



# Cambridge IGCSE™

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## INFORMATION AND COMMUNICATION TECHNOLOGY

0417/01

Paper 1 Theory

For examination from 2023

SPECIMEN PAPER

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.

1 Circle **two** items which are internal hardware components.

- Actuator      Keyboard      Linker      Monitor
- Mouse      Printer      Processor      Sound card

[2]

2 One component of the internal memory of a computer is Random Access Memory (RAM).

State **two** characteristics of RAM.

1 .....

.....

2 .....

.....

[2]

3 Tick (✓) which device produces solid objects.

A Inkjet printer

B Dot matrix printer

C Laser printer

D 3D printer

[1]

4 For each of the following uses of data capture, name one appropriate direct data entry device. The devices must be different in each case.

(a) Contactless credit cards

..... [1]

(b) Multiple choice answers in an examination paper

..... [1]

(c) To scan items at a computerised till

..... [1]

5 A glasshouse is used to grow plants and is computer controlled.

(a) Name **three** sensors which could be used in this glasshouse.

- 1 .....
- 2 .....
- 3 ..... [3]

(b) Give **two** reasons why data from the sensors need to be converted for use by a computer.

- 1 .....  
.....
- 2 .....  
..... [2]

6 A smartphone has many uses, for example making and receiving telephone calls.

Give **four** other uses of a smartphone.

- 1 .....  
.....
- 2 .....  
.....
- 3 .....  
.....
- 4 .....  
..... [4]

7 A developer is writing a program to record the results of examinations taken by students in a school.

(a) The program will be tested to make sure that it works.

There are three types of test data that can be used to test a system: normal, abnormal and extreme.

Explain what is meant by normal, abnormal and extreme test data.

Normal .....

.....

Abnormal .....

.....

Extreme .....

.....

[3]

(b) The program collects a large amount of data and this could be stored using either a fixed solid-state drive (SSD) or cloud storage.

The developer is planning to use cloud storage.

(i) Describe **four** advantages to the school of using cloud storage rather than using the SSD.

1 .....

.....

2 .....

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3 .....

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4 .....

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[4]

(ii) Describe **three** disadvantages to the school of using cloud storage rather than using the SSD.

1 .....

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2 .....

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3 .....

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[3]

(c) The developer spends a great deal of time using a computer.

For each of the statements given, identify a health problem and describe a possible solution.

Your answers must be different in each case.

	Health problem	Possible solution
Using a mouse for a long period of time		
Sitting for too long in one position		

[4]

8 A company has an extranet.

Explain what is meant by an extranet.

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[3]

- 9 A taxi company tracks the routes their cars have travelled and the current location of each one using a Global Positioning System (GPS).

A map showing the route taken and current location of each car is displayed on the office monitor.

Describe in detail how this system could work.

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..... [4]

10 A headteacher is planning to hold a video-conference with headteachers from other schools.

The headteachers already have basic internet connected desktop computer systems including a monitor, keyboard and mouse.

(a) Identify **three** pieces of additional hardware they need in order to participate in a video-conference.

1 .....

2 .....

3 .....

[3]

(b) A technician is setting up the hardware for the video-conference.

State **three** tasks the technician would need to do to set up the hardware for the video-conference.

You can assume that the hardware required has already been purchased.

1 .....

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2 .....

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3 .....

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[3]

- 11 Microprocessor-controlled devices in the home have had positive effects on people's lifestyles. One of the positive effects of using these devices is that we can now set a cooker to switch on whilst we are out so that we arrive home to a cooked meal.

Describe the positive effects of using other microprocessor-controlled devices in the home.

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..... [4]

- 12 Tawara Retail is an online store. This online store does not have physical shops. Customers buy products from this store using internet shopping.

Describe the advantages to Tawara Retail of offering internet shopping.

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..... [4]



13 A media student is creating a movie, in school, for a project. He needs to take the movie home to edit it.

The student intends to use a CFast solid-state memory card to transport the movie files.

The student is unable to save the work on the memory card.

Give **two** error messages that may appear when attempting to save the work.

1 .....

2 .....

[2]

14 Compare the similarities and differences between Bluetooth and wi-fi.

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[4]



17 A student uses social media to keep in contact with other people.

Describe **four** strategies that the student could use to stay safe when using social media to communicate with others.

1 .....

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2 .....

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3 .....

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4 .....

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[4]

18 A manager in a hospital has decided to ask a software company to develop a computer system. The system should allow patients to book all their medical appointments online.

(a) Discuss the advantages and disadvantages to both the patients and the medical staff of this type of system.

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..... [6]

(b) The manager of the hospital has purchased an expert system to help diagnose their patients' illnesses.

Name **three** components of an expert system.

1 .....  
2 .....  
3 ..... [3]

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