



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

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INFORMATION AND COMMUNICATION TECHNOLOGY

0417/11

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.

The syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

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

 **CAMBRIDGE**
International Examinations

- 1 Data can be input to a computer using direct data entry methods.

Write down the most appropriate device to input the following:

- (a) information from the chip in an electronic passport

..... [1]

- (b) text from an id card

..... [1]

- (c) account details from the front of a credit card at an EFTPOS terminal

..... [1]

- (d) account details from the back of a credit card at an EFTPOS terminal

..... [1]

- 2 Tick whether the following are examples of **applications** software or **systems** software.

| | applications (✓) | systems (✓) |
|-----------------|------------------|-------------|
| Word processing | | |
| Compilers | | |
| Interpreters | | |
| Spreadsheet | | |

[2]

- 3 Tick whether the following statements about desktop and laptop computers are **true** or **false**.

| | true (✓) | false (✓) |
|------------------------------------------------------|----------|-----------|
| Most modern laptop computers have web cams built in. | | |
| Desktop computers are not very portable. | | |
| All desktop computers have a touchpad built in. | | |
| Laptop computers are rarely supplied with a mouse. | | |

[2]

4 Complete the following sentences.

(a) The action of sending emails to fraudulently obtain another person's bank details is called
..... [1]

(b) The action of illegally installing malicious code which redirects a person to a fraudulent website with the purpose of obtaining that person's bank details is called
..... [1]

(c) Unsolicited bulk emails are called
..... [1]

(d) The action of sending text messages to fraudulently obtain another person's bank details is called
..... [1]

5 Most data protection acts include the principle that data should be stored securely.

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

- 1
- 2
- 3
- 4

[4]

6 Ffiona wants to communicate with her friend Myfanwy using her mobile phone.

Describe **four** ways she could do this.

- 1
-
- 2
-
- 3
-
- 4
-

[4]

7 The introduction of computers into the workplace has caused some changes in employment.

(a) Identify **two** different types of job where employment has **decreased**.

- 1
-
- 2
-

[2]

(b) Identify **two** different types of job where employment has **increased**.

- 1
-
- 2
-

[2]

8 Describe the details of computer addresses that are stored by a router.

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[4]

9 Internet banking can be used by bank customers to check their account balance.

(a) Many ways of logging into such a system involve the use of passwords.

Describe **three** methods of minimising the possibility of passwords being misused if intercepted.

1
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2
.....
3
.....

[3]

(b) Describe **three** benefits to customers of using internet banking.

1
.....
2
.....
3
.....

[3]

10 A ferry connects two countries. When car drivers approach the ferry they have to check in to confirm the details they have already booked. If they drive in to the self check-in lane, details of the car are automatically input to a computer. The terminal which is used for the driver to identify themselves produces a personalised welcome message on a screen. There is a database which contains details of the driver and the car.

(a) Write down the data which is automatically input to the computer.

.....
..... [1]

(b) Other than your answer to **(a)** give **two** items of data stored in the computer database.

1
.....
2
..... [2]

(c) Explain how Optical Character Recognition is used before the computer processes the data.

.....
.....
.....
..... [2]

(d) Explain the computer processing which takes place to produce the personalised message.

.....
.....
.....
.....
..... [3]

- 11 Justdiscs Limited stocks many music CDs. Below is a small selection of CDs stored on their database.

The data has been sorted on two fields.

| Artist_name | CD_title | Price | Year_released | Number_of_tracks |
|----------------|------------------|---------|---------------|------------------|
| Giggs | Let Em Ave It | \$10.99 | 2010 | 18 |
| Sabiton | Heroes | \$9.99 | 2014 | 12 |
| Luke Slater | Alright on Top | \$8.99 | 2001 | 10 |
| Arctic Monkeys | Humbug | \$8.99 | 2009 | 12 |
| Oasis | Definitely Maybe | \$8.99 | 2014 | 11 |
| Erasure | Erasure | \$7.99 | 2009 | 11 |
| Jimmy Smith | Cool Blues | \$4.99 | 2002 | 7 |

- (a) Write down the field which was used as the primary sort in the database and the order in which it was sorted.

.....
 [2]

- (b) Write down the field which was used as the secondary sort in the database and the order in which it was sorted.

.....
 [2]

- (c) Peter is the owner of the shop. He receives requests from customers about the CDs he has in stock. He converts these requests into search criteria using comparison and Boolean operators.

For example, one customer might ask for CDs which were released after 2002 and also those that have at least 11 tracks. Peter would write this down as:

Year_released > 2002 **OR** Number_of_tracks >= 11

Write down the search criteria for a customer who wants a list of all the CDs which were released before 2010 but only if they cost less than \$8.99

..... [5]

- (d) Write down the names of the artists whose records match the requirements of part (c).

..... [2]

12 An airline company allows customers to book flights online.

Here is an example of the data a customer is asked to type in when they search for a suitable flight, together with a typical entry. There are three types of class: Economy, Business and First.

| | |
|---------------------------|-----------|
| Departure airport | LHR |
| Arrival airport | DXB |
| Date of departure | 21/9/2016 |
| Date of return | 8/10/2016 |
| Class | Economy |
| Number of adults | 2 |
| Number of children | 2 |
| Number of infants | 1 |

Below is an input screen designed to help this data to be entered.

| | |
|--------------------|----------------------|
| Departure airport | <input type="text"/> |
| Arrival airport | <input type="text"/> |
| Date of departure | <input type="text"/> |
| Date of return | <input type="text"/> |
| Class | <input type="text"/> |
| Number of adults | <input type="text"/> |
| Number of children | <input type="text"/> |
| Number of infants | <input type="text"/> |

(a) Evaluate this form regarding the ease of entering data

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[6]

(b) Explain why it would not be appropriate for a format check to be used on the dates as given in the example data.

