CANDIDATE NAME	

| CENTRE NUMBER | | | | | | | CANDIDATE NUMBER | | | | |

INFORMATION AND COMMUNICATION TECHNOLOGY **0417/11**

Paper 1 Theory

October/November 2016

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 **13** printed pages and **3** blank pages.

CAMBRIDGE
International Examinations

[Turn over

1 There are a number of different internal hardware devices.

Write down the most appropriate type of internal hardware that fits the following descriptions:

(a) A volatile device that is used to store data.

....[1]

(b) This is the main printed circuit board found in computer systems.

....[1]

(c) A non-volatile chip that stores the start-up commands.

....[1]

(d) This electronic device provides a computer with the ability to produce sounds.

....[1]

2
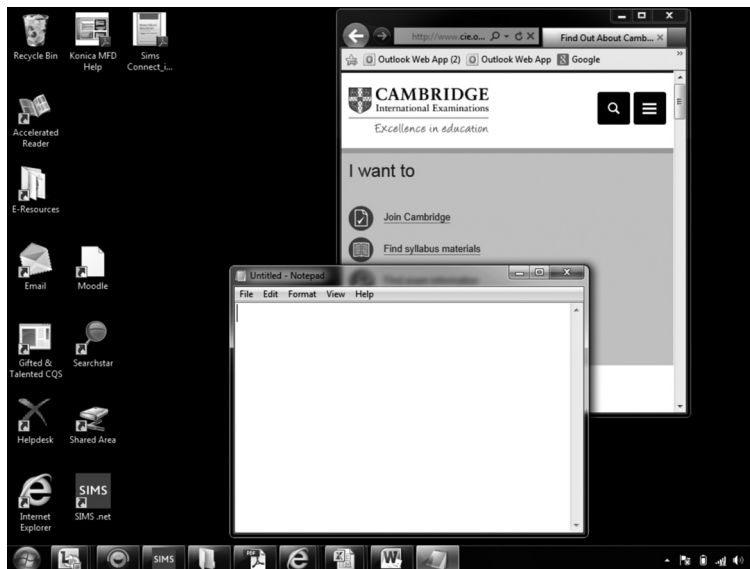
(a) Give the type of interface shown above.

....[1]

(b) One of the features of this type of interface is an icon. Describe what is meant by the term icon.

....

....[2]

(c) Identify **one** way you would select an icon using this type of interface.

....[1]

3 Tick whether the following statements are **true** or **false**.

	true (✓)	false (✓)
A WAN usually connects a number of LANs.		
A LAN is usually found in one building.		
A WAN is a Wireless Area Network.		
The internet is an example of a WLAN.		

[2]

4 Tick whether the following statements are **true** or **false**, when word processing a document.

	true (✓)	false (✓)
To set the page to landscape you select page orientation.		
The gutter margin is only on the left hand side of the page.		
A widow is where the last line of a paragraph appears as the first line of text on a new page.		
When you lock *aspect ratio* the width changes automatically as the height is increased.		

[2]

5 John is working on a school History project and saves his work. He is told by one of his teachers that the school network has been infected by a computer virus.

(a) Explain what is meant by a computer virus and give examples of how a computer virus can affect a computer.

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....

....[4]

4

(b) John copies his History project from the school network onto his home computer using a pen drive. There are many ways his home computer can become infected by a computer virus.

Describe **three** ways in which John could protect his home computer from being infected.

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....

....[3]

(c) The computer virus has attached itself to a file that John does not want to delete.

Describe what John should do to remove the threat of the computer virus infecting other files.

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....[2]

6 Evaluation is a part of the systems life cycle.

Describe **two** evaluation strategies.

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....[2]

7 (a) In the answer to a question on verification, a student wrote:

'An example of verification is proofreading'.

Explain why proofreading is not necessarily verification.

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....[2]

(b) Give the name of the type of verification that involves reading the information again.

....[1]

8 A soccer club is sending out renewal letters to all its members. The secretary of the club plans to write a standard letter and then mail merge this with the club's database.

(a) Describe the process of mail merging.

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....[4]

(b) Having created the mail merge, the letters are sent out to the members. When the members received the letters, they noticed there were a number of errors.

