

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

**MARK SCHEME for the May/June 2010 question paper
for the guidance of teachers**

**0417 INFORMATION AND COMMUNICATION
TECHNOLOGY**

0417/12 Paper 12 (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 May/June 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 – May/June 2010	0417	12

Ques. No.	Answer	Part mark															
1	A DVD RAM C Magnetic tape B Pen drive D Magnetic disc	1, 1 1, 1															
2	Blu ray disc Optical mark reader Graph plotter Projector Graphics tablet Web cam	1 1															
3	<table border="1"> <thead> <tr> <th></th><th>TRUE</th><th>FALSE</th></tr> </thead> <tbody> <tr> <td>Input devices are examples of hardware.</td><td>✓</td><td></td></tr> <tr> <td>Backing storage devices are examples of software.</td><td></td><td>✓</td></tr> <tr> <td>A Graphic User Interface is a part of an operating system.</td><td>✓</td><td></td></tr> <tr> <td>A laptop computer cannot be carried around.</td><td></td><td>✓</td></tr> </tbody> </table>		TRUE	FALSE	Input devices are examples of hardware.	✓		Backing storage devices are examples of software.		✓	A Graphic User Interface is a part of an operating system.	✓		A laptop computer cannot be carried around.		✓	1 1 1 1
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4	Remote Control → to input freehand drawings into a computer Keyboard → operating a television Touch screen → entering text when writing a book Chip reader → selecting options in a tourist information kiosk Graphics tablet → reading information from a credit card	1 1 1 1 1															
5 (a)	a hub is a device used to connect computers together to form a LAN	1															
(b)	an Intranet is a network with restricted access	1															
(c)	a Proxy server can allow networked computers to connect to the internet	1															
(d)	a WLAN is a wireless local area network	1															
6	Three from: Pen drives have greater storage capacity Pen drives are more portable Not all machines have CD drives Faster access to data More robust More secure as biometric data can be incorporated Don't need specialist hardware/software for pen drives	3															

Page 3	Mark Scheme: Teachers' version	Syllabus	Paper
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7	PENUP FORWARD 70 ----- PENDOWN FORWARD 60 ----- PENUP FORWARD 80 ----- RIGHT 90/PENDOWN PENDOWN/RIGHT 90 FORWARD 80 ----- RIGHT 90 FORWARD 100 1 mark for each 2/3 statements	5															
8	<table><tr><td>Web logs</td><td>✓</td></tr><tr><td>Databases</td><td></td></tr><tr><td>Models</td><td></td></tr><tr><td>Wikis</td><td>✓</td></tr><tr><td>DTP</td><td></td></tr><tr><td>Social networking sites</td><td>✓</td></tr></table>	Web logs	✓	Databases		Models		Wikis	✓	DTP		Social networking sites	✓	1 1 1			
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10 (a)	Three from: Humidity Moisture Temperature Light pH CO ₂	3												
(b)	Sensors feed back analogue data Computers can only work with digital/binary data/cannot read analogue	1 1												
(c)	<table><tr><td>Computer readings are more accurate.</td><td>✓</td></tr><tr><td>Students always forget to take readings</td><td></td></tr><tr><td>Students might be unavailable to take readings during school holidays.</td><td>✓</td></tr><tr><td>Computers can record data for later use.</td><td></td></tr><tr><td>Computers can analyse the results.</td><td></td></tr><tr><td>Computers can react to changes in the conditions immediately.</td><td>✓</td></tr></table>	Computer readings are more accurate.	✓	Students always forget to take readings		Students might be unavailable to take readings during school holidays.	✓	Computers can record data for later use.		Computers can analyse the results.		Computers can react to changes in the conditions immediately.	✓	1 1 1
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(d)	Two from: Earth/chemical particles will not affect its performance. It can operate without needing to refill the paper as regularly/can work on continuous paper. Running costs are low.	2												
(e)	Two from: It will be cheaper to buy. Print outs will be clearer. It is more compact.	2												
11 (a)	4	1												
(b)	5	1												
(c)	Relational database	1												
(d)	Two from: Data does not have to be typed in twice/referential integrity. Quicker to enter new data. So fewer errors are likely. So less memory/storage capacity is used. So it is easier to edit data.	2												
(e)	Code	1												
(f)	Book Borrowed	1												
(g)	Cost	1												
(h)	Date	1												
(i)	Range check	1												
(j)	Format/picture/input mask	1												

Page 5	Mark Scheme: Teachers' version	Syllabus	Paper
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12	A router – so that data can be transferred from one network to another A browser – to access the (world wide) web /view web pages/surf the net Email – so that he can send messages to people <u>outside the</u> network/home An ISP – in order that he can access the internet/email/to provide internet service	1 1 1 1																
13 (a)	<table><tr><td>Data encryption techniques are easy to crack.</td><td></td></tr><tr><td>Data can be accessed without being in the building where it is stored.</td><td>✓</td></tr><tr><td>Data thieves do not leave physical signs of robbery.</td><td>✓</td></tr><tr><td>Data passwords are easy to guess.</td><td></td></tr></table>	Data encryption techniques are easy to crack.		Data can be accessed without being in the building where it is stored.	✓	Data thieves do not leave physical signs of robbery.	✓	Data passwords are easy to guess.		1 1								
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15	Direct changeover – One from: It is the quickest method of implementation/the benefits are available immediately Do not have the expense of running two systems Parallel running There is always the old system to fall back on in the event of the new system failing Phased implementation – One from: Still have rest of old system if new system fails Training can be gradual Enables refinement of each phase of the system before fully implementing	3																								
16	Two strategies and two reasons from: Strategy – compare the solution with the original task requirements/design brief Reason – to ensure that requirements have been met Strategy – identify any limitations/necessary improvements to the system Reason – so that system works without problems Strategy – Collect data from the users of the new system Reason – to see how well they are coping with the new system/ to see how well the new system works Strategy – analyse (evaluate) the users' responses to the results of testing/using the system Reason – so that users needs are taken into account	4 (2 + 2)																								
17	Three from: Web cam/video camera to input/capture video (images of participants/documents) router/modem to transmit data to participants' (computers) Microphone to input voices of participants/to speak to other participants Headphones/speakers to output voices to participants/hear other participants Large screen/projector to see other participants	3																								
18	<table border="1"> <tr> <td>The number in stock of the matching record is read</td><td>4</td><td>1</td></tr> <tr> <td>Until a match is found with the entered bar code</td><td>3</td><td>1</td></tr> <tr> <td>The bar code field in the data file is read record by record</td><td>2</td><td>1</td></tr> <tr> <td>The bar code on the product is read by the bar code reader</td><td>1</td><td></td></tr> <tr> <td>The new value of number in stock is written back to the file</td><td>8</td><td>1</td></tr> <tr> <td>If it is equal to the re-order number then more goods are automatically re-ordered</td><td>7</td><td>1</td></tr> <tr> <td>One is subtracted from the number in stock</td><td>5</td><td>1</td></tr> <tr> <td>The number in stock is compared with the re-order number</td><td>6</td><td>1</td></tr> </table>	The number in stock of the matching record is read	4	1	Until a match is found with the entered bar code	3	1	The bar code field in the data file is read record by record	2	1	The bar code on the product is read by the bar code reader	1		The new value of number in stock is written back to the file	8	1	If it is equal to the re-order number then more goods are automatically re-ordered	7	1	One is subtracted from the number in stock	5	1	The number in stock is compared with the re-order number	6	1	
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