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.....

[3]

13 (a) Explain what is meant by a URL.

.....
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.....
.....

[2]

(b) Below is an extract from some HTML markup.

```

<h1>Support these animals!</h1>
<h2>Click on an image for further details</h2>
</td>
<td><h2>Giraffe</h2>
</td>
<td><a href="http://www.cie.org.uk/gcseict/giraffe.htm" target="_giraffe">
  </a>
</td>
</tr>
<tr>
<td><h2>Tiger</h2>
</td>
<td></td>
</tr>

```

Identify the URL in this extract and explain why it is included in this line in the markup.

.....

.....

.....

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.....

..... [3]

14 Juanita has a computer and a contract with an ISP. When she searches the internet she does not find relevant information quickly.

Describe **three** ways she could reduce the amount of excess information she gets without changing either her computer or ISP.

1

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2

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3

.....

[3]

15 Explain, using at least **three** different examples, what is meant by the term 'generic file formats'.

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[4]

16 Nicholas is the manager of a sports club. The club has football, cricket, netball and hockey teams.

When he needs to send a letter to members of a team he types out the letter, prints it and makes several photocopies of it to send to members.

He has a database of members and has decided that in future he will use mail merge to print the letters.

Give the advantages of using mail merge instead of photocopying the letters.

1

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2

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3

.....

4

.....

[4]

17 Below is a spreadsheet showing the countries which have hosted the Commonwealth Games.

| | A | B | C | D | E | F | G | H | I |
|----|-----------------------------------|-------------|---|-------------|---|---|---|---|---|
| 1 | Venues for the Commonwealth Games | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | 1930 | Canada | | Canada | 4 | | | | |
| 4 | 1934 | England | | England | 2 | | | | |
| 5 | 1938 | Australia | | Australia | 4 | | | | |
| 6 | 1950 | New Zealand | | New Zealand | 3 | | | | |
| 7 | 1954 | Canada | | Wales | 1 | | | | |
| 8 | 1958 | Wales | | Jamaica | 1 | | | | |
| 9 | 1962 | Australia | | Scotland | 3 | | | | |
| 10 | 1966 | Jamaica | | Malaysia | 1 | | | | |
| 11 | 1970 | Scotland | | India | 1 | | | | |
| 12 | 1974 | New Zealand | | | | | | | |
| 13 | 1978 | Canada | | | | | | | |
| 14 | 1982 | Australia | | | | | | | |
| 15 | 1986 | Scotland | | | | | | | |
| 16 | 1990 | New Zealand | | | | | | | |
| 17 | 1994 | Canada | | | | | | | |
| 18 | 1998 | Malaysia | | | | | | | |
| 19 | 2002 | England | | | | | | | |
| 20 | 2006 | Australia | | | | | | | |
| 21 | 2010 | India | | | | | | | |
| 22 | 2014 | Scotland | | | | | | | |
| 23 | | | | | | | | | |
| 24 | | | | | | | | | |
| 25 | | | | | | | | | |
| 26 | | | | | | | | | |
| 27 | | | | | | | | | |

| Country | Number of Games |
|-------------|-----------------|
| Canada | 4 |
| England | 2 |
| Australia | 4 |
| New Zealand | 3 |
| Wales | 1 |
| Jamaica | 1 |
| Scotland | 3 |
| Malaysia | 1 |
| India | 1 |

(a) Write down suitable titles for:

(i) The category axis.....

.....

(ii) The value axis.....

.....

(iii) The chart.....

.....

[3]

(b) What is this type of chart called?

.....

[1]

18 Identify and describe the **three** web development layers.

1

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[6]

19 Discuss the effectiveness of different methods which could be used to prevent unauthorised access to a laptop computer.

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[8]

20 Here is some text taken from the CIE website.

Cambridge Primary Checkpoint is designed to help students learn by providing comprehensive feedback on their strengths and weaknesses in the key curriculum areas - English, mathematics and science.

The tests are exclusively available to schools that offer Cambridge Primary and are generally taken at the end of the final year of the programme. They are marked by Cambridge and provide schools with an international benchmark for learner performance. Each learner receives a statement of achievement and a diagnostic feedback report, giving schools invaluable information and parents extra trust in the feedback they receive.

We hold two Cambridge Primary Checkpoint test series each year, covering all major areas of learning in the Cambridge Primary curriculum frameworks for English, mathematics and science. Schools teaching Cambridge Primary English as a Second Language curriculum can enter learners for tests provided by our sister organisation, Cambridge English Language Assessment.

Here is the same text after it has been reformatted.

Cambridge Primary Checkpoint is designed to help students learn by providing comprehensive feedback on their strengths and weaknesses in the key curriculum areas - English, mathematics and science.

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Describe the **four** formatting techniques which have been used.

- 1
- 2
- 3
- 4

[4]

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