Cambridge IGCSE™

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER				

INFORMATION AND COMMUNICATION TECHNOLOGY   **0417/13**

Paper 1 Theory   **October/November 2023**

     1 hour 30 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use an HB pencil for any diagrams, graphs or rough working.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].
- No marks will be awarded for using brand names of software packages or hardware.

This document has **12** pages. Any blank pages are indicated.

1 Peter needs to create a validation check for product numbers. Three examples of product numbers he needs to check are:

977135120127916

976143148163921

845132120651166

Identify **two** validation checks he could use to check the numbers.

1 ....

2 ....

[2]

2 A student has created a document with images for her geography project.

(a) The layout of page one is portrait orientation. The student needs to set page two as landscape orientation. Before she can set the landscape orientation she needs to insert a break.

State the type of break that is needed.

.... [1]

(b) The student has placed images in the document.

State **two** file formats she could have used for the images.

1 ....

2 ....

[2]

(c) Each page of the document includes a footer.

Explain why a footer is used.

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.... [3]

3 A teacher is setting up a school shop. The teacher is setting up a spreadsheet to keep the accounts of the shop.

(a) Fig. 3.1 shows a box containing 50 Choco Bars to sell in the shop. The information on the box will be entered into the spreadsheet.
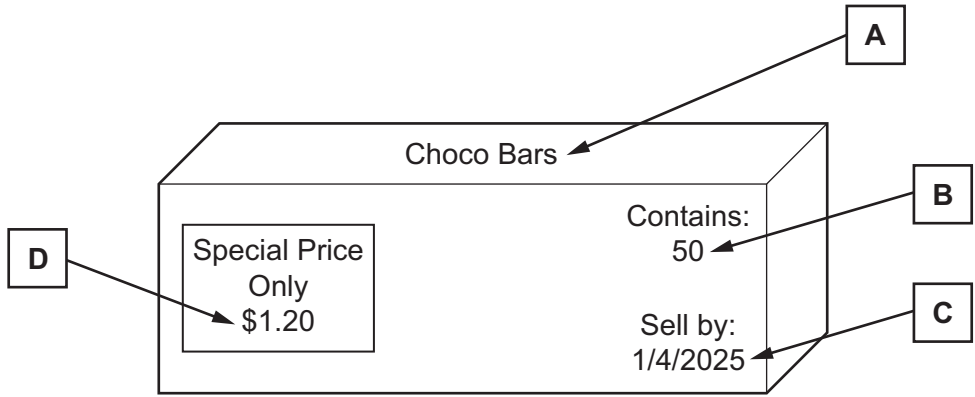
Fig. 3.1

State the most appropriate display format in the spreadsheet for each piece of data shown on the box. Your answer must be different in each case.

A ....

B ....

C ....

D ....

[4]

(b) Each box delivered to the school shop includes a QR code.

Explain why QR codes are used.

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.... [4]

(c) The teacher has created a formula in the spreadsheet that calculates the cost of purchasing a number of different items.

She has created a formula that:

- subtracts the discount per item from the price of the item to find the cost of the item
- then multiplies the cost of the item by the quantity.

	A	B	C	D	E	F
1	Product	Price of item	Discount per item	Quantity	Total	
2	Choco Bar	$1.20	$0.20	15	−$1.80	

The formula she enters into cell E2 is:

=B2-C2*D2

When this formula is entered into cell E2 the result is **not** what she expected. The result should be $15.00

Explain why the result was **not** $15.00

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.... [2]

4 A company's computer system is protected by both a user ID and a password.

(a) Explain how a user ID and a password are used to increase the security of data.

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.... [6]

(b) The company plans to improve the security of its computer system by using biometric methods.

Describe what is meant by biometric methods. Give **two** examples of biometrics.

Description ....

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Example 1 ....

Example 2 ....

[4]

5 A student needs to purchase a new computer for use on his university course.

The laptop computers available to him are one that contains a solid-state drive (SSD) or one that only stores data on the internet, using the cloud.

Evaluate these two types of laptop computer.

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.... [6]

6 A computer model can be used to design and test a bridge before it is built.

   Discuss the benefits and drawbacks of using a computer model before building a bridge.

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   .... [6]

7 Rockit Aircraft manufactures and flies aeroplanes.

   (a) The pilots at Rockit Aircraft are trained using extended reality.

   Describe what is meant by extended reality.

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   .... [2]

(b) Some of the components used in the manufacture of aircraft are produced using a 3D printer.

Analyse the use of a 3D printer to make the components rather than making the components by hand.

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.... [6]

8 Many devices in the home can be connected to the internet so they can be controlled remotely. These devices are called smart devices. A house contains a smart security system.

(a) Describe the benefits and drawbacks of using a smart security system.

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.... [4]

(b) Identify **two** sensors that could be used with the smart security system.

1 ....

2 ....

[2]

(c) Part of the smart security system involves an automatic gate for vehicles approaching the house. There is a CCTV camera at the gate and the smart security system has software for recognising each vehicle's number plate.

Explain how automatic number plate recognition (ANPR) systems work.

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.... [4]

(d) Describe **three** problems that could occur when the ANPR system reads a vehicle number plate.

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.... [3]

9   The secretary of Tawara University has created web pages for former students. The former students are adults.

   (a)   State the design features of the web pages that would meet the needs of this target audience.

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   .... [6]

   (b)   The web pages conform to the university's corporate house style.

   Describe why a corporate house style is used.

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   .... [3]

   (c)   Give **four** design features of a corporate house style.

   1 ....

   2 ....

   3 ....

   4 ....

                                                                                                                                        [4]

10 A school has employed a systems analyst to help update its computerised examination system.

(a) The systems analyst researches the current system to see what will be required in the new system.

State the methods of researching the current system that are described:

(i) talking to the network manager and examinations officer about the current system

.... [1]

(ii) watching the users operating the current system

.... [1]

(iii) forms sent out to all users to complete and return.

.... [1]

(b) After completing the analysis, the new system needs to be designed. One item that needs to be designed is a file structure.

Identify **three** other items that would need to be designed.

1 ....

2 ....

3 ....

[3]

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