# Cambridge IGCSE™

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

**INFORMATION AND COMMUNICATION TECHNOLOGY** **0417/12**

Paper 1 Theory **February/March 2024**

**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   Circle **two** items which are solid-state storage media.

Actuator          Blu-ray disc          Cloud          DVD

Flash memory          Hard disk          Printer          SD card

[2]

2   A computer system consists of both hardware and software.

   **(a)** Explain what the following types of software provide in the computer system.

   Applications ......................................................................................................................

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   System ..............................................................................................................................

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   [2]

   **(b)** Give **two** examples of each type of software.

      **(i)** Applications

         1 ................................................................................................................................

         2 ................................................................................................................................

         [2]

      **(ii)** System

         1 ................................................................................................................................

         2 ................................................................................................................................

         [2]

**3** There are two forms of data: analogue and digital.

Contrast analogue and digital data.

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**4** Computers contain a Central Processing Unit (CPU).

Describe the role of the CPU in processing instructions to produce an output.

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**5** A doctor uses a gesture-based user interface.

State **two** other types of user interface.

1 ................................................................................................................................................

2 ................................................................................................................................................

[2]

**6** Augmented Reality can be used with a Global Positioning System (GPS) device.

**(a)** State **two** other uses of Augmented Reality.

1 ................................................................................................................................................

2 ................................................................................................................................................

[2]

**(b)** Describe the differences between Augmented Reality and Virtual Reality.

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**7** An expert system is used to help to locate an underground water source.

**(a)** Describe the following components of an expert system.

**(i)** User interface

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**(ii)** Knowledge base

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**(b)** Explain how an expert system is used to discover locations to drill for water.

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8    A student has been the victim of a vishing scam.

   **(a)** Explain what is meant by the term vishing.

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   **(b)** Describe **two** methods that help to prevent vishing.

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9    Compare a test strategy with a test plan. Your answer should include similarities and differences.

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10 A form tutor at Tawara School is producing a database about the students in his class.

When the database is completed, it needs to be verified.

(a) Explain the importance of visual verification.

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(b) An example of the date of birth stored on the database is: 15/05/2009

Describe **three** validation checks that could be carried out on the date of birth.

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11 More people use desktop computers rather than tablet computers when working at home.

**(a)** Discuss the advantages and disadvantages of using desktop computers rather than tablet computers for doing work at home.

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**(b)** Desktop computers use input and output devices.

**(i)** State **two** input devices that can be used in a desktop computer for working at home.

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[2]

**(ii)** State **two** output devices that can be used in a desktop computer for working at home.

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12 Describe how data is stored and managed when using cloud computing.

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13 Smart devices and microprocessors can monitor and control devices in the home.

Describe, giving examples, the negative effects of using these smart devices.

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14 A stylesheet for a website can contain both styles and classes.

(a) Explain the differences between a style and a class.

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(b) State the web development layer where the stylesheet is used.

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15 The audience needs to be considered when creating an ICT solution.

(a) Describe what factors need to be considered for the age of the audience.

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(b) Describe what factors need to be considered for the interests of the audience.

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16 (a) State **four** characteristics of spam emails.

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(b) Give **two** ways of reducing spam emails.

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