Cambridge IGCSE™

CANDIDATE NAME	

CENTRE NUMBER		CANDIDATE NUMBER	

INFORMATION AND COMMUNICATION TECHNOLOGY **0417/12**

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.

1   Circle **two** input devices.

3D printer	Actuator	CD ROM	Digital camera
Keyboard	Linker	Monitor	Speaker

[2]

2   A computer-controlled glasshouse is used to grow plants.

Identify **two** output devices used in this glasshouse.

1 ....

2 ....

[2]

3   Network devices are used in computer systems.

Complete each sentence by identifying the most appropriate network device.

(a) The network device that is used to transmit the data along an analogue telephone line is a

.... [1]

(b) The network device that connects a LAN to a WAN is a

.... [1]

(c) The network device that allows data to be directed to a specific computer on a LAN is a

.... [1]

(d) The internal network device that allows a computer to connect to a LAN is a

.... [1]

4   Many word processing packages have a number of formatting features.

The paragraph below shows some of the formatting features that can be used.

The Northshire Steam Railway (**NSR**) today approved the events programme for the Summer Steam Festival (**SSF**) 2022 to be held between June and August in <u>Norton</u> which will see five new steam engines join the existing twenty eight steam trains they have in stock. A special attraction for the Festival will be the *Teal Steam Crane*.

(a) Write down **four** of the formatting features that have been used in the paragraph shown.

1 ....

2 ....

3 ....

4 ....

[4]

(b) The logo for the Summer Steam Festival is shown and labelled A. The organisers of the event are planning to create a second logo for all their correspondence. This is shown and labelled B.

Summer
Steam Festival
2022

A

Summer
Steam Festival
2022
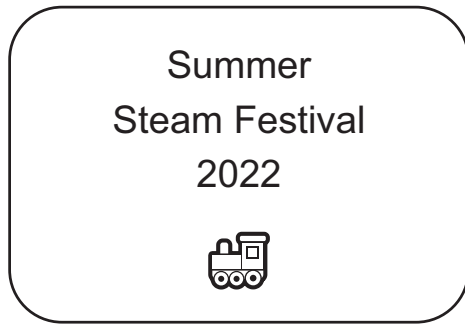
B

Describe the steps that have been used to transform logo A into logo B.

....

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....

.... [4]

5 A library is considering the way it issues books. The librarians are planning to use RFID rather than bar codes.

Describe the advantages of using RFID rather than bar codes.

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....

....

....

.... [4]

6 Laptop computers use Solid State Drives (SSD) rather than Hard Disc Drives (HDD).

Describe **two** disadvantages of using an SSD rather than an HDD in a laptop computer.

1 ....

....

2 ....

....

[2]

7 A patient has an injury and the doctor treating him needs to find out information about the patient. Most of the data he needs to collect is personal data.

The data collected is protected by data protection legislation. Most data protection acts include the principle that data should be kept confidential and secure.

(a) List **four** other principles of a typical data protection act.

1 ....

....

2 ....

....

3 ....

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4 ....

....

[4]

(b) Explain what is meant by personal data. Include **two** examples of personal data in your answer.

Explanation ....

....

....

....

Example 1 ....

....

Example 2 ....

....

[3]

(c) Explain why personal data should be kept confidential and secure.

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.... [4]

8 Uniform Resource Locators (URL) are used to locate websites and resources. A teacher needs to find a teaching guide from Cambridge Assessment International Education. To download the teaching guide she types in:

https://www.cambridgeinternational.org/igcse-ICT-0417/2193733.pdf

(a) Write down only the part of the URL which shows the file name of the teaching guide.

.... [1]

(b) Write down only the part of the URL which is the folder where the teaching guide is stored.

.... [1]

(c) Write down only the part of the URL which is the domain name.

.... [1]

(d) Explain what is meant by https.

....

.... [1]

9   A student is creating a spreadsheet of airports for a project.

	A	B	C	D	E	F	G
1	Code	Name	Country			Airport Name	
2	LHR	London Heathrow	UK			MIL	Milan
3	ROM	Rome	Italy			Airport Country	
4	PAR	Paris	France			MIL	Italy
5	MIL	Milan	Italy				
6	SNN	Shannon	Ireland				
7	STO	Stockholm	Sweden				
8	LBA	Leeds and Bradford	UK				
9	GVA	Geneva	Switzerland				
10							

The formula in G2 is:

=VLOOKUP(F2,A2:B9,2,0)

(a) Explain, in detail, what the formula in G2 does.

....

....

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....

.... [4]

(b) Before the spreadsheet can be used, data needs to be entered to test the spreadsheet.

There are three types of test data: normal, abnormal and extreme.

Explain what is meant by these three types of test data.

Normal ....

....

Abnormal ....

....

Extreme ....

....

[3]

(c) Explain, using examples, the differences between a function and a formula.

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.... [6]

(d) The completed file could have been created using a database.

Describe **two** reasons why databases are used in certain applications rather than spreadsheets.

1 ....

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2 ....

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[2]

10 The prolonged use of computers can cause several health problems particularly when sitting down and using monitors.

Discuss the strategies that you have developed to minimise health risks which only relate to sitting down and using a monitor.

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.... [8]

11 A car manufacturing company uses computer-controlled robots to manufacture its cars.

Discuss the advantages and disadvantages to the company of using computer-controlled robots rather than using humans to manufacture the cars.

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.... [6]

12 Different methods can be used to analyse a system.

Discuss the benefits and drawbacks of analysing a system by observing staff rather than looking at the current systems documentation.

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.... [6]

13 A librarian in a college department library is entering data into a student borrowers' file. As the data is entered it needs to be verified.

(a) Describe the **two** types of verification.

1 ....

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....

....

2 ....

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[4]

(b) Explain, using examples, why it is necessary to carry out validation as well as verification for this system.

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.... [4]

14 Spam is associated with ICT systems.

(a) Explain what is meant by the term spam.

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.... [2]

(b) Describe the ways that a user can recognise spam and methods to help prevent it.

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.... [6]

15 (a) Explain what is meant by cloud storage and how it is used.

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.... [6]

(b) Describe **two** issues related to the security of data in the cloud.

1 ....

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2 ....

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[2]

16 A company uses corporate house style within the headers and footers in its documents.

(a) Explain what is meant by corporate house style.

....

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.... [2]

(b) Explain why headers and footers are needed.

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.... [2]