MARK SCHEME for the October/November 2013 series

0417 INFORMATION AND COMMUNICATION TECHNOLOGY

0417/12   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.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

1   A   magnetic tape   B   flash memory card
    C   blu-ray disc   D   hard disc   [4]

2   disc drive   ⟨ laser printer ⟩   light pen   [1]

    Microphone   ⟨ TFT monitor ⟩   web cam   [1]

3

	hardware	software	
virus checker		✓	[1]
keyboard	✓		[1]
chip	✓		[1]
mobile phone	✓		[1]

4   **An inkjet printer**   is used to print high quality photographs   [1]

    A graphics tablet   is used to input freehand drawings   [1]

    A keypad   is used to input preset values into control systems   [1]

    A multimedia projector   is used to show slides   [1]

    A joystick   is used to control a flight simulator   [1]

5 **Three** matched pairs from:

User ID and one of password/PIN/Memorable data

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

Magnetic stripe/smart card/electronic key/bar code system/ID card

Has to be read before access is gained/Prevents people without cards accessing system

Biometric data

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

Firewall

Only allows known computers to access network/prevents unknown computers accessing network [6]

6 **Three** from:

Allows users to keep in contact/communication/connect with friends
Allows user to send messages to more than one friend/to people overseas
Can search for people who you've fallen out of touch with/people with similar interests
Can arrange meetings/events/visits to cinemas/theatre with whole group
Can show photographs to whole group/share photographs/music/videos
Can create and share personal profile
You can follow actions/thoughts of others
Can write comments on other's posts
Can have privacy controls
Can lead to cyber bullying [3]

7
PEN DOWN		FORWARD	70
FORWARD	80	REPEAT	6
RIGHT	90	FORWARD	30
PENUP		RIGHT	60
FORWARD	60	ENDREPEAT	
PENDOWN			

1 mark for each correct statement [8]

8 **(a)** Direct [1]

(b) Chip reader/magnetic stripe reader/bar code reader/OCR/RFID [1]

(c) Two from:

More accurate/fewer mistakes
Faster **data entry** [2]

(d) Three from:

The borrower's file and book data files would be saved as separate tables
Primary key/key field(s)/foreign key would be identified
One mark is available for an appropriate example of the field which would be set to primary key
This would be used to link the tables together [3]

9 **Five** from:

Video conferencing is a method of visual and audio communication between people at separate locations
Webcams/small video cameras are used to input faces of participants
Large monitor/projector to output faces of participants
Microphones are used to input voices of participants
Speakers are used to output voices of participants
Router/broadband modem used to connect to internet
Video conferencing software needed to link participants
Employees are connected on-line/may need to access the Internet/WAN to work
Images of the employees appear on the screen in real time
Software is needed in each computer to operate the conference
Employees can be heard by all the other employees in the conference
You can take part wherever you are [5]

10

	✓	
Back ache from bad posture		
Electrocution from touching bare wires	✓	[1]
Fire from overloading electric sockets	✓	[1]
Headaches from staring at the screen continuously		
Injury caused by tripping over trailing wires	✓	[1]
RSI in the fingers		

11 (a) **Two** from:

Humidity
Moisture
Light
pH [2]

(b) Sensors send analogue data to computer [1]
Computer works in digital [1]

(c) The preset value is the (required) value input by the user/already stored in the computer [1]

Three from:

temperature is compared with preset value
if lower than preset value computer switches on heater
if lower than preset value computer shuts windows
if higher than preset value computer switches heater off
if higher than preset value computer switches fan on
if higher than preset value computer opens window [3]

12 (a) **Two** from:

Bar code reader
Key/number pad
Weighing scales
Touch screen
RFID reader
Magnetic Stripe reader
Chip and PIN reader [2]

(b) **Four** from:

The stock file is searched
Until a match is found with the entered bar code number/product id number
The number in stock of the matching record is read
One is subtracted from the number in stock
The number in stock is compared with the re-order number
If it is equal to the re-order number
More goods are automatically re-ordered
The new value of number in stock is written back to the file [4]

13 (a) **Three** from:

Observation
Interview
Questionnaire
Examining documents [3]

(b)

Field name	Data type	
First_name	Text	[1]
Family_name/second_name	Text	[1]
Phone number	Text	[1]
Worker_ID	Text	[1]
Wage	currency	[1], [1]

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

A letter followed by five digits
This should be accepted by system

Two letters followed by four digits
This would be rejected by format check

Six digits
This would be rejected by format check

Six letters
This would be rejected by format check

Fewer or greater than 6 characters
This would be rejected by a length check

(1 mark for item, 1 mark for reason) [6]

14 (a) **Two** from:

A copy of file(s)
On an alternative medium
In case anything happens to original
Usually removed from the location of the computer [2]

(b) Six from:

Magnetic tape is less expensive per unit volume of memory
Tape is slower to access data than magnetic disc
Tape requires a special drive…
…but these often come as standard with file servers
Tapes are easier to store
Tapes are easier to remove from premises if needed

One mark is available for a reasoned conclusion [6]

15 Four from:

phishing is done by email
can invite you to go to a website/respond to an email
pharming is done by installing malicious code on a PC or server
redirects a genuine website's traffic to the fraudulent website [4]

16 Five from:

Advantages
Safer environment
Don't need to lift heavy loads/Fewer manual tasks to do
Cleaner/healthier working environment
Can lead to retraining to improve skills
More technical jobs available

Disadvantages
Can lead to unemployment
Deskilling can occur

One mark is available for a reasoned conclusion [5]

17 Seven from:

Danger of accessing inappropriate websites
Can take long time to find required information
Have to have internet connectivity/computer/phone line/modem
Internet tends to be up date
Internet has vast amounts of information/wide range of information
Speed of search only if referring to use of search engine
Can access biased/inaccurate websites
Lack of expertise leads to inefficient searching
Easy to plagiarise information [7]