



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

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**INFORMATION AND COMMUNICATION TECHNOLOGY**

**0417/11**

Paper 1 Written

**May/June 2016**

**MARK SCHEME**

Maximum Mark: 100

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**Published**

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This document consists of **8** printed pages.

- 1 (a) RFID reader [1]
- (b) Optical Character Reader [1]
- (c) Chip reader [1]
- (d) Magnetic stripe reader [1]

2

|                 | <b>applications<br/>(✓)</b> | <b>systems<br/>(✓)</b> |
|-----------------|-----------------------------|------------------------|
| Word processing | ✓                           |                        |
| Compilers       |                             | ✓                      |
| Interpreters    |                             | ✓                      |
| Spreadsheet     | ✓                           |                        |

4 correct answers – 2 marks  
 2 or 3 correct answers – 1 mark  
 1 correct – 0 marks

[2]

3

|  | <b>TRUE<br/>(✓)</b> | <b>FALSE<br/>(✓)</b> |
|--|---------------------|----------------------|
| Most modern laptop computers have webcams built in | ✓                   |                      |
| Desktop computers are not very portable            | ✓                   |                      |
| All desktop computers have a touchpad built in     |                     | ✓                    |
| Laptop computers are rarely supplied with a mouse. | ✓                   |                      |

4 correct answers – 2 marks  
 2 or 3 correct answers – 1 mark  
 1 correct – 0 marks

[2]

- 4 (a) Phishing [1]
- (b) Pharming [1]
- (c) Spam [1]
- (d) Smishing [1]

|               |  |                 |              |
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**5 Four from:**

Information must be processed fairly and lawfully  
Information collected must be processed for limited purposes  
Information collected must be adequate, relevant and not excessive  
Information collected must be accurate and up to date  
Information must not be held for longer than is necessary  
Information must be processed in accordance with the individual's rights  
Information should not be transferred outside the area of the Act unless adequate levels of protection exist.

[4]

**6 Four descriptions from:**

Phone call  
Text message  
Email  
Social network site  
Blog/microblog  
Video call

[4]

**7 (a) Two from:**

Payroll workers  
Typing pool workers  
Car production workers  
Checkout operators  
Bank workers

[2]

**(b) Two from:**

Website designers  
Computer programmers  
Delivery drivers in retail stores  
Computer maintenance staff  
Robot maintenance staff

[2]

**8 Four from:**

Stores IP addresses  
IP address is a unique identifier set up by network manager/ISP  
Can change but should match the network it's on  
IP address consists of 4 numbers separated by full stops  
Stores MAC addresses  
6 pairs of hexadecimal digits  
MAC address is usually hard coded by manufacturer, never changes

[4]

|               |  |                 |              |
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**9 (a) Three** from:

- Encrypting the password
  - Ask for memorable information, such as mother's maiden name
  - Changing passwords very regularly
  - Use TANs
  - Only being asked for or providing a limited number of characters from the password
  - Twin factor authentication
- [3]

**(b) Three** from:

- Save travelling expenses
  - Saves time travelling/queuing
  - Elderly/disabled people don't have to travel
  - No embarrassment having to ask for loans face to face
  - Can bank when banks are closed
  - Use it anywhere there's an internet connection
- [3]

**10 (a)** The car registration number [1]

**(b) Two** from:

- Car owner's name
  - Car driver's name
  - Height of vehicle
  - Colour of vehicle
  - Credit/debit card details
  - Make of car/model of car
  - Length of vehicle
- [2]

**(c) Two** from:

- As the car arrives a camera takes a snapshot of the number plate as an image
  - Stores it in a file
  - Software identifies where number plate is in image and crops that part of the image
  - The OCR software converts the registration number to numbers/letters
- [2]

**(d) Three** from:

- The number plate is compared...
  - ...with those stored on the customer file
  - When a matching record is found
  - The name of the customer is read
  - The name is merged into the message
  - And a signal is sent to screen to display the appropriate part of the message
- [3]

