



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

INFORMATION AND COMMUNICATION TECHNOLOGY

0417/13

Paper 1 Written

May/June 2016

MARK SCHEME

Maximum Mark: 100

Published

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

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1 (a) Keyboard [1]

(b) Mouse [1]

(c) Temperature sensor [1]

(d) Joystick [1]

2

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

4 correct answers – 2 marks

2 or 3 correct answers – 1 mark

1 correct – 0 marks

[2]

3

	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	✓	

4 correct answers – 2 marks

2 or 3 correct answers – 1 mark

1 correct – 0 marks

[2]

4 (a) Normal data [1]

(b) Abnormal data [1]

(c) Extreme data [1]

(d) Live data [1]

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5 Four from:

Air flight tickets
 Theatre tickets
 Holiday booking
 Cinema tickets
 Rail tickets
 Hotel room booking
 Restaurant table/seat booking
 Football match booking
 Concert/performance booking

[4]

6 Four from:

Microprocessor controlled devices do much of the housework
 Do not need to do many things manually
 Do not need to be in the house when food is cooking
 Do not need to be in the house when clothes are being washed
 Can leave their home to go shopping/work at any time of the day
 Greater social interaction/more family time
 More time to go out/more leisure time/more time to do other things/work
 Are able to do other leisure activities when convenient to them
 Can encourage a healthy lifestyle because of smart fridges analysing food constituents
 Do not have to leave home to get fit

[4]

7 (a) As well as the recipient this sends a copy of the email to the email addresses listed after cc

[1]

(b) bcc is the same as cc except that the recipient is unaware that copies have been sent

[1]

(c) This sends a message that has been received to another email address

[1]

(d) This is a group of email addresses that are given a group name so that the sender only needs to type in one name to send an email to several recipients at once

[1]

(e) A file that is sent attached to/with the email

[1]

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8 (a) Three from:

The books database is searched to find the accession number
 The fingerprint scan is converted into digital data patterns
 The computer then maps points on the fingerprints and uses those points...
 ...to search for similar patterns in the (borrower) database.
 Matching record is found
 The membership number is retrieved
 Record is checked to see if number of books allowed is not exceeded/are fines due?
 The membership number is written to the file against the accession number in the books database
 The accession number is written against membership number in the borrower file. [3]

(b) Two from:

Accession number is compared with those on book file
 Matching record is found
 Record is flagged as returned/changed to returned
 The accession number is deleted against membership number in the borrower file/borrower is recorded as having borrowed one less book
 Computer calculates if book has been returned overdue [2]

9 (a) Two from:

Sort code
 Account/bank card number
 3 digits from password/passcode
 Memorable date/mother's maiden name/favourite place/answer to security question/place born
 Date of birth [2]

(b) Three from:

Transfer money to a different account
 Pay bills
 Amend/create standing orders/direct debits
 Order a new PIN
 Stop a cheque
 Can ask about recent/pending transactions
 Can apply for a loan
 Can check account balances
 Can transfer funds between accounts
 Can amend personal details [3]

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10 (a) Two from:

Student id number/prompts for student number
date of birth
student name
Instructions on how to complete the form
Question numbers
Centre number
Centre name

[2]

(b) Three from:

Dedicated scanner device shines a beam of light onto the form
Light is reflected back to sensors
Marks reflect less light so sensors used to identify position of marks
Computer compares these with correct answer positions

[3]

(c) Three from:

If the marks don't fill the space completely they may not be read correctly/overfill the space/smudged
If the marks are not in a dark enough pencil they may not be read correctly
If more than one lozenge shaded in result is invalidated
Only suitable for recording one out of a selection of answers, not suitable for text input
Have to use prepared forms which may be expensive
Examinations could consist of mainly multiple-choice questions changing the nature of what is being tested

[3]

11 (a) Two from:

Use a check digit
Single digit calculated from other digits appended to these,
Computer carries out fresh calculation on digits and compares answer with original check digit.

