

FORM TP 2018245



TEST CODE **02129020**

MAY/JUNE 2018

CARIBBEAN EXAMINATIONS COUNCIL
CARIBBEAN ADVANCED PROFICIENCY EXAMINATION®
INFORMATION TECHNOLOGY

UNIT 1 – Paper 02

2 hours 30 minutes

READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

1. This paper consists of **THREE** sections and **SIX** questions.
2. Answer **ALL** questions.
3. Write your answers in the spaces provided in this booklet.
4. Do **NOT** write in the margins.
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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02129020/CAPE 2018



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SECTION I: FUNDAMENTALS OF INFORMATION TECHNOLOGY

Answer ALL questions.

1. (a) Conducting research is very important to universities; therefore, information sources are critical for decision-making and must exhibit certain characteristics.

- (i) List THREE information sources that are acceptable for research to be conducted by universities.

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[3 marks]

- (ii) Describe FOUR characteristics common to all of the information sources listed in (a) (i).

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[8 marks]

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(b) Define EACH of the following telecommunication terms:

(i) Bandwidth

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[2 marks]

(ii) Transmission medium

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[2 marks]

(iii) Modulation

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[2 marks]

(iv) Telecommuting

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[2 marks]

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- (c) A representative of a university prepares a report for delivery at a conference using a presentation tool.

Outline THREE ways in which the presentation could be enhanced for maximum impact.

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[6 marks]

Total 25 marks



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2. (a) Data is generally classified as qualitative or quantitative.

(i) Distinguish between 'qualitative data' and 'quantitative data'.

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[2 marks]

(ii) State TWO examples EACH of qualitative and quantitative data that might be collected from a job interview.

• Qualitative data

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• Quantitative data

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[4 marks]

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(b) Computer hardware has changed significantly since it was first developed.

(i) Outline THREE trends associated with the development of computer hardware.

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[6 marks]

(ii) List THREE trends associated with the development of the Internet since it first became a reality in the late 1960s.

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[3 marks]

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SECTION II: INFORMATION TECHNOLOGY SYSTEMS

Answer ALL questions.

3. (a) The operating system is an important computer software component.

(i) Define the term 'operating system'.

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[3 marks]

(ii) List THREE examples of an operating system software.

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[3 marks]

(iii) Outline TWO functions of an operating system.

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[4 marks]



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- (c) (i) Outline THREE reasons why an Internet Relay Chat may NOT be advisable for the transmission of information.

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[6 marks]

- (ii) Outline TWO advantages of using a newsgroup rather than a mailing list to disseminate information.

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[4 marks]

Total 25 marks

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(b) Over the last 20 years, open source software has become a viable alternative to proprietary software. It is widely used by large corporations and individuals for important tasks.

(i) Outline ONE difference between 'proprietary source software' and 'open source software'.

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[2 marks]

(ii) Discuss TWO benefits associated with proprietary source software.

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[4 marks]

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(c) Define EACH of the following terms:

(i) Computer network

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[2 marks]

(ii) Network topology

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[2 marks]

(d) Your school canteen has three computers and one printer. You have been asked to design a computer network for this canteen.

(i) Suggest TWO topologies that could be used by the canteen.

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[2 marks]

(ii) Justify your selection for any ONE topology suggested in (d) (i).

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[3 marks]

Total 25 marks

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4. (a) Define 'Information Technology System'.

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[2 marks]

(b) List THREE types of Information Technology Systems and give ONE example of each.

Type

Example

Type

Example

Type

Example

[6 marks]

GO ON TO THE NEXT PAGE



(c) State TWO components of an Information Technology System, giving TWO functions of each.

- Component 1

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- Component 2

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[6 marks]



- (d) (i) A business wants to implement a new security system. You have been hired as an IT specialist to design the system.

Suggest FOUR security measures this Information Technology System could have and outline the main feature of EACH measure.

- Measure 1

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- Measure 2

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- Measure 3

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- Measure 4

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[8 marks]

- (ii) Suggest THREE types of Human-Computer Interaction (HCI) which will increase the effectiveness of the security system.

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[3 marks]

Total 25 marks



SECTION III: INFORMATION AND PROBLEM-SOLVING

Answer ALL questions.

5. (a) In information technology, collecting information is an integral part of problem-solving.

(i) Explain the concept of problem solving in the context of information technology.

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[2 marks]

(ii) Explain TWO ways other than problem solving in which information is used to fulfil the goals of an organization.

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[6 marks]

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(b) The mortgage department of a bank calculates the monthly payments of customers based on the amount of money borrowed.

(i) From the following list, complete the table below by specifying THREE cosmetic, THREE desirable and THREE essential information.

- Name of customer
- Current contact information
- Medical records
- Model of house selected
- Date of birth
- Customer's picture
- Preferred location
- Cost of house
- Salary of customer
- Size of family

Essential	Desirable	Cosmetic
1.	1.	1.
2.	2.	2.
3.	3.	3.

[9 marks]



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(ii) Distinguish between essential and cosmetic information.

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[2 marks]

(iii) Describe ONE category of information other than those mentioned in (b) (i).

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[2 marks]

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(c) Computer programs are developed following a number of stages.

(i) List TWO stages in the program development process.

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[2 marks]

(ii) State ONE tool that is used in EACH of the TWO stages listed in (c) (i).

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[2 marks]

Total 25 marks



6. Algorithms are essential to the problem-solving process.

(a) (i) Define the term 'algorithm'.

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[2 marks]

(ii) State THREE properties of a well-designed algorithm.

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[3 marks]

(b) (i) List the THREE ways of representing algorithms and programs.

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[3 marks]

(ii) Explain the relationship between an algorithm and a program.

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[3 marks]

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(a) Examine the algorithm shown below.

```
N = 0
Count = 0
Total = 0
While Count < 5
  Read N
  Total = Total + N
  Count = Count + 1
End While
PRINT Total
```

(i) Explain the function of the algorithm shown above.

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[4 marks]

(ii) Use the algorithm shown above to determine the missing values in the table below.

Count	N	Total
0	4	
		5
	6	
		17
	7	

[9 marks]



(iii) State the final value of 'Count' when the algorithm **ends**.

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[1 mark]

Total 25 marks

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END OF TEST

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

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