

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2014 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 2014 series for most Cambridge IGCSE[®], Cambridge International A and AS Level components and some Cambridge O Level components.

Page 2	Mark Scheme	Syllabus	Paper
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- 1 (a) **Two** from:
 Number pad
 Keyboard
 Microphone
 Web cam
 Touchpad [2]

- (b) Screen [1]
 Speaker [1]

- 2 Magnetic stripe [1]
 Chip [1]

- 3
- | | | |
|------------------------------------|---|-----|
| Using Multipart stationery | ✓ | [1] |
| Producing high quality printouts | | |
| Producing A0 printouts | | |
| CAD applications | | |
| Producing continuous printouts | ✓ | [1] |
| Producing printouts of photographs | | |

- 4
- | Software | Task | |
|------------------------------|----------------------------------------------|-----|
| Measuring program | monitoring atmospheric pressure | [1] |
| Control program | keeping temperature constant in a greenhouse | [1] |
| Spreadsheet | Modelling personal finances | [1] |
| Presentation software | Creating a slide show | [1] |
| Search engine | finding information on the internet | [1] |

Page 3	Mark Scheme	Syllabus	Paper
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5	Pen drives are used to make backups on large company file servers.		✓	[1]
	Magnetic tapes use direct access when searching for records.		✓	[1]
	Fixed hard discs have slower access times than optical discs.		✓	[1]
	DVD RWs allow you to save new data to them	✓		[1]
	A CD has greater storage capacity than a DVD		✓	[1]

6 (a) Command Line Interface/CLI [1]

(b) Graphical User Interface/GUI [1]

7 (a) 5 [1]

(b) Any cell in the range B3:D6 [1]

(c) A1 or any cell in ranges A2:E2 or A3:A6 [1]

(d) = b4–c4 [1]
b–c formula [1]
Row 4 [1]

(e) = if(c5 > 150, "Yes", "No") [1]
Correct syntax of if() [1]
C5 > 150 [1]
"Yes", "No" [1]

PEN DOWN	FORWARD 20	[1]
FORWARD 10	PENUP	[1]
LEFT 90	FORWARD 40	[1]
FORWARD 25	PENDOWN	[1]
RIGHT90	FORWARD 25	
FORWARD 30	RIGHT 90	
RIGHT 90	FORWARD 40	[1]

Page 4	Mark Scheme	Syllabus	Paper
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- 9 (a) Two from:**
 Make their file/work read only
 Password encrypt their file/work
 Grant people access to their file/work without permission to edit
 Make their file/work hidden [2]
- (b) Modem/router [1]**
- (c) Two from:**
 Email
 Instant messaging
 VOIP
 Video conferencing [2]
- (d) Advantage**
 Unauthorised users won't be able to understand data/only person/computer with key can understand data
- Disadvantage**
 The data can still be deleted/if the person encrypting the data accidentally deletes the encryption key the data will be unreadable [2]
- 10 (a) Issue – heavy equipment falling injuring users [1]**
 Prevention – sturdy tables/place heavy equipment in centre of tables [1]
- Issue – fire might be caused [1]**
 Prevention – CO₂ extinguisher/don't overload sockets/have fans/cooling system [1]
- (b) Three from:**
 A piece of programming code/software/program/script
 It replicates itself
 Attaches itself to files
 Corrupts/deletes files/data
 Can corrupt or erase the contents of the hard disk
 Can completely fill the hard disk/memory making it unusable/slows down operations
 Makes software/operating system unusable
 One mark is available for an accurate description of method of transmission [3]
- (c) Three from:**
 Software that gathers data from computers without the user realising
 It monitors and records all key presses
 It sends this information back to the hacker who sent it out
 Used to gain personal details of users [3]

Page 5	Mark Scheme	Syllabus	Paper
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11 (a) Two matched pairs from:

Interview users of the existing system

Asking questions about the system face to face/in person

Distribute questionnaires to users of the existing system

Asking questions about the system in hard copy form

Observation of the existing system/workers in action

To see all aspects of the system/whole overview to see how system works

Examining documents about the current system

To see inputs and outputs to the system

[4]

(b) Four from:

Data capture forms

Screen layouts

Report layout

Screen displays

Validation routines

Data/file structures

[4]

(c) Two matched pairs from:

Parallel running

There is always the old system to fall back on in the event of the new system failing/training can be gradual

Phased implementation

You still have most of old system to fall back on/training can be gradual

Pilot running

Only one branch is affected if new system fails/other branches can learn from the branch's experiences

[4]

12 (a) Two from:

Router

Web cam

Microphone

Network card

Speakers

[2]

(b) Four from:

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

[4]

Page 6	Mark Scheme	Syllabus	Paper
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13

Patients are always cured.		
Patient records can be sorted into order more easily.	✓	[1]
Doctors can find patient records more quickly.	✓	[1]
Patients' medicines are never lost.		
Fewer doctors are needed.		
Nurses don't have to be paid as much.		
Takes up less filing space	✓	[1]

14 (a) **Two** from:

- Pen drives are easier to carry than CDs
 - Most computers have USB ports not all have CD drives
 - Pen drives store more data than a CD
- [2]

(b) **Two** from:

- Pen drives are more expensive than CDs
 - Pen drives are easier to lose than CDs
 - Saving directly to a pen drive can be problematical
- [2]

15 (a) (i) Bar code reader [1](ii) Chip/magnetic strip readers [1](b) Check digit [1]

(c) Four from:

- Product number is searched for in stock file
 - Matching number in stock reduces by 1
 - Compare number in stock with re-order level
 - If number in stock is less than re-order level product is re-ordered
 - Order is automatically sent to supplier
- [4]

(d) The PIN on the chip is compared with the typed in PIN [1]

(e) Four from:

- Bank looks up customer account number
 - Checks available balance
 - If insufficient funds then transaction is rejected
 - If sufficient funds then transaction is authorised
 - Amount deducted from customer account
 - Amount credited to supermarket account
- [4]

Page 7	Mark Scheme	Syllabus	Paper
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- 16** Three from:
 Cheques are collected together...
 ...during the course of the day
 Cheques are then processed all at once
 Cheques are processed overnight
 Bank accounts updated following morning [3]
- 17 (a) Three** from:
 Customers can pay bills
 Customers can amend/create standing orders/direct debits
 Customers can order a new PIN
 Customers can stop a cheque
 Customers can see recent/pending transactions
 Customers can apply for a loan
 Have access to up-to-date bank statements/can check account balances
 Can transfer funds between the customer's different accounts
 Can amend personal details [3]
- (b)** Withdraw cash/pay in cash [1]
- (c) Three** from:
 Fewer bank tellers so less paid out in wages
 Less actual cash handled – fewer robberies
 Have access to a wider customer base
 Fewer branch offices needed – less spent on rates/rent/utilities
 Less money spent on security staff [3]
- (d) Three** from:
 Initial cost of hardware/software is expensive
 Need to retrain staff
 Loss of customers/more difficult to sell other services due to lack of personal touch
 System maintenance may be expensive/costs of system maintenance [3]