[2]

(b) Limit check/range check – 1 mark**Reorder_level** <=100 – 1 mark

He probably omitted/forgot the = sign – 1 mark

[3]

(c) Use a format check – 1 mark**Supplier_code** should be 2 letters followed by 3 digits – 1 mark

[2]

(d) Barcode – text/alphanumeric

[1]

Supplier_code – text/alphanumeric

[1]

Contents – text/alphanumeric

[1]

Price – (number), currency

[1]

Reorder_level – (number), integer

[1]

Weight – (number), decimal

[1]

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12 (a) =Countif(B\$2:B\$23,D5)

Countif – 1 mark

(B2: – 1 mark

B23, – 1 mark

Absolute referencing – 1 mark

D5) – 1 mark

[5]

(b) A24 – 1 mark

B24 – 1 mark

D15 – 1 mark

[3]

13 Internet Service Provider/provides Internet access – 1 mark

Two from:

Often offers web space to create own website

Provides email address

Router to connect to the internet

Domain name to have own website

Storage space to save data in the cloud

DNS service to convert URLs to IP addresses

[3]

14 Six from:

Internet is not policed so information is not necessarily reliable

Anybody can have a website so information is not necessarily reliable

Anybody can publish their understanding of a topic so information is not necessarily reliable

If site has excessive advertising it could be unreliable

If the advertising is related only to its own products it could be unreliable

The final part of a URL can help to identify reliability...

... .ac..., .gov, .org government/academic sites are usually fairly reliable

If site is endorsed by reliable/reputable people/organisations it can be accepted as being

reliable/If it has links to other reliable sites/ sites which have testimonials it is usually reliable/If it has testimonials it is likely to be reliable

If the author's credentials are good it is likely to be reliable

If information is comparable to information from reliable/authenticated text books it is likely to be reliable

If the date of the last update was a long time ago it is likely to be unreliable

Sites which have grammatical/spelling mistakes are likely to be unreliable

Compare information from different sites/text books to see if the results are similar

If it has been recommended by teachers it is likely to be reliable

[6]

15 (a) *Jpeg* –

Joint photographic experts group – 1 mark

Commonly used for lossy compression for digital images/Used for complex images/photographs/used for saving storage space/used for increasing transmission speed/reduced download time (particularly with web pages) – 1 mark

[2]

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(b) Png

Portable network graphics/raster graphics file format – 1 mark

Uses lossless data compression/Used for transferring logos or images with no colour gradient – 1 mark

[2]

16 The shape has been filled with black/dark colour – 1 mark

It's height has been increased whilst leaving the width as the original – 1 mark

It has been rotated through 180°/reflected about the base – 1 mark

[3]

17 Six from:

Missing `</a>` on fourth line

Missing `</td>` on fourth line

Missing a in `<href>` on sixth line

. instead of : after mailto

, instead of ? in front of subject

Extra > in subject line of email

`<a>` instead of `</a>` on eighth line

[6]

18 Six from:

Make images more mature

Make font type more appropriate

Plain background

Insert a heading

Make language more appropriate

Include slide numbers

Consistency of display through use of master slide

Images not overlapping with the text

[6]

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19 To be marked as a level of response:

Level 3 (7–8 marks)

Candidates will address both aspects of the question and discuss/consider different advantages/disadvantages.

The issues raised will be justified. There will be a reasoned conclusion.

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 address both aspects of the question and discuss/consider different advantages/disadvantages although development of some of the points will be limited to one side of the argument.

There may be a conclusion.

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 may only address one side of the argument, and give basic advantages or disadvantages.

Answers may be simplistic with little or no relevance.

Level 0 (0 marks)

Response with no valid content

Examples

Filters are easier to create using database software...

...such as names of students matching a criterion...

...e.g. passing an exam/born in a certain year

Queries can be saved using database software...

...for ease of use with updated data such as new students attending school

Calculated fields can be difficult to create using database software...

...such as calculating ages from date of birth

Easier to create complex formulae in spreadsheets...

...such as nested ifs for determining if a student has passed a number of modules in a course

Can use more functions in spreadsheets...

...such as countif to count the number of students passing an exam

Charts are easier to produce using spreadsheet software...

...to show progress of students

Repeated data can be easier to enter using spreadsheet software

Fields easier to name and query using database software

Spreadsheets are easier to use to model different scenarios...

...such as number of students passing an exam

Can only create a relational database using database software

Allow justified examples of use of database or spreadsheet software

[8]