Cambridge IGCSE

CANDIDATE NAME	

CENTRE NUMBER		CANDIDATE NUMBER	

INFORMATION AND COMMUNICATION TECHNOLOGY **0417/12**

Paper 1 Theory **October/November 2017**

2 hours

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces at the top of this page and any additional pages you use.
Write in dark blue or black pen.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

No marks will be awarded for using brand names of software packages or hardware.
Answer **all** questions.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **15** printed pages and **1** blank page.

CAMBRIDGE
International Examinations

[Turn over

1 Tick whether the following statements would apply to a **LAN**, a **WAN** or a **WLAN**.

	LAN (✓)	WAN (✓)	WLAN (✓)
The internet is an example of this type of network			
A wired network found within a single building			
This network uses wireless technology			
This network is spread over a large geographical area			

[4]

2 Complete the following sentences, using the most appropriate technology from the list below.

| **a 3D printer** | **artificial intelligence** | **batch processing** | **biometrics** |

| **a dot matrix printer** | **a microphone** | **a password** | **a robot** |

a scanner　　　　　**a speaker**

(a) A printer that is capable of producing physical objects is called

....[1]

(b) The use of a computer to perform tasks that mimic or duplicate the functions of the human brain is called

....[1]

(c) A device used in a car production line to assemble a car is called

....[1]

(d) Authentication techniques that use fingerprints or retina scans is called

....[1]

3 A school is holding an athletics competition. The timings of each running event will be measured electronically using sensors at the start and finish. Runners begin a race in starting blocks. When the starting pistol is fired the electronic timing starts. The winner of the race is the first to break the light beam at the end of the race.

(a) Complete the table using the most appropriate words from the list below.

Infra-red sensor	**Light sensor**	**Moisture sensor**	**Motion sensor**
pH sensor	**Pressure sensor**	**Sound sensor**	**Temperature sensor**

	Device
Data from the starting pistol is read by this device	
This device detects that the athlete has left the starting block	
When the light beam is broken the data is read by this device	

[3]

(b) A member of the sports department will use a computer to produce a magazine of the competition. He will include photographs stored in a digital camera as well as printed photographs.

Identify the methods he would use to transfer the photographs to the computer.

Digital camera photograph ....

....

Printed photograph ....

....

[2]

4 You have been asked to set up a hierarchical folder structure for your IGCSE ICT work directories so that you can easily locate certain files.

(a) Fill in the boxes and complete the most appropriate hierarchical folder structure, to store practical and theory work for both homework and classwork.

```
ICT ┌──────────────┐
    │              │
    │          ┌──────────────┐
    │          │              │────────────┐
    │          └──────────────┘            │  ┌──────────────┐ A
    │                                       ├──│              │
    │                                       │  └──────────────┘
    │                                       │  ┌──────────────┐
    │                                       └──│              │
    │                                          └──────────────┘
    │          ┌──────────────┐
    └──────────│              │────────────┐
               └──────────────┘            │  ┌──────────────┐
                                           ├──│              │
                                           │  └──────────────┘
                                           │  ┌──────────────┐
                                           └──│              │
                                              └──────────────┘
```
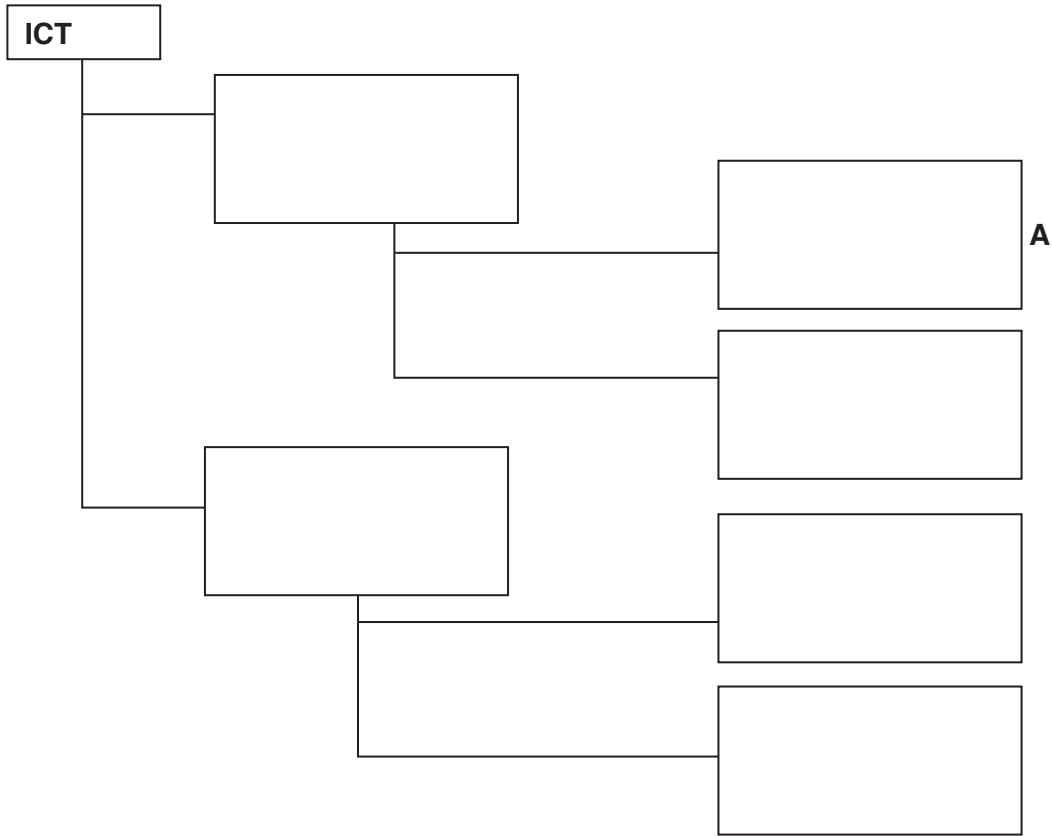
[2]

(b) Complete the file path for a document called input_devices.rtf stored in box **A**.

