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Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

3882223209

INFORMATION AND COMMUNICATION TECHNOLOGY **0417/12**

Paper 1 Theory **May/June 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.

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1 A book contains a bar code whose number is 503619309903

Tick (✓) the most appropriate validation check to test the validity of the bar code.

A check digit ☐

B format check ☐

C range check ☐

D spell check ☐

[1]

2 Identify the most appropriate hardware from the descriptions given:

(a) non-volatile internal memory used to store the start-up instructions

..... [1]

(b) an internal component that provides the input and output of audio signals

..... [1]

(c) an internal component that is composed of the main memory, the control unit and the arithmetic logic unit.

..... [1]

3 A headteacher is producing a web page about the history of her school. She has been given some old hard-copy photographs which she will include on the web page. She has a digital camera and a scanner to use to convert the hard-copy photographs into a digital format.

Compare the use of a digital camera with a scanner in this scenario. Your answer must include similarities and differences.

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..... [4]

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4 A company uses an extranet.

(a) Explain what is meant by an extranet.

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..... [2]

(b) Describe the differences between the internet and an extranet.

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..... [2]

5 State which health issue is most likely to occur from each description shown. Your answer must be different in each case.

(a) typing on a keyboard for long periods of time

..... [1]

(b) looking at a computer screen for a long time

..... [1]

(c) sitting with poor posture

..... [1]

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6 A company requires its employees to regularly change their login passwords for the company's computer systems. Passwords must be strong and cannot be reused.

(a) Explain **three** problems that may occur when the employees change their passwords regularly.

1 .....

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2 .....

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3 .....

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[6]

(b) The company has a website which uses a digital certificate.

Explain the purpose of the digital certificate.

.....

..... [1]

(c) A digital certificate is attached to an email.

State **three** items contained in a digital certificate.

1 .....

2 .....

3 .....

[3]

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7 A student is creating a spreadsheet that includes a formula to check a number entered in a cell is between two values.

- The number is entered in cell A10 as an integer.
- If the number is between the two values then a message 'OK' is displayed, otherwise 'error' is displayed.

The formula the student has created is:

=IF(AND(A10>1,A10<32),"OK","error")

Data will be used to test the formula.

(a) Identify **two** items of extreme test data the student should use and give the reason why this data was chosen.

Extreme test data 1 .....

Extreme test data 2 .....

Reason .....

.....

[3]

(b) The student has entered an item of abnormal test data.

Explain why abnormal test data is used.

.....

.....

.....

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..... [3]

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8 A teacher provides revision lessons during the holidays. The teacher plans to use web-conferencing for the lessons.

(a) Explain what is meant by web-conferencing.

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..... [3]

(b) Evaluate the use of web-conferencing in this scenario.

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..... [6]

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9 **(a)** The products in a warehouse contain either a bar code or a Radio Frequency Identification (RFID) tag.

The data about each product is read electronically.

Compare bar code readers and RFID readers. Your answer must include similarities and differences.

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..... [6]

(b) Identify **two** other uses of RFID.

1 .....

2 .....

[2]

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10 Metatags can be used in a web page.

(a) A metatag can be used to define the viewport settings.

Identify **three** other items that can be defined in metatags.

1 .....

2 .....

3 .....

[3]

(b) Metatags are used in the HTML of web pages.

State the section of the HTML which contains the metatags.

..... [1]

11 Some gaming systems use gesture based user interfaces to operate a game.

(a) Describe what is meant by a gesture based user interface.

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..... [2]

(b) Describe the drawbacks of using gesture based user interfaces in this way.

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..... [4]

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12 Movies can be stored on Blu-ray discs or an internal hard disk.

(a) Describe why Blu-ray discs are preferred to an internal hard disk for storing movies.

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..... [4]

(b) Hard disks and Blu-ray discs are examples of backing storage.

(i) State **two** characteristics of backing storage.

1 .....

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2 .....

.....

[2]

(ii) Identify **two** other types of backing storage.

1 .....

2 .....

[2]

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13 Weather forecasters use computer modelling.

(a) Explain why computer modelling is used to forecast the weather.

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..... [4]

(b) Data is collected by different types of sensor and then input to the computer model to be processed.

Identify **two** sensors that could be used to collect weather data.

1 .....

2 .....

[2]

(c) The processed data is then output.

Identify **two** output devices that could be used.

1 .....

2 .....

[2]

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14 ePublishing software is used to create an ePublication to display a school's yearly magazine.

(a) Describe the characteristics of an ePublication.

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..... [4]

(b) The ePublishing software is subject to software copyright legislation.

Give **two** methods that could be used to prevent software copyright legislation being broken.

1 .....

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2 .....

.....

[2]

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