CANDIDATE'S RECEIPT

INSTRUCTIONS TO CANDIDATE

1. **Fill in all the information requested clearly in capital letters.**

TEST CODE | 0 | 1 | 2 | 2 | 9 | 0 | 2 | 0 |

SUBJECT INFORMATION TECHNOLOGY – Paper 02

PROFICIENCY GENERAL

REGISTRATION NUMBER | | | | | | | | | | |

FULL NAME _____
(BLOCK LETTERS)

SIGNATURE _____

DATE _____

2. **Ensure that this slip is detached by the Supervisor or Invigilator and given to you when you hand in this booklet.**

3. **Keep it in a safe place until you have received your results.**

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0011

INSTRUCTION TO SUPERVISOR/INVIGILATOR

Sign the declaration below, detach this slip and hand it to the candidate as his/her receipt for this booklet collected by you.

I hereby acknowledge receipt of the candidate's booklet for the examination stated above.

Signature _____
Supervisor/Invigilator

Date _____

CARIBBEAN EXAMINATIONS COUNCIL

CARIBBEAN SECONDARY EDUCATION CERTIFICATE® EXAMINATION

24 MAY 2024 (a.m.)

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FILL IN ALL THE INFORMATION REQUESTED CLEARLY IN CAPITAL LETTERS.

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TEST CODE | 0 | 1 | 2 | 2 | 9 | 0 | 2 | 0 |

SUBJECT INFORMATION TECHNOLOGY – Paper 02

PROFICIENCY GENERAL

REGISTRATION NUMBER | | | | | | | | | | |

SCHOOL/CENTRE NUMBER					

0011

4092

NAME OF SCHOOL/CENTRE

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

DATE OF BIRTH | D | D | M | M | Y | Y | Y | Y |

SIGNATURE _____

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TEST CODE 01229020

MAY/JUNE 2024

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. Connect Academy is an independent school that serves students at the secondary level. The school has embraced the use of technology to enhance the teaching and learning of course content.

(a) Identify TWO types of computers that can be used by teachers and students during lessons.

.....

.....

(2 marks)

(b) Name ONE hardware device that may be useful for presenting lessons in the classroom.

.....

(1 mark)

(c) The school uses a database to manage its data which is stored on its local network. Identify ONE other storage method by which the school can gain access to its data in the event that the data on its local storage gets lost or becomes corrupted.

.....

(1 mark)

(d) The following data was taken from the school's database.

STUDENT			
Student ID	**Student**	**Age**	**Grade level**
CACS0069	Lea, Tomas	18	12
CACS0123	Hutton, Esther	15	10
CACS0127	McKenzie, Marie	19	13
CACS0131	Upton, Kellie	16	10
CACS0203	Parr, Noreen	16	11
CACS0240	Palmer, Shelley	13	7
CACS0302	Hodges, Gaynor	14	9
CACS0352	Wills, Shona	14	9
CACS0422	Newman, Abbie	13	8
CACS1002	Thorp, Rosie	12	7

COURSE								
ID	**Student ID**	**Math**	**English**	**Biology**	**Physics**	**Chemistry**	**Computer Science**	**Modern Languages**
1	CACS0069	66	53	39	100	41	37	50
2	CACS0123	53	31	58	75	99	67	67
3	CACS0127	97	95	97	63	69	31	37
4	CACS0131	32	63	37	63	37	73	80
5	CACS0203	100	68	46	69	76	60	65
6	CACS0240	97	35	88	72	70	83	68
7	CACS0302	40	90	89	55	81	100	78
8	CACS0352	88	51	89	61	75	97	71
9	CACS0422	50	38	38	54	79	49	54
10	CACS1002	82	95	78	40	87	96	27

(i) State the appropriate data types that would have been used in creating EACH of the following field names of the Student table.

Field name	**Data type**
Student ID	
Student	
Age	
Grade level	

(4 marks)

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(ii) State the field that would be used as the primary key in the Student table.