Give **two** precautions that the club should have taken to avoid these errors occurring.

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....[2]

(c) The soccer club wishes to publish player information on its website, but one of the members has pointed out that in a typical data protection act, personal data must be kept confidential and secure.

Explain what is meant by personal data and why it should be kept confidential and secure.

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....[6]

9 Virtual reality has an impact on everyday life.

(a) Name **two** devices that could be used with a virtual reality system.

1 ....

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2 ....

....[2]

(b) Virtual reality systems tend to be associated with gaming, but they are used in many different areas in everyday life.

Give **two** uses for virtual reality in everyday life.

1 ....

....

2 ....

....[2]

10 Name **three** health problems associated with the prolonged use of IT equipment, and for each one, suggest a possible method to prevent the problem. The methods should be different in each case.

Problem 1 ....

Method 1 ....

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Problem 2 ....

Method 2 ....

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Problem 3 ....

Method 3 ....

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[6]

11 Users of a weather station launch a weather balloon into the upper atmosphere.

   (a) An example of a sensor attached to the weather balloon would be a pressure sensor.

   Name **one** other sensor that should be attached to the balloon.

   ....[1]

   (b) The weather station continuously monitors the sensors on the weather balloon.

   Describe the monitoring process.

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   ....[4]

(c) The weather station could attach sensors to an aircraft and monitor the data as the aircraft flies through the upper atmosphere.

Give **three** advantages of using the weather balloon rather than an aircraft.

1 ....

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2 ....

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3 ....

....[3]

12 Many supermarkets are now using online shopping as well as setting up stores in a mall.

Discuss the advantages and disadvantages to the store of customers using internet shopping.

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....[8]

13 Describe the inputs and processing involved in booking tickets online for a music event.

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....[4]

14 A teacher is allowing her students to use the internet, including emails, to find information for a Geography project.

(a) Describe **three** strategies that students should use to stay safe when on the World Wide Web.

1 ....

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2 ....

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3 ....

....[3]

(b) Describe **three** strategies that students should use to stay safe when sending and receiving emails.

1 ....

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2 ....

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3 ....

....[3]

15 Blue Screen is a music band which is rapidly gaining success. They are planning a world tour and wish to organise their concerts efficiently. Two tables have been created in a database. One table contains details of the venues and another table contains details of the concerts.

Table A: Venue details

Venue ID	Venue Name	City	Website	Capacity
WT1	Cambridge Open Air Arena	Cambridge	www.COAarena.com	12500
WT2	Holmes Arena	Auckland	www.holmesarena.co.nz	12500
WT3	Centinnel Stadium	Beijing	www.centinnel.com	17000
WT4	Western Stadium	California	www.westernus.com	18000
WT5	Pembroke Theatre	Cambridge	www.PCT.co.uk	15000

Table B: Concert details

Concert ID	Location ID	Date of concert	Number of special tickets
1	WT1	01/11/2016	20
2	WT2	01/12/2016	25
3	WT3	05/12/2016	15
4	WT2	02/12/2016	25
5	WT5	02/11/2016	10
6	WT1	03/11/2016	20
7	WT3	06/12/2016	16

   (a) Describe how a relational database can be created using tables A and B.

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   ....

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   ....

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   ....[4]

(b) Flat file databases are far less efficient than relational databases but they are still used.

Describe the advantages of using a flat file database compared to a relational database.

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....

....[2]

16 A company has decided to update its current computer system.

As part of the analysis, name **two** methods they could use to research their existing system. Give **one** advantage and **one** disadvantage of each.

Method 1

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Advantage

....

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Disadvantage

....

