



Cambridge IGCSE™

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INFORMATION AND COMMUNICATION TECHNOLOGY

0417/13

Paper 1 Theory

May/June 2022

2 hours

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 100.
- 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 **16** pages. Any blank pages are indicated.



1 Circle **two** storage devices.

- | | | | |
|--------------|----------------|---------------|-------------|
| Bridge | Digital camera | DVD RAM Drive | Linker |
| Memory stick | Mouse | Printer | Spreadsheet |

[2]

2 Name an appropriate validation routine for each statement. Each answer must be different.

(a) The last digit in a code used to ensure the other digits have been entered correctly.

..... [1]

(b) This validation routine ensures a password is always 8 characters.

..... [1]

(c) This validation routine ensures data has been entered into a field.

..... [1]

(d) This validation routine ensures that a date is entered as DD/MM/YYYY.

..... [1]

3 Identify **two** input devices which are used in computer control systems.

1

2

[2]

4 Computers can store data in the cloud rather than using storage devices in the computer.

(a) Describe **three** benefits of storing data in the cloud.

1

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2

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3

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[3]

(b) Describe **three** drawbacks of storing data in the cloud.

1

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2

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3

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[3]

5 The manager of a cinema has purchased a new booking system. There are 26 rows in the cinema with 20 seats on a row. Each seat is identified by a unique ID. The seat ID consists of the row letter followed by the position of the seat on the row. An example of the seat on row F position 12 would be F12.

He is setting up a test plan to test the system.

(a) Write down **one** example of each of the following types of test data. The answers must be different in each case.

Normal

Abnormal

[2]

(b) When a ticket is produced for the new system it contains a QR code.

Here is an example of a QR code.



Describe the benefits of using a QR code.

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[5]

6 Eye strain is one of the health issues associated with using computers.

(a) Explain **three** causes of eye strain when using computers.

- 1
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- 2
-
- 3
-

[3]

(b) Identify **four** methods of reducing the effects of eye strain.

- 1
-
- 2
-
- 3
-
- 4
-

[4]

- (b) Tawara Stores are also aware that many current websites do not cater for older people. They intend to create a version of their website for this audience.

Describe the features of this website to meet the needs of an older audience, giving reasons for your choice of features.

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[4]

- 8 Tawara Hotel uses magnetic stripe cards to allow guests access to their bedrooms. The hotel is changing the electronic lock it uses on its bedroom doors so the lock can work with RFID cards.

Compare the use of magnetic stripe cards and RFID cards for key entry. Your answer must include similarities and differences.

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[6]

9 The Internet of Things (IoT) allows devices as well as computers to connect to the internet using a router. Each device uses an IP address.

(a) Explain what is meant by an IP address.

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[3]

(b) Explain how a router sends data packets to another network.

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[3]

(c) The network has a firewall.

Explain why a firewall is needed.

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[4]

- 11 An image has been taken of a bird watcher and a bird. The original image has been saved as a jpg file type. You have been asked to remove parts of the image to just show the bird and to save it as a png file type to become the new image.



Original image



New image

- (a) Explain the steps needed to change the original image to the new image.

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[4]

(b) Explain the differences between a jpg and a png file type.

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[4]

12 The protection of personal data is important as many transactions are carried out online.

(a) Explain how to avoid inappropriate disclosure of personal data.

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[4]

(b) Controlling the freedom of speech is part of policing the internet.

Discuss whether the internet should be policed or not.

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[4]

13 In a college library if a book is not available students can reserve the book. When the book becomes available the librarian needs to inform the student. He does this by typing a letter and printing it. He has a database of students and has decided that in future he will use mail merge to produce the letters.

Give **four** advantages of using mail merge instead of typing out the letter each time.

1

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2

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4

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[4]

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