.....

(1 mark)

(iii) Identify the field in the Course table that can be used to link the Course table and the Student table **and** state the name of the key given to the field.

.....

.....

(2 marks)

(iv) The following is the result of a query which was designed to display the course average of each student.

Student ID	Course Average
CACS0069	53.13
CACS0123	64.00
CACS0127	68.38
CACS0131	53.00
CACS0203	72.38
CACS0240	72.25
CACS0302	76.25
CACS0352	72.13
CACS0422	52.38
CACS1002	71.13

State the feature that was used in the query to generate the course average.

.....

(1 mark)

(v) When creating reports in a database, grouping can be very useful. Explain the purpose of grouping.

.....

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(2 marks)

(e) The school recently held security workshops for both staff and students, to heighten their awareness of security threats and practices.

(i) Describe TWO ways by which staff can protect their computers and data from possible security threats.

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(4 marks)

(ii) State TWO personal security measures students should take when they are online.

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(2 marks)

Total 20 marks

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2. Impact Security Services provides a number of security options for its clients that includes security guards for personal and business purposes as well as monetary (cash) pickup. The company recently added computer and data security services along with a product line of security equipment.

(a) The following is an invoice that was sent to a customer from the sales department.

Impact Security Services 28 Tropical Boulevard Carib Town www.impactsecure.com admin@impactsecure.com		INVOICE	
Name / Address Family Genetics 34 Dunbar Road		Date	Invoice #
		1/6/2023	21073
	Delivery	Terms	Rep
	1/30/2023	50% deposit to be made 1 week before delivery	Ava Spence

Description	**Qty**	**Cost**	**Total**
Security camera	10	$189.99	$1,899.90
Alarm system	2	$430.00	$860.00
Security monitor	4	$116.72	$466.88
Biometric lock system	4	$133.73	$534.94
Labour - installation	1	$580.65	$580.65
Optional services	1	$300.00	$300.00
			$0.00
		Subtotal	$4,642.36
		Sales Tax (15.0%)	$696.35
		Total	$5,338.72

(i) State the word processing feature that was used to create the invoice.

.....

(1 mark)

(ii) Identify the justification that has been applied to all monetary values.

.....

(1 mark)

GO ON TO THE NEXT PAGE

(iii) The company's logo is missing from the invoice. The logo is stored in a desktop folder on the sales manager's computer.

List, in correct order, the steps that should be taken to insert the logo to the right of the company's name.

.....

.....

.....

.....

(4 marks)

(b) The company's website was recently updated to include the new services and products available.

Outline TWO checks that should be carried out before publishing a website.

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.....

.....

.....

(4 marks)

(c) When customers hire Impact Security Services for their computer and data security needs, the company does an audit to assess the areas of vulnerability and the possible threats that may occur.

Define EACH of the following terms in relation to computer security and provide an example of **each**.

(i) Vulnerability

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(ii) Threat

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(4 marks)

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(d) The company hosts webinars on its website every month to discuss the different types of security threats and attacks that companies may be exposed to. State ONE example of EACH of the following security threats and attacks that may be discussed at the webinars.

(i) Industrial espionage

.....

.....

(ii) Denial of service attack

.....

.....

(iii) Ransomware

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(iv) Data theft

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(4 marks)

(e) State TWO ways in which phishing messages can be sent.

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(2 marks)

Total 20 marks

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3. Kickstart Investments offers a range of options to its clients, from low risk to high risk investments. Due to an increase in clientele, the decision was made to open a second office in another city to accommodate more of its clients.

(a) Both office locations have their own Local Area Network (LAN). Identify the type of network that would be needed to connect both locations.

.....

(1 mark)

(b) Differentiate between an 'intranet' and an 'extranet'.

.....

.....

.....

.....

