Cambridge IGCSE™

CANDIDATE NAME	

CENTRE NUMBER		CANDIDATE NUMBER	

INFORMATION AND COMMUNICATION TECHNOLOGY **0417/13**

Paper 1 Theory **May/June 2021**

2 hours

You must answer on the question paper.
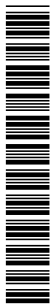
No additional materials are needed.

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 **20** pages. Any blank pages are indicated.

1   Tick (✓) whether the following statements refer to **Backing storage**, **RAM** or **ROM**.

	Backing storage (✓)	RAM (✓)	ROM (✓)
This is temporary storage used for the application being executed.			
This is volatile memory.			
An example of this storage is an SSD.			
This stores the start-up instructions for the computer.			

[4]

2   Circle **two** jobs where there has been an increase in employment as a direct result of the introduction of computers.

Car production workers   Cleaning staff   Delivery drivers for retail stores   Medical staff

Payroll workers   Secretaries   Teachers   Website designers

[2]

3   A mobile phone is used for communications, either for making phone calls or text messaging.

Chang is planning an expedition to the Southern Alps in New Zealand. There is often a limited mobile phone signal in these areas. He has set his phone up so that if there is an emergency he can communicate with the rescue teams using text messaging rather than making a phone call.

Give **two** advantages of using text messaging in this way.

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2 ....

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[2]

4 Tick (✓) whether the following descriptions of analysing a system refer to **Interviews**, **Observation** or **Questionnaires**.

Description	Interviews (✓)	Observation (✓)	Questionnaires (✓)
This method gives a more reliable overview of the whole system.			
This is more time-consuming than the other methods.			
Questions on this method cannot be expanded upon when being asked.			
With this method the worker cannot remain anonymous.			

[4]

5 Complete the sentences using the most appropriate item from the list.

blog	cookie	email	fax
search engine	social media	web browser	wiki

(a) A piece of software that allows a user to display a web page is called a

.... [1]

(b) A personal internet journal is called a

.... [1]

(c) A web application that allows a group of people to edit the content is called a

.... [1]

6 Susan is creating a database about cars and needs to save it in the shared area (S:) on the school network. It will be stored in the folder ICT which is contained in the IGCSE folder. She needs to save the file with a file name that is different from file names used by other students in the group.

(a) Write down a suitable file name for the file so that the teacher can easily find Susan's work and identify its contents. The file name should not contain spaces.

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.... [1]

(b) Write down the file path which Susan would use to store the file in the correct folder.

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.... [2]

(c) Susan plans to work on her database at home. However, the database is very large so her teacher has told her that it needs to be reduced in size. She will then be able to attach it to an email so she can send it home.

Explain why the file size would need to be reduced.

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.... [2]

7 A family has purchased a wireless router for use in their home to allow their devices to be connected via WiFi to form a wireless local area network (WLAN).

(a) When the family purchased the wireless router they were advised to change the default password.

Explain why they should change the default password.

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(b) Describe the process of using WiFi to connect to a WLAN.

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.... [4]

(c) Their son produces large complex diagrams on his desktop computer at home. He needs to be able to access the diagrams when he is at university. Even if reduced in file size, the diagrams would be too large to send using email.

Describe in detail how he could transfer the diagrams from his home desktop computer to be able to access them at university, without using additional hardware.

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(d) One of the parents in the family works for a government department and sends sensitive data from their home computer to the office.The data is encrypted before being sent to ensure it is harder to understand if it is intercepted.

Describe **four** other preventative measures that could be taken to avoid network security issues.

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[4]

8   Many teachers feel that monitoring student progress is an important part of the teaching and learning process.

Describe how the features of a spreadsheet can be used by a teacher to help monitor student progress.

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.... [6]

9 One way of communicating with other people is to use emails. It is very important that when you send and receive emails you are aware of esafety.

Evaluate your own use of email in terms of esafety and describe the strategies you will need to minimise the potential esafety risks.

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.... [8]

10 Aimi works for a shop that sells toys. She is setting up a relational database of the stock in the shop. She has started designing the database. Aimi has written down the questions that are asked about each toy and needs to produce appropriate field names from them. An example of the type of data that is to be stored is shown.

What is the toy? Tawara Doll

Who manufactured the toy? Tinky

What year was it manufactured? 2020

What price was it bought for? $12.99

(a) Complete the design table below by filling in an appropriate field name for each question. Each field name must be different. Field names must not include spaces.

Question	Field name
What is the toy?	
Who manufactured the toy?	
What year was it manufactured?	
What price was it bought for?	

[4]

(b) When Aimi created the whole database one of the fields was set as integer. However, as data is entered Aimi realises that the field should have been set to two decimal places.

Describe the steps that need to be taken, by Aimi, to change the field from an integer to a decimal. This field will be set to two decimal places.

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(c) Aimi created a relational database but could have created a flat file database.

Discuss the advantages and disadvantages of using a relational database rather than a flat file database.

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11 Tawara College is setting up a new website for its older students. The website will publicise the events in the college, as well as revision and sporting activities. The headteacher wants the website to be attractive to the older students and it must meet their needs.

Before the website can be produced the needs of the audience have to be taken into account.

Analyse the needs of this audience.

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12 The director of a zoo is writing a document about wallabies. He has taken an image of some wallabies (Fig. 12.1) and is planning the layout of the pages which will include part of the image. The image he plans to use is shown in Fig. 12.2.

Fig. 12.1

Fig. 12.2

(a) Name the editing technique that was used to change Fig. 12.1 to Fig. 12.2.

.... [1]

(b) The director will include images and information about the wallabies in the document. Each page will be set out in 2 columns with a line between them.

(i) Describe the steps taken to create the columns. Assume the software has been loaded and the text has been entered.

The Habitat

The natural habitat of the wallabies[1] of New Guinea varies by species. The **forest wallaby** inhabits wooded and brush areas, whereas the **rock wallaby** inhabits the mountain areas. The **swamp wallaby** lives in the wetlands and swamps. Wallabies feel safer by inhabiting the rougher terrain such as heavily wooded areas, cliffs and wet areas.

Some types of rock wallaby live in the southern desert on almost vertical rock walls whilst others live in a more versatile habitat. To keep their young safe in these inhospitable areas the baby wallabies which are small, weak and vulnerable live in their mother's pouch for at least eight weeks.

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(ii) Describe the steps taken to add the image as shown.

The Habitat

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(c) As the document is being written for the zoo it needs to conform to the corporate house style.

Explain what is meant by corporate house style.

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.... [4]

13 A student is looking for information on the internet for his school project. He has found a number of web pages that are useful.

(a) Explain the following terms when referring to web pages:

(i) Bookmark

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.... [2]

(ii) Anchor

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(iii) Hyperlink

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.... [2]

(b) The student has found a website that is very useful and is planning to bookmark it.

Describe the steps he will need to take to set up a bookmark for the website.

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.... [2]

14 Magnetic tapes are used in organisations for backing up data.

Describe the advantages and disadvantages of using magnetic tapes rather than flash memory for backing up data.

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15 Streaming movies and music is replacing downloading or purchasing a physical copy of the files.

Describe the advantages and disadvantages of streaming files rather than using other methods.

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