

CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

MARK SCHEME for the October/November 2012 series

**0417 INFORMATION AND COMMUNICATION
TECHNOLOGY**

0417/11

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 2012 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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6 (a) **Two** from:

- Data could be corrupted on original medium
- Data could be accidentally amended/overwritten on original medium
- Data could be accidentally deleted from original medium
- Data could be maliciously deleted from original medium [2]

(b) **Two** from:

- Virus is a piece of programming code
- Which replicates itself...
- Can fill up storage medium making it unusable
- Deletes data/change data
- Makes software/operating system unusable [2 max]

If the original medium has a virus the backup will have it as well/backup will have no effect on the hard disc so it is still susceptible to viruses [1]

7 **Three** from:

- Blog usually has a single author/ a Wiki usually has many authors
- Blog is usually in reverse chronological structure/ a Wiki has a structure determined by content and users
- Blog is usually personal/someone's opinion/ a Wiki is usually objective
- Can't edit a blog/ a Wiki can be edited/ Can only add comments to a blog [3]

8

	Online	Batch	
Paying for goods at an EFTPOS	✓		[1]
Producing electricity bills		✓	[1]
Booking a holiday	✓		[1]
Producing payslips		✓	[1]

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9

PENDOWN FORWARD 70

FORWARD 70 REPEAT 4

RIGHT 90 FORWARD 40

PENUP RIGHT 90

FORWARD 70 END REPEAT

PENDOWN

1 mark for each statement correctly placed

Other less economical solutions can gain full marks

[8]

10 **Five** from:

Benefits:

Can call meeting at short notice

No need to pay travelling expenses

Can work from home

Employees will save time travelling

Do not have to pay hotel expenses

Do not have to pay for conference room facilities

Safer as participants do not have to travel

Don't have to transport/carry equipment/lots of documents/documents don't get lost in transit

Four max.

Drawbacks:

Takes time/costs money to learn new technology/to be trained

Difficult to have international meetings because of time differences

Initial cost of hardware (and software)

Equipment can break down/power cuts can stop conference

Poor strength of signal/time lag/lip sync can be a problem/ connection can be lost

Loss of personal/social contact

Legal documents cannot be signed

Four max.

[5]

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11

Take regular breaks from working at the computer		
Do not overload electrical sockets	✓	[1]
Make sure all cabling is securely tied	✓	[1]
Sit with your back upright at all times		
Always have a CO ₂ fire extinguisher in the room	✓	[1]
Use a wrist rest when typing		

12 (a) Two from:

Temperature
Humidity
Moisture
pH [2]

(b) Sensor measures analogue [1]
Computer works in digital [1]
Analogue to digital converter [1]

(c) Four from:

microprocessor compares light reading with preset value
if lower than pre-set value microprocessor sends signal to switch on light bulb
if higher than pre-set value microprocessor sends signal to switch off light bulb
process is continuous/ monitoring of sensors is continuous [4]

13 (a) Three from:

Card number
PIN
Expiry date
Type of card/issuer
Security number [3]

(b) Three from:

Card is valid/card number exists
Card is in date
PIN entered matches that on card
Checks if card is stolen [3]

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(c) **Five** from:

Customer bank contacted
 Bank looks up customer account number
 Checks available balance
 Checks daily (card) limit
 If insufficient funds then transaction is rejected
 If sufficient funds then transaction is authorised
 Money deducted from customer account
 Money credited to supermarket account [5]

14 (a) Three from:

Examining documents of the current system
 Distribute questionnaires to users of the current system
 Interview users of the current system
 Observing the current system/workers/users [3]

(b)

Field name	Validation Check	
Book Title/Author	none	[1]
Author/ Book Title	none	[1]
Price	Range check	[1]
Fiction/Non-Fiction	Boolean	[1], [1]
Hardback/Paper back	Boolean	[1], [1]

(c) Any **three** matched pairs from

A value between 0 and 20
 This is normal data and should be accepted by the system

 0 or 20
 This is extreme data and should be accepted by the system

 Any number above 20 or text
 This is abnormal data and should be rejected by the system [6]

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- 15 (a) Optical Mark Recognition/Reader [1]
 Optical Character Recognition/Reader [1]

(b) Six from:

OCR and OMR are quicker methods of entering data compared to a keyboard
 OMR has limited uses such as exam answers
 OMR can be used in school registers
 Optical Character Recognition is more prone to errors
 OCR can be used by utility companies to read meters/to make entered text editable
 Keyboard is used to input data manually/typing
 Keyboard can be more accurate than OCR/less accurate than OMR
 Keyboard and OCR can input text more easily than OMR
 Pre printed stationery is required for OMR
 Specialised equipment is required for OCR/OMR [6]

16 (a)

Robots are cheap to buy	
Running costs are lower as humans have to be paid wages	✓
Robots never need maintenance	
Humans cannot work continuously	✓
Robots can work in hazardous conditions	✓
There is lower productivity with robots	
Robots produce the same standard of finished product every time	✓
Humans have greater accuracy than robots	

[4]

(b) Three from:

Programming robots
 Changing robot arm tools/end effectors
 Maintaining robots
 Supervising operations
 Quality control/inspecting finished cars [3]

17 Three from:

installing malicious code on a PC or server
 user is redirected to bogus website
 user accesses websites which look authentic
 but belong to the fraudster/hacker
 are used to gain bank/personal details [3]