1 mark)

Total 25 marks

GO ON TO THE NEXT PAGE

4. The payroll department of an organization stores information on employee salaries in a database. Salary amounts are then uploaded electronically to each employee's bank account. A payroll clerk enters data or searches for information on full-time or part-time employees.

(a) State the job title given to the computer-related personnel who would be responsible for ensuring the integrity and security of the database.

.....

(1 mark)

(b) For EACH of the following scenarios, identify ONE type of computer misuse that is described and state whether an individual or the company is impacted.

(i) Employees in the payroll department were unable to log on to upload the payroll files.

Misuse .....

Impact .....

(ii) An employee was caught emailing directors' salaries to a competing company.

Misuse .....

Impact .....

(4 marks)

(c) (i) The computer-related personnel wish to use encryption to mitigate against interception. Explain how encryption protects data when it is being transmitted.

.....

.....

.....

(2 marks)

(ii) Identify EACH of the following cyber threats for the given counter methods in the table below.

Cyber Threat	Counter Method
	A network security device that monitors and filters incoming and outgoing network traffic based on an organization's previously established security policies
	A computer program used to prevent, detect and remove malware from a computer system

(2 marks)

GO ON TO THE NEXT PAGE

(d) A file with the following information for the payment of salaries was prepared for upload.

CheckNum	StaffID	BankCode	FirstName	LastName	Full-Time	Hours	Salary
63120104	8912	112	Linda	Montre	Y		2500
63120105	2359	156	Blu	Handle	N	25	750
63120106	1107	112	Windy	Longe	Y		1750
63120107	7011	156	Topla	Black	Y		2500
63120108	4529	189	Paige	White	N	15	550
63120109	1203	189	Austral	Hunt	Y		1875
63120110	1432	156	Atticus	Byrd	Y		2500

(i) State the data types of EACH of the following variables in the table below.

Variable	Data Type
StaffID	
Full-Time	
Salary	

(3 marks)

(ii) State the file access method which would be used to load the salary data from the file in (d).

.....

(1 mark)

(iii) Categorize EACH of the following activities in the table below as either input, processing or output.

Activity	Category
Calculate the salary.	
Print salary slip.	
Enter the StaffID.	

(3 marks)

(iv) In writing an algorithm with the information in (d) **on page 15** as input, state the fields that can be used as criteria to determine employees who are part-time.

.....

.....

(2 marks)

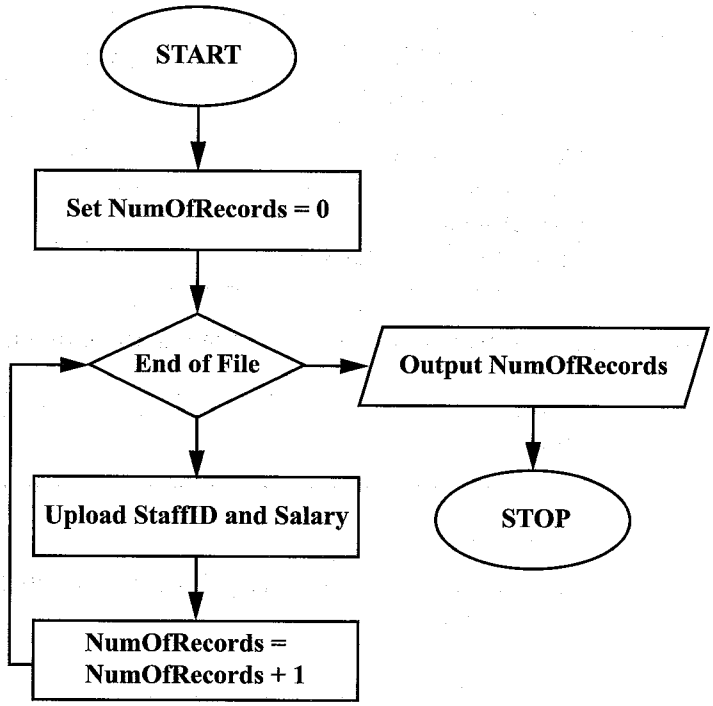
(v) If the algorithm mentioned in (d) (iv) was produced, state why StaffID would be the MOST suitable field to determine the field organization method used to read the file.

.....

.....

(1 mark)

(e) The following is a flowchart of an algorithm illustrating the steps used to upload employees' salaries to their banks.



(i) For EACH statement in the following table, state ONE example from the algorithm.

Statement	Example from Algorithm
Initialization	
Condition	
Processing	
Output	

(4 marks)

(ii) After the algorithm was converted to a working program, two types of documentation were created as shown in the following examples.

Example 1	Example 2
Programmer: HUNTE Date created: 26/03/2016 Date updated: 12/01/2021 Department: Payroll Last edited by: PARRIS	Enter the StaffID and press Enter. The salary payments will be displayed on the screen.

Identify the TWO types of documentation shown in the examples above.

Example 1	
Example 2	

(2 marks)

Total 25 marks

END OF TEST

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