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- 11 (a)** Price... – 1 mark  
...descending order – 1 mark [2]
- (b)** Year\_released... – 1 mark  
...ascending order – 1 mark [2]
- (c)** Year\_released<2010 AND Price<8.99
- Year\_released – 1 mark  
<2010 – 1 mark  
AND – 1 mark  
Price – 1 mark  
<8.99 – 1 mark [5]
- (d)** Erasure, Jimmy Smith
- 1 mark if only one of these given  
Minus 1 for each additional artist, to a mark of zero [2]
- 12 (a) Six** from;
- As it stands the form is not fit for purpose.  
On the one hand:  
The fields which require completion are all included.  
Fields are clearly labelled  
The space allowed for data entry is more than adequate  
On the other hand the form could be improved by having:  
Appropriate space for each field  
Screen more spread out  
Larger font for field names  
Drop down list for Number of adults, Number of children, Number of infants (1 mark each, 2 max.)  
Drop down list for date of return/date of departure  
Drop down list for Class  
Separate drop down lists for dd/mm/yyyy  
Navigation buttons could be included to move between records  
Drop down list for Number of adults, Number of children, Number of infants (1 mark each, 2 max.) [6]
- (b) Three** from:
- A format check ensures that data is in a specific format...  
...such as two digits for day, two digits for month and four digits for year  
In the table above the date would be rejected by this check as it has one digit for the month in one example two in the other  
In the table above the date would be rejected by this check as it has two digits for the day in one example and one in the other [3]

|               |  |                 |              |
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**13 (a) Two** from:

A URL is a Uniform Resource Locator  
 Is the unique address for a file that is accessible on the Internet  
 It consists of a protocol usually http or https  
 Then a domain name that identifies a specific computer on the Internet  
 Then a pathname that specifies the location of a file in that computer. [2]

**(b) Three** from:

<http://www.cie.org.uk/gcseict/giraffe.htm>  
 When the giraffe image is clicked on  
 The user would be redirected to the part of the CIE website  
 This website contains the giraffe web page [3]

**14 Three** from:

Used advanced searches  
 Use Boolean operands...  
 ...use + and – to limit results to only key words  
 Use speech marks around key phrases  
 Use the specific web address [3]

**15** Generic file formats are those that when files are saved in that format they can be used in different types of application software – 1 mark

**Three** from:

A .txt file can be imported into any text editor/ word processing/DTP package  
 A .csv file can be imported into any spreadsheet  
 A .jpg/.gif/.png file can be used in most bitmap image editing software  
 A .pdf can be used in any document format reader  
 A .rtf can be used in any word processor and retains some formatting  
 A .css can be opened in any text editor  
 A .htm can be opened by any web browser [4]

**16 Four** from:

The letter will be more personal/can have the member's name on it  
 The letter will be of better quality and look more professional  
 Easier to target team members of specific sports  
 Easier to identify how many letters to print  
 Address labels are easier to produce using the data from the database [4]

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- 17 (a) (i) Host nations/Venues/Country [1]
- (ii) Number of times hosted [1]
- (iii) The number of times Countries that have hosted the Commonwealth Games [1]
- (b) Bar/column chart [1]
- 18 Three matched pairs from:
- Content layer  
Content can consist of text or images [2]
- Presentation layer  
This layer is defined by the CSS or styles to indicate how elements are displayed [2]
- Behaviour layer  
This layer of a Web page allows interaction [2]

|               |  |                 |              |
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19 To be marked as a level of response:

**Level 3 (7–8 marks)**

Candidates will describe in detail the reliability and unreliability of at least two methods of preventing unauthorised access to data.

Examples will be given and will be appropriate.

The information will be relevant, clear, organised and presented in a structured and coherent format.

Specialist terms will be used correctly and appropriately.

**Level 2 (4–6 marks)**

Candidates will describe the reliability or otherwise of methods of preventing unauthorised access to data.

For the most part, the information will be relevant and presented in a structured and coherent format.

Examples will be given and will be mostly appropriate.

Specialist terms will be used appropriately and for the most part correctly.

**Level 1 (1–3 marks)**

Candidates will identify some of the methods of preventing unauthorised access to data.

Answers may be in the form of a list.

There will be little or no use of specialist terms.

Errors of grammar, punctuation and spelling may be intrusive.

**Level 0 [0 marks]**

Response with no valid content

Examples of reliability of methods

User id and Password will...

...prevent users who do not know the password from gaining access

...will reject users who try to guess passwords (usually after 3 attempts)

Strong passwords using a mixture of alphabetic, alphanumeric and special characters...

...will be difficult to guess

Biometrics are unique and are almost impossible to duplicate...

...only the user who has those characteristics can access the laptop

Using biometrics means that passwords don't have to be remembered

Laptops can now come with fingerprint scanner

Laptops can have built in retina identification

Examples of lack of reliability

Strong passwords can be difficult to remember

...can be easily forgotten

...can be easily disclosed to any user

Software for retina scan can malfunction

User can have fingerprints affected by injury/cut on a finger

Laptops with this technology tend to cost more

Low cost fingerprint technology tends to be inaccurate

Fingerprints can be copied by expert thieves

[8]

- 20 Each paragraph has been indented on the first line [1]  
 Each occurrence of Cambridge Primary has been emboldened [1]  
 The line spacing has been increased [1]  
 The text has been fully justified [1]