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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.

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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 — Graph plotter — Graphics tablet Optical mark reader — Projector — Web cam	1 1
3		
	Input devices are examples of hardware. — TRUE ✓	1
	Backing storage devices are examples of software. — FALSE ✓	1
	A Graphic User Interface is a part of an operating system. — TRUE ✓	1
	A laptop computer cannot be carried around. — FALSE ✓	1
4	Remote Control → operating a television	1
	Keyboard → entering text when writing a book	1
	Touch screen → selecting options in a tourist information kiosk	1
	Chip reader → reading information from a credit card	1
	Graphics tablet → to input freehand drawings into a computer	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

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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		

Web logs	✓	**1**
Databases		
Models		
Wikis	✓	**1**
DTP		
Social networking sites	✓	**1**

9

	TRUE	FALSE	
Withdrawing money from an ATM		✓	**1**
Producing utility bills	✓		**1**
Booking a plane ticket		✓	**1**
Producing payslips	✓		**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)		

Computer readings are more accurate.	✓	**1**
Students always forget to take readings		
Students might be unavailable to take readings during school holidays.	✓	**1**
Computers can record data for later use.		
Computers can analyse the results.		
Computers can react to changes in the conditions immediately.	✓	**1**

(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**

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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)		

Data encryption techniques are easy to crack.		
Data can be accessed without being in the building where it is stored.	✓	1
Data thieves do not leave physical signs of robbery.	✓	1
Data passwords are easy to guess.		

(b)		

Make backups of the data.		
Users should write down their password in case they forget it.		
Have a firewall connected to the network.	✓	1
Have different levels of access to the data.	✓	1

14 (a)		

	True (✓)	False (✓)	
Examining documents has to be done in the presence of all the workers.		✓	1
Appointments have to made with a worker in order to complete a questionnaire.		✓	1
It is possible to change questions in the course of an interview.	✓		1
Observing the current system can provide a detailed view of the workings of the system.	✓		1

(b)		

Inputs to the current system		
User and information requirements		
Data capture forms	✓	1
Validation routines	✓	1
Problems with the current system		
File structure	✓	1
Report layouts	✓	1
Limitations of the system		

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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		

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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19	**Three** from: If the airplane crashed you wouldn't need to replace it – saving money If the airplane crashed nobody is injured It is easy to recreate extreme weather conditions It is easy to create unusual flying conditions Can recreate mechanical/computer failure from previous real situations Cheaper fuel costs	**3**
20	**Phishing** **One** from: is using e-mails pretending to be the target's bank Fake email to get personal details **Pharming** **One** from: is installing malicious code on a pc or server to redirect to fake websites redirecting users to websites which look authentic to get personal details **Spam** (is the sending/receiving of) unsolicited/junk emails	**1** **1** **1**
21 (a)	**Two** from: Unlikely to be lost (if addressed correctly) Faster to arrive Quicker/easier to send the same message to several people You don't have to leave the office to send a letter	**2**
(b)	**Two** from: Very large documents can be sent/emails often have a limit to the size of attachments Legal documents can be sent/email signatures are not legally binding Special delivery ensures delivery/If undelivered can be tracked/if lost can claim compensation Might not have the software to open attachments Recipient may not have/doesn't need email address/access to computers/internet	**2**

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