(2 marks)

(c) Complete the following paragraph by filling in the blank spaces with the MOST appropriate term provided from the word list below.

software developer	switch	web server	Internet
network adapter	modem	network administrator	web manager
server	web page	copper cable	hyperlinks

Shortly after the opening of the new office, some of the employees and customers were experiencing difficulties completing tasks. The _____ did some troubleshooting and realized that the _____ that converts digital data to analog signals was disconnected from the _____ that manages and serves all the computers on the network. This prevented the employees from going online and accessing the _____. The employees on the third floor were unable to access certain files on the network due to a power supply (hardware) failure of the _____ that was used to connect all the devices on that floor to the main computer that manages the network. The _____ also did some checks which revealed that some of the _____ on the website were broken. This prevented customers from completing certain transactions.

(7 marks)

GO ON TO THE NEXT PAGE

(d) Kickstart Investments needs an algorithm written to accept the initial investment amount made and the rate of return. The algorithm should calculate and print the return on investment earned using the formula below.

*Return on investment = (initial investment + (initial investment*rate/100)) – initial investment*

(i) Complete the following Input Processing Output (IPO) chart for the algorithm to be written.

Input	Processing	Output

(3 marks)

(ii) Write the pseudocode for the algorithm.

(8 marks)

(iii) If initial investment is greater than $100 000, then the rate of return is 45% and if initial investment is less than or equal to $100 000, then the rate of return is 37%.

Write an appropriate compound conditional statement to evaluate each rate.

.....

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(3 marks)

(iv) State the return on investment that would be received if the initial investment amount was $150 000 and the rate of return was 45%.

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(1 mark)

Total 25 marks

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4. Nigel is the manager at Elite Sports, a small sports club that provides its members with access to personal training and multiple sporting activities.

(a) Nigel takes the data from application forms filled out by potential customers and enters it into the system for effective record-keeping.

(i) State ONE type of error that could be present after entering the data from the application forms.

.....

(1 mark)

(ii) Describe TWO verification checks that can be performed when entering data from application forms.

.....

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(4 marks)

(b) The following spreadsheet shows monies collected from members for training at the sports club for one week.

	A	B	C	D	E
1	Elite Sports				
2	**Member Name**	**Activity**	**Session hours**	**Cost/hour**	**Amount due**
3	Lisa Allen	Badminton	8	$1,300.00	$10,400.00
4	Philip Sanders	Badminton	6	$1,300.00	$7,800.00
5	Tina Davis	Basketball	12	$1,100.00	$13,200.00
6	Catherine Morgan	Basketball	9	$1,100.00	$9,900.00
7	Fred Young	Swimming	4	$1,000.00	$4,000.00
8	Jerry Watson	Tennis	12	$1,500.00	$18,000.00
9	Doris Hughes	Tennis	10	$1,500.00	$15,000.00
10	Carolyn Johnson	Tennis	6	$1,500.00	$9,000.00

(i) Name the spreadsheet function that will display the number of cells in the range B3:B10 that contains the activity "Tennis".

.....

(1 mark)

GO ON TO THE NEXT PAGE

(ii) Write the formula that was used in Cell E3 to calculate the amount due.

.....

.....

.....

(3 marks)

(iii) The IF function performs a logical comparison between two values in a spreadsheet.

Describe the syntax of the IF function.

.....

.....

.....

.....

(4 marks)

(iv) Identify both the primary field and the secondary field used to sort the data as displayed in the spreadsheet at (b).

Primary field .....

Secondary field .....

(2 marks)

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(c) The following pseudocode was created to generate the total funds received from member payments.

```
Start
    total = 0

    Print "Enter amount due for member"
    Read amountdue

    While (amountdue <> 0) do

        total = total + amountdue

        Print "Enter amount due for next member"
        Read amountdue
    Endwhile

    Print "Total amount collected:", total
Stop
```

Design a flowchart to represent the pseudocode above.

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(10 marks)

Total 25 marks

END OF TEST

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

EXTRA SPACE

If you use this extra page, you MUST write the question number clearly in the box provided.

Question No. ☐

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