

**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

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<b>Page 2</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>Cambridge IGCSE – October/November 2014</b>	<b>0417</b>	<b>12</b>

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

<b>Page 3</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>Cambridge IGCSE – October/November 2014</b>	<b>0417</b>	<b>12</b>

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]

8

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]

<b>Page 4</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>Cambridge IGCSE – October/November 2014</b>	<b>0417</b>	<b>12</b>

- 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 – CO<sub>2</sub> 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
	Cambridge IGCSE – October/November 2014	0417	12

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
	Cambridge IGCSE – October/November 2014	0417	12

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
	Cambridge IGCSE – October/November 2014	0417	12

- 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]