

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

**MARK SCHEME for the October/November 2010 question paper
for the guidance of teachers**

**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 must be read in conjunction with the question papers and the report on the examination.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the October/November 2010 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.



Page 2	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2010	0417	12

Accept answers which have been crossed out UNLESS they've been replaced.

In numbered responses mark first answer only except if other answer spaces have been left blank
Do not accept generalised terms such as 'quicker', 'cheaper', 'more efficient' unless qualified.

- 1 A TFT monitor (1)
 B CRT monitor (1)
 C Inkjet printer (1)
 D Graph plotter (1) [4]

- 2 **Blu-ray disc (1)** **CD ROM (1)** **MICR**
 Motor **Sensor** **Trackerball** [2]

- 3
- | | True | False | |
|---|------|-------|-----|
| Control software is used to access the Internet | | ✓ | (1) |
| A Graphical User Interface has windows, icons, menus and pointers | ✓ | | (1) |
| Laptop computers are popular because they are portable | ✓ | | (1) |
| Word processing software is used to monitor physical variables | | ✓ | (1) |
| Presentation software is used to create slide shows | ✓ | | (1) |
- [5]

- 4 (a) **OCR** is used to convert an image into text for use in a word processor. [1]
- (b) **A web camera** is used to input moving pictures into a computer. [1]
- (c) **An inkjet printer** is used to output photographs [1]
- (d) **A motor** is an output device used in robotics [1]
- (e) **A bar code reader** is used to read the ISBN from a book. [1]

Page 3	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2010	0417	12

5

A multimedia projector	✓	(1)
A dot matrix printer		
Measuring software		
A chip reader		
A remote control	✓	(1)
Presentation software	✓	(1)

[3]

6

RIGHT	90
FORWARD	100
.....	
RIGHT	90
FORWARD	80
.....	
PENUP	
FORWARD	40
.....	
PENDOWN	
FORWARD	80
.....	
RIGHT	90
FORWARD	100

1 mark for each pair of statements

[5]

7

	True	False	
The identifying number is the foreign key in a class list table	✓		(1)
The student's surname would be the primary key		✓	(1)
In order to have relational tables there must be a primary key	✓		(1)
The school's database is an example of a flat file		✓	(1)

[4]

8

	True	False	
Payroll processing		✓	(1)
Microprocessor controlled central heating	✓		(1)
The use of robots in manufacture	✓		(1)
Printing monthly utility bills		✓	(1)

[4]

Page 4	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2010	0417	12

- 9 **Boolean:** Re-order (Y/N) (1)
Date: Last order received (1)
Alphanumeric: Food type (1)
Numeric: Number in stock (1) [4]

10 (a)

Web cam	✓	(1)
Dot matrix printer		
Magnetic tape drive		
Modem/Router	✓	(1)
A trackerball		
A codec	✓	(1)
Broadband	✓	(1)
A telephone		

[4]

- (b) **Two** from:
Microphone
Speakers/Headphones
Headset [2]

- 11 **Magnetic tape:** To make backups (1)
CD R: To transfer data/programs from computer to computer/to save user data (1)
DVD ROM: For companies to distribute software/movies/For users to install software/view multimedia (1) [2]

- 12 (a) **Four** from:
Questions appear on screen
Symptoms typed in
Answers to questions typed in
Further questions appear on screen
Suggested illnesses/diagnoses are output
Probabilities of illnesses are output [4]

- (b) **One** from:
Car fault diagnosis
Chess games
Mineral prospecting
Financial advice
Insurance risk assessment
Tax systems
Plant identification
Animal identification [1]

Page 5	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2010	0417	12

- 13 To input data at an information kiosk → Graphics tablet
 To input data from a product in a supermarket → Touch screen
 To input a PIN → Bar code reader
 To input freehand drawings → Numeric keypad [4]

- 14 (a) **Three** from:
 Mouse
 Keyboard
 Printer
 Mobile phone
 PDA
 Headphones
 Webcam
 Camera
 Microphone
 Laptop
 Scanner
 Graphics tablet
 Modem [3]

- (b) **Two** from:
 Increased risk of hacking
 Limited range of connection
 Likelihood of interference
 Reduced speed of connection (compared to cabled networks) [2]

- (c) **2 marks** for each pair (max 3) from:
 Encryption (1)
 Data becomes indecipherable to unauthorised users (1)
 Firewall (1)
 Prevents unauthorised computers having access to the network (1)
 Anti spyware (1)
 Removes spyware from computers (1)
 Keylogging detection (1)
 Enables user to delete software which hacker has planted (1)
 Antivirus (1)
 Removes viruses from storage media (1) [6]

- 15 (a) **Two** from:
 Take regular breaks
 Exercise wrists/fingers etc.
 Wristpads/wrist rests
 Ergonomic keyboards [2]

Page 6	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2010	0417	12

(b) Two from:

- Don't bring food and drink near computers
- Use ducting for cables/tie cables together tidily
- Use recommended support devices for heavy equipment/don't place heavy equipment near to the edge of tops of tables
- Don't put too many plugs in a socket/use a RCB
- Ensure presence of CO₂ fire extinguishers

[2]

16 Four from:

- Adequate space for response/individual character boxes
- Fonts/font size should be easy to read
- Instructions how to complete form/clearly labelled field names
- Logical order of questions
- Questions spaced out/group relevant fields together
- Not too much text
- Sensible colour scheme
- Use of tick boxes
- Strike throughs
- Appropriate white space
- Provide box/place to sign in

[4]

17 (a) Three from:

- Data/file structures
- Validation routines
- Input methods/data entry screens
- Output formats/reports
- Error messages
- Processing/calculations

[3]

(b) (i) Normal data (1)

8 is within the acceptable range 0–10 (1)

[2]

(ii) Extreme data(1)

10 is on the edge of the 0–10 range (1)

[2]

(iii) Abnormal data (1)

13 is outside the acceptable range 0–10 (1)

[2]

18 (a) Two from:

- Purpose of the system
- Limitations of the system
- Hardware and software requirements
- Contact details of manufacturer/support network

[2]

(b) Two from:

- How to use the system
- Trouble-shooting guide
- Frequently asked questions

[2]

Page 7	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2010	0417	12

- 19 (a) Two** from:
 Lawful protection...
 ... given to authors and publishers
 Relates to the software the author/publisher created/published
 Prevents purchaser from making unlimited copies/lend it to others/change the software/sell it without the company's permission [2]
- (b) Two** from:
 Alteration of the code which is included to block copying
 Digital signature on the CD/DVD itself which prevents writers from copying exactly
 Encryption of the execution code requires a key to run
 Use of a dongle
 Registration system requiring the typing in of a registration code
 "Guards" are hardware or software modules that monitor the running program and ensure that it has not been tampered with in any way.
 Activation code which can be used only on a limited number of machines [2]
- 20 Six** from:
Laser printer
 High quality output
 Fast output
 Relatively quiet
 To print out invoices/letters etc.
 Relatively cheap to buy
Graph plotter
 High quality output
 Capable of very large printouts
 Print out car designs
Dot matrix printer
 Cheaper running costs
 Can work in industrial environment ...
 ...without losing performance
 To make instantaneous copies
 Can print continuously
 Requires multipart stationery
 Can print payslips
- Points which are repeated will only gain credit on the first mention [6]
- 21 Four** from:
 You get immediate feedback/You can ask questions immediately based on feedback
 You can be sure the person has received the message
 You know you have the right address/number
 Less impersonal/less risk of upsetting recipient/can detect emotions
 Can make yourself understood more easily
 You can see the other person's reaction [4]