Cambridge
IGCSE

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INFORMATION AND COMMUNICATION TECHNOLOGY **0417/13**

Paper 1 Theory **May/June 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 on all the work you hand in.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams, graphs or rough working.
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

1 Data can be input to a computer using different devices.

Write down the **most** appropriate input device which will enable you to:

(a) type an essay

.... [1]

(b) select options from a drop down menu whilst moving the device

.... [1]

(c) read the temperature

.... [1]

(d) fly an aircraft in a video game.

.... [1]

2 Tick whether the following are features of **emails** or traditional **faxes**.

	email (✓)	fax (✓)
Transmission of messages is relatively slow.		
When received data can be edited immediately using a word processor.		
Can have attached sound files.		
The message is basically an image.		

[2]

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

	true (✓)	false (✓)
WLAN stands for Wide Local Area Network.		
A WAN often requires the use of a router.		
The internet is a WAN.		
A LAN usually covers a smaller area than a WAN.		

[2]

4 Different types of test data are used to test a newly developed system.

Complete the following sentences.

(a) Data which is of the correct type is called

.... [1]

(b) Data which is outside a given range is called

.... [1]

(c) Data which is at the boundaries of a given range is called

.... [1]

(d) Data which has been used with the current system and the results are known is called

.... [1]

5 Identify **four** uses of online booking systems.

1 ....

....

2 ....

....

3 ....

....

4 ....

....

[4]

6 There are many microprocessor-controlled devices used in the modern home.

Describe **four** benefits in terms of lifestyle for users of such devices.

1 ....

....

2 ....

....

3 ....

....

4 ....

....

[4]

7 Explain the meaning of the following email terms:

(a) cc

....

.... [1]

(b) bcc

....

.... [1]

(c) forward

....

.... [1]

(d) group

....

.... [1]

(e) attachment

....

.... [1]

8 A school library uses a computer system where there is a book file and a borrower file.

Each student has a unique membership number and each book has a unique accession number. The accession number is the number given to a book when it is first bought by the library.

When a book is borrowed, the student has their thumbprint read by a special input device.

(a) Describe the computer processing involved when a book is borrowed.

....

....

....

....

....

.... [3]

(b) Describe the computer processing involved when a book is returned. There is no need for the borrower to have their thumbprint read during this process.

....

....

....

.... [2]

9   When customers use phone banking they are connected to an automated system.

(a) Give **two** items of data they are asked to key in to identify themselves to the system.

1 ....

....

2 ....

....

[2]

(b) Identify **three** services that they can use in phone banking.

1 ....

....

2 ....

....

3 ....

....

[3]

10 A student exam answer sheet consists of boxes or lozenges which the student shades in to indicate their choice of answer.

(a) Apart from the details of the test and the lozenges, give **two** items of information, essential to the student, that are pre-printed on the answer sheet.

1 ....

....

2 ....

....

[2]

(b) Describe how Optical Mark Recognition is used to process the details from the form.

....

....

....

....

....

.... [3]

(c) Describe the drawbacks of using Optical Mark Recognition.

....

....

....

....

....

.... [3]

11 Enrique has developed a new database system for a supermarket. Below is one record from the database. He needs to test the validation checks that he has developed for the system.

Barcode	Supplier_code	Contents	Price	Reorder_level	Weight(kg)
5012427141308	EZ123	Lobster Bisque	£2.72	100	0.4

(a) He designed a length check for the **Barcode** field. However, when he entered the code 5012472141308 by mistake, the system still accepted it.

Describe the check he could have used to prevent this error.

....

....

....

.... [2]

(b) The **Reorder_level** for each item is never more than 100. He developed a validation check to make sure this is the case.

However, when he entered the number 100 it was rejected.

Name and describe the validation check he should use and explain why the number could have been rejected.

....

....

....

....

....

.... [3]

(c) He also designed a length check for the **Supplier_code** field. However, when he entered EZQ23 by mistake, the system still accepted it.

Describe how he could have prevented this error.

....

....

....

.... [2]

(d) For each field write down the **most appropriate** data type. For any numeric field specify the type of number.

