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)

Field name	Data type	
Artist_name	text	
CD_title	text	**[1]**
Price	Currency	**[1], [1]**
Date_recorded/Year_recorded	Date	**[1], [1]**
Number_of_tracks	Integer	**[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]**