....[1]

5 (a) Describe the processes a web browser has to go through to load a web page.

....

....

....

....[2]
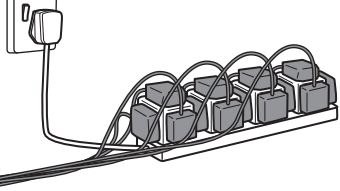
An organisation is creating a company website and is deciding whether to make it available on the internet or create a company intranet. The website will contain confidential information.

(b) Explain why they should use an intranet rather than the internet.

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....[6]

6   Using the images below write down the **Safety issue** referred to and a way of **Minimising the risk**.

Image	Safety issue	Minimise the risk

[8]

7 One popular reason for young people using the internet is playing online games. One way of ensuring that young people are safe is to use fictional names to identify themselves.

Describe other measures that should be taken to ensure that playing online games is safe for young people.

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....[4]

8   Hot House Design keeps to a corporate house style when creating a website.

Web page 1

Web page 2

Using examples from the two webpages, explain what is meant by house style.

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....[4]

9 The internet is used as a method of communication. This includes Blogs, Wikis and VOIP.

(a) Describe the following ways of communicating.

(i) Blog

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....[2]

(ii) Wiki

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....[2]

(iii) VOIP

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....[2]

(b) The internet has a number of security issues.

Tick whether the following statements would apply to **Phishing**, **Pharming** or **Smishing**.

	Phishing (✓)	Pharming (✓)	Smishing (✓)
The sending of fraudulent emails appearing to come from legitimate companies in order to steal passwords			
Redirecting users to a bogus website that looks authentic			
Security attack where a user is tricked into downloading a virus on to a cell phone			
As the user types details they are stored by the criminal			

[4]

10 The Ocean Sailing Company offers the experience of sailing on a yacht. Customers can choose which type of yacht they want to sail on. The owner keeps a spreadsheet to calculate the cost to customers. The owner allocates a loyalty code to each customer. Each code has a different discount.

	A	B	C	D	E
1	Holiday Cruises				
2					
3	**Code**	Discount		Cost per day	500
4	1	0.05			
5	2	0.1			
6	3	0.125			
7					
8		Name of Yacht	Number of days	Percentage Discount	Discount
9	1	Ocean Speed	7	=VLOOKUP(A9,$A$4:$B$6,2)	
10	2	Sealord	5		
11	3	Sunliner	5		
12	1	Pacifico	10		
13	2	Alexander	14		
14	3	Moonliner	5		
15	2	Coronia	7		
16	2	Voyager	5		

(a) Explain each element of the formula in cell **D9**.

....

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....[3]

(b) Identify the **value** you would expect to see in cell D9.

....[1]

(c) The **Discount** is the cost per day multiplied by the number of days multiplied by the Percentage Discount.

Write a formula that would be entered in cell **E9** to calculate the **Discount**.

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....[3]

(d) The $ symbol is used in the formula in cell D9.

Name this type of referencing and explain why it is used.

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....[3]

(e) The Ocean Sailing Company owns a number of yachts.

Explain how you could replicate the formulae to calculate the Percentage Discount and the Discount for each yacht.

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....[3]

11 A theatre manager wishes to introduce an online booking system. A programmer has been asked to write the software. She could continue on her own or discuss the ideas with the theatre manager.

(a) Explain why is it beneficial to discuss ideas with the theatre manager before writing the software.

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....[4]

(b) Give **four** advantages of using online booking systems for the customer rather than using manual systems.

1 ....

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2 ....

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3 ....

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4 ....

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[4]

12 Contactless debit cards are replacing standard debit cards. Some countries are introducing contactless debit card transactions at ATM machines.

Give **three** disadvantages to the customer of using these cards at an ATM.

1 ....

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2 ....

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3 ....

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[3]

13 A travel agent specialising in adventurous holidays has asked a systems analyst to recommend a new computer system for their records. The systems analyst's first task is to research the current system.

(a) Identify **three** methods of researching the current system.

1 ....

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2 ....

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3 ....

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[3]

(b) The company has decided to set up a website to publicise its holidays.

Name **three** appropriate types of object that could be inserted into the web page.

1 ....

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2 ....

....

3 ....

....
[3]

14 A robot is used as a computerised postal delivery system. It drives around the corridors of a set of offices picking up and delivering post. If the robot is close to a worker it stops and waits until the worker moves away.

(a) A proximity sensor is used to detect how close to a worker the robot is.

Describe the role of the microprocessor in stopping the robot.

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....[5]

(b) Robots are being used more and more in offices to carry out menial tasks, like delivering post.

Describe the advantages and disadvantages of using robots in this way.

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....[4]

15 A word processing program uses a Graphical User Interface (GUI). Using examples from the word processing program describe **three** features of a GUI.

1 ....

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2 ....

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3 ....

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[3]

16 The banking industry has rapidly changed over the last few years as modern technology has developed.

Discuss the advantages and disadvantages of using online banking rather than other banking methods to the customer.

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....[8]

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