Barcode...

....

Supplier_code...

....

Contents..

....

Price...

....

Reorder_level..

....

Weight(kg)...

....

[6]

12 Here is a spreadsheet showing the countries which have been selected to host the Commonwealth Games.

	A	B	C	D	E
1					
2	1930	Canada			
3	1934	England			
4	1938	Australia			
5	1950	New Zealand		Canada	4
6	1954	Canada		England	2
7	1958	Wales		Australia	5
8	1962	Australia		New Zealand	3
9	1966	Jamaica		Wales	1
10	1970	Scotland		Jamaica	1
11	1974	New Zealand		Scotland	3
12	1978	Canada		Malaysia	1
13	1982	Australia		India	1
14	1986	Scotland		South Africa	1
15	1990	New Zealand			
16	1994	Canada			
17	1998	Malaysia			
18	2002	England			
19	2006	Australia			
20	2010	India			
21	2014	Scotland			
22	2018	Australia			
23	2022	South Africa			
24					

(a) Cells E5 to E14 contain the number of times each country has been selected to host the Commonwealth Games.

Write down the formula which should go in cell E5 so that it can be replicated down to cell E14.

.... [5]

(b) Papua New Guinea are interested in bidding to host the 2026 Commonwealth Games. If they are successful the spreadsheet will need to be updated.

Apart from those in column E, write down the cell references of those cells which will need to change.

.... [3]

13 Describe what an ISP is and, apart from security measures, describe what it offers its customers.

....

....

....

....

....

.... [3]

14 Explain how you would evaluate the reliability of information found on the internet.

....

....

....

....

....

....

....

....

....

....

....

.... [6]

15 Describe each of the file formats giving a different use for each.

(a) .jpeg

....

....

....

.... [2]

(b) .png

....

....

....

.... [2]
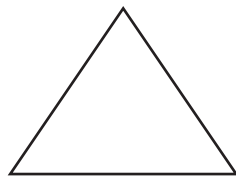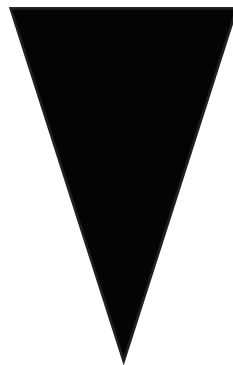
16

A

B

Describe, in detail, the changes that have happened to make shape A into shape B.

....

....

....

....

....

.... [3]

17 In the following section of HTML markup there are a number of mistakes.

```
<td>
<p>Manta conservation workshops and holidays can be booked through
the Xtreme Adventure Holiday Company or by <a href="http://www.xahc.co.uk" target="_manta">
clicking here.</p>
<td>
<p><href="mailto:tmcp@cie.org.uk">Email</a> us for details of our
Manta Education Packs or <a href="mailto,tmcp@cie.org.uk,subject=Donation by
John>">click on this link<a> to discover how to donate to help us preserve
these disappearing species.</p>
</td>
```
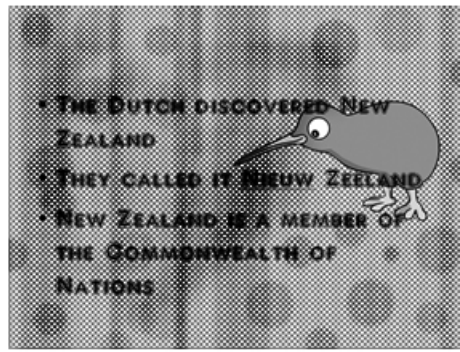
Identify **six** mistakes which prevent this from working as intended.

1 ....

....

2 ....

....

3 ....

....

4 ....

....

5 ....

....

6 ....

....

[6]

18 The following are two slides from a presentation produced for young children.

Describe **six** improvements to the presentation that would make it more appealing to a typical adult audience.

1 ....

....

2 ....

....

3 ....

....

4 ....

....

5 ....

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6 ....

....

[6]

19 Discuss the use of spreadsheet software compared to database software to store and manipulate student data.

....

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....

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....

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.... [8]

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