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Method 2

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Advantage

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....
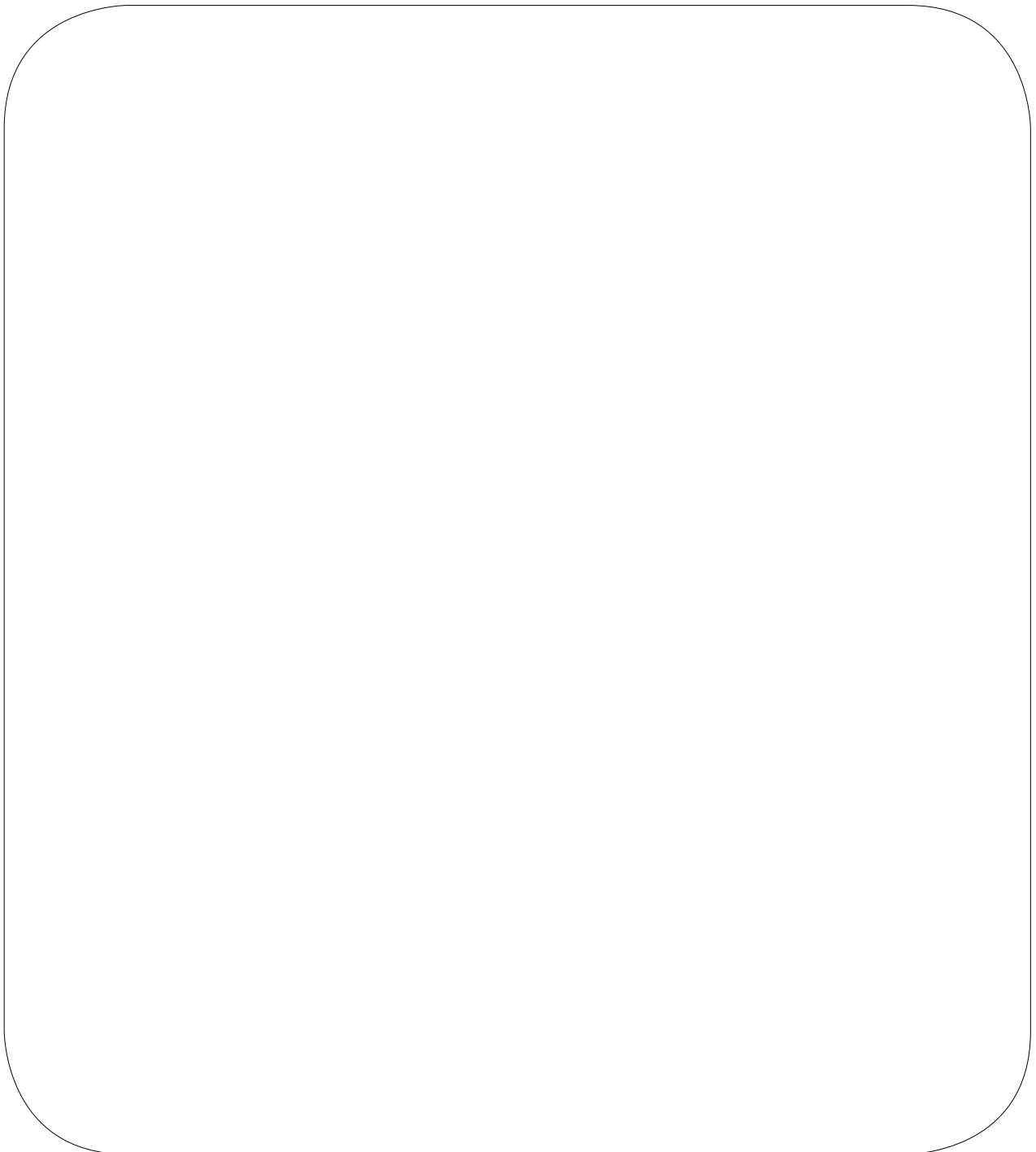
Disadvantage

....

....[6]

17 A school is considering an educational trip to Iceland. There has been a meeting of parents and the school now requires that you set up a web page for inclusion on the school website.

Use the following data provided by the parents' committee to design a suitable web page for use by parents. Indicate the features that you would like to include to make it more interesting.

Students depart from the school at 7:30 am on Saturday 15 November 2016.
The hotel is the Excelsior Hotel in Reykjavik.
A trip to watch whales off Greenland has been arranged.
Students will return to the school on Saturday 22 November 2016.
If you have any concerns contact the school.

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[6]

18 Students in a class are undertaking research for a school project. Much of the research is being carried out using the internet.

Other than e-safety issues, discuss the benefits and drawbacks of students using the internet to carry out the research.

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....[8]

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