

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**  
International General Certificate of Secondary Education

**MARK SCHEME for the October/November 2013 series**

**0417 INFORMATION AND COMMUNICATION  
TECHNOLOGY**

**0417/13**

Paper 1 (Written), maximum raw mark 100

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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- 1 A microphone B speakers [1], [1]  
 C dot matrix printer D joystick [1], [1]

- 2 **hub** CD ROM graph plotter [1]  
 magnetic disc **router** trackerball [1]

3

	True	False	
A network card is an example of hardware.	✓		[1]
A light sensor is an example of software.		✓	[1]
Icons are part of a Graphical User Interface.	✓		[1]
A magnetic tape has a greater storage capacity than a CD.	✓		[1]
Laser printers are quieter than a dot matrix printer.	✓		[1]

- 4
- |                          |   |   |     |
|--------------------------|---|---|-----|
| Remote control           | → | to input data at a POS                                      | [1] |
| Electronic scales        | → | playing a video game  | [1] |
| Joystick                 | → | Inputting text so it can be processed by a software package | [1] |
| Optical Character Reader | → | an input device in a burglar alarm system                   | [1] |
| Sound sensor             | → | to operate a multimedia projector                           | [1] |

5

	True	False	
A magnetic tape has faster data access than a DVD ROM.		✓	[1]
A CD is used to store a two hour high definition movie.		✓	[1]
A magnetic disc is used for online processing.	✓		[1]
Pen drives are used to copy data from one computer to another.	✓		[1]

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PEN DOWN		ENDREPEAT	
LEFT	90	PENUP	
FORWARD	50	FORWARD	30
REPEAT	2	PENDOWN	
RIGHT	90	FORWARD	70
FORWARD	50		

1 mark for each correct statement

[8]

7 (a)

Companies do not have to buy any equipment		
Companies can arrange the meeting for any time of day		
It is safer as employees do not have to travel	✓	[1]
Companies do not have to pay hotel expenses	✓	[1]
Employees don't have to carry so many documents with them	✓	[1]
Employees are paid less		

(b)

Video conferences can only last a short time		
Employees are unable to see who they are talking to		
It is difficult to call international meetings because of time differences	✓	[1]
There is sometimes a time lag between video and sound	✓	[1]
It is difficult to share documents		
Legal documents may need to be signed	✓	[1]

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Electrocution from touching bare wires		
Fire from overheating of equipment		
Fire from overloading of sockets		
Neck pain due to bad positioning of the screen	✓	[1]
RSI due to continuous typing	✓	[1]
Sight problems from staring at the screen continuously	✓	[1]

9 (a) **Four** from:

Illegal accessing of data  
 Unauthorised access to data/computer system  
 Usually remotely  
**Two max.**

Deletion of data  
 Amending/changing of data  
 Copying **and** distributing data  
 Using data for fraudulent purposes  
**Three max.**

[4]

(b) **Four max from two descriptions:**

Allocating User ID and one of password/PIN/Memorable data to network users  
 Password/PIN/Memorable data has to be entered before access is gained  
 Password/PIN can be changed frequently to avoid hackers guessing them  
 Unsuccessful logins can throw you out of the system

Allocating each user a Magnetic stripe/smart card/electronic key/bar code system/ID card  
 Card/key has to be read before access is gained  
 Prevents people without cards accessing system

Biometric data has to be used to enter the network  
 Fingerprint/retina/iris/face/voice recognition used as input  
 Biometric data is difficult to replicate  
 Biometric data is used because it is unique  
 Data is compared with those stored on the system.

Firewall is installed in the network  
 Only allows known computers to access network/prevents unknown computers accessing network  
 Only allows known or trusted programs to communicate across the firewall/with the computer

[4]

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**10 (a) Three** from:

- Less danger of mugging
- Can shop when shops are closed
- Doesn't have to spend time queuing/going around different shops
- Can compare prices at different shops more easily
- Can look at wide range of shops
- Easier to search and find what you're looking for

**[3]****(b) Three** from:

- Lack of socialising/social contacts
- Customers must have a computer/Internet access/(basic) computer skills
- Deprived of personal touch
- Phone bills can increase
- Without broadband other family members cannot use the phone
- Cannot see/feel goods in reality

**[3]****11 Five** from:

- Anybody can set up a website (claiming to be factually accurate) so information is not necessarily reliable/accurate
- Some commercial sites are bound to be biased
- If site has excessive advertising it could be unreliable
- If the advertising is related only to its own products it could be unreliable
- Can use the final part of a URL to identify reliability
- .ac, .gov, .org are usually fairly reliable
- Compare information from reliable sites or reliable/authenticated text books (to see if it is reliable)
- See if responsible bodies have endorsed the site
- Does it have links to other reliable sites/unreliable sites?
- If site has testimonials it is likely to be reliable
- If the date of the last update was a long time ago it is likely to be unreliable
- If the author's credentials are good it is likely to be reliable

**[5]****12 Three** matched pairs from:

- Direct changeover  
New system replaces existing system immediately/overnight
- Parallel running  
New system runs alongside/together with existing system
- Phased implementation  
new system is implemented part by part
- Pilot running  
system is implemented in one branch/one office (at a time)

**[6]****13 (a) Three** from:

- Printer
- Monitor
- Speaker/buzzer
- LCD display

**[3]****(b) Chip reader/magnetic stripe reader****[1]**

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**(c) Seven from:**

Details from customer's card processed  
 PIN is compared with that stored on the chip  
 Card is checked for validity/reported stolen  
 If PIN is OK/verified transaction is authorised  
 (Bank code allows) shop computer to contact bank's computer  
 Account checked for sufficient funds  
 If insufficient funds/ over the credit limit then transaction/card is rejected/If sufficient funds then transaction is authorised  
 Amount deducted from customer's bank account  
 Amount credited to shop's bank account  
 Itemised receipt printed out

Card might be rejected if:

PIN entered incorrectly  
 Past its expiry date  
 Registered as stolen  
 Physical damage to chip  
 Unusual spending patterns  
 Unable to use some cards abroad

**[7]****14 Four from:**

Phishers send an e-mail...  
 ... asking for a customer's details  
 appears to be from the bank/says that the bank needs the information  
 asks the customer for password, card or account number

**Three max.**

So that they can use these details to log on to bank website  
 Access account and transfer funds

**Two max.****[4]****15 (a)**

<b>Field name</b>	<b>Data type</b>
Artist_name	text
CD_title	text
Price	Currency
Date_recorded/Year_recorded	Date
Number_of_tracks	Integer

**[1]****[1], [1]****[1], [1]****[1], [1]**

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(b) **Three** matched pairs from:

Normal data

**One** of:

greater than or equal to 20 and less than or equal to 90

Abnormal data

**One** of:

greater than 90 or less than 20

Extreme data

**One** of:

90, 20

[6]

(c)

purpose of the system		
limitations of the system		
program coding	✓	[1]
system flowcharts	✓	[1]
hardware and software requirements		
file structures	✓	[1]
list of variables	✓	[1]
frequently asked questions		

**16 Six** from:

*Batch processing:*

data are collected together

during the course of the day

then processed all at once

processed overnight

letters sent to borrowers who are overdue

letters sent to borrowers following morning

no human intervention

*Online processing*

results in immediate updating of records

book details inputted as soon as book borrowed/returned

records are searched until match is found

recorded as being borrowed/returned

[6]