MARK SCHEME for the May/June 2015 series

0417 INFORMATION AND COMMUNICATION TECHNOLOGY

0417/11

Paper 1 (Written), maximum raw mark 100

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Page	2	Mark Scheme		Paper
		Cambridge IGCSE – May/June 2015	0417	11
1 (a)	Sensor Touchpad			[1] [1]
(b)	Printer Screen			[1] [1]
(c)	Pen drive DVD drive			[1] [1]

Use	MICR ✓	Trackerball ✓	Sensor ✓
Reading data from a cheque	~		
Inputting the temperature of a greenhouse			✓
People with limited motor skills using computers		~	
For inputting the amount of humidity in a weather station			✓

3	
Application	Device
Produces very high quality printing where speed is not an is	ssue Inkjet printer
Production of continuous stationery where noise is not an is	ssue Dot matrix printer
Produces rapid, high quality and high volume printing	Laser printer
Produces very large printouts such as size A0	Graph plotter

	Blog ✓	Microblog ✓	Wiki ✓
Very restricted on size of post		~	
Allows readers to edit posts			✓
Entries are not usually in chronological order			✓
Very difficult to customise		~	

Page 3	Mark Scheme	Syllabus	Paper
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(a) T	he type of processing used for processing cheques is called batch		[1]
(b) T	he type of access used on a magnetic disc is called direct		[1]
(c) A	In item of hardware which is used to open a window is called a motor		[1]
	(a) ⊺ (b) ⊺	Cambridge IGCSE – May/June 2015	Cambridge IGCSE – May/June 2015 (a) The type of processing used for processing cheques is called batch (b) The type of access used on a magnetic disc is called direct

PENDOWN	PENDOWN		PENDOWN	PENDOWN
LEFT 90	REPEAT 2		LEFT 90	FORWARD 30
FORWARD 20	FORWARD 30		FORWARD 20	RIGHT 90
RIGHT 90	RIGHT 90	OR	RIGHT 90	FORWARD 30
PENUP	END REPEAT		PENUP	RIGHT 90
FORWARD 10	FORWARD 30		FORWARD 10	FORWARD 30

1 mark for each correct instruction

7 (a)

Pressure sensor	~	[1]
Oxygen level sensor		
Wind speed sensor		
Sound sensor	~	[1]
Body sensor		
Moisture sensor		
Infra-red sensor	~	[1]
Touch sensor		

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(b) Five from:

Microprocessor checks input from the user is authentic Microprocessor continually monitors sensors.

If infra-red sensor reading changes If pressure greater than pre-set value... If sound greater than pre-set value... Microprocessor sends signal to sound alarm Microprocessor sends signal to flashing light/house lights. Microprocessor automatically sends message/calls/texts owner

8 (a)

Activity	Analysis ✓	Design ✓	Evaluation ✓	
Interviewing the users of the new system			~	[1]
Interviewing the users of the existing system	~			[1]
Planning the validation routines		~		[1]
Examining existing documents	✓			[1]

(b) Three names and descriptions from:

Parallel running Current system and new system run alongside each other

Pilot running New system introduced in one branch and other branches continue with old system

Direct changeover New system replaces old system <u>immediately/overnight</u>

Phased implementation New system is introduced one module/step at a time

[6]

[5]

Page	5	Mark Scheme	Syllabus	Paper
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(c)	Pro Na Flo Lis Pui Pui Np Ou Ha Sol Sal	ree from: ogram listing me of program language wchart/algorithm t of variables e structure rpose of the system/program rpose of the program ut format or example tput format or example rdware requirements ftware requirements mple runs/test runs own bugs		
		lidation routines nitations of the system		[3]
(d)	Ho Ho Ho Ho Ho Trc Err	ree from: w to load software/ run software/install software w to save a file w to search w to sort w to print w to add records w to delete/edit records publeshooting guide/contact details/help line/FAQs or messages/handling torials		[3]
9 (a)	Vis Vis	o from: ual verification ually comparing the data on screen… vith the source document		

two from:

Double data entry Data is typed in twice by one typist Data is typed in by two operators Computer compares versions

[2]

Page 6		Syllabus	Paper
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(b)	Type in =d3/c3 *100		[1] [1]
	OR		OR
	Type in =d3/c3 in e3 Set the format to %		[1] [1]
(c)	Three from:		
	Click on E3 Manoeuvre to bottom right hand corner of cell Until black cross appears Black cross dragged down to E22		
	Or three from:		
	Right click on E3 Select copy from menu Select E4 to E22 Right click and click on paste		[3]
(d)	Two from:		
	Less dangerous to use a model Real thing may represent too large a time scale/ it may take a long time the real thing - genetics etc. Too large a time scale required Real thing may be wasteful of materials Real thing may be on too vast a scale Easier to change data/variables The real thing may be impossible to access/create You can test predictions more easily/model can make predictions more You can ask many whatif questions which would be impractical in real I	accurately	esults from [2]

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[4]

10

10			
	Redundancy payments to former workers are expensive	✓	[1]
	The cars produced are not of a consistent standard		
	Robots are unable to think for themselves	~	[1]
	Robots do not go on strike		
	Robots are expensive to buy	~	[1]
	Mistakes are never made.		
	Maintaining robots costs money	~	[1]
	Car workers have to be paid more		
11	 (a) Two from: Electronic junk mail/sending of unsolicited emails Sent to everybody on a mailing list/many emails sent at Can slow down networks Can fill up the receiver's mail box and therefore hard dis 		[2]

(b) Four from:

Phishing
Fraudster sends an e-mail which appear to be authentic
is sent by a fraudster posing as a bank/organisation
provides a link to a bogus website

Pharming

installing malicious code on a pc or server user is redirected to bogus website user accesses websites which look authentic website belongs to the fraudster/hacker

12 (a) three from:

Network cards	
Modem/Router	
Hub/switch	
Cables	
Telephone line	[3]
•	

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(b) Three from:

Using social networks Booking tickets Playing educational games Watching videos/music Send/receive emails Create a blog/description of blogging Researching current affairs/school work Looking at the news Reading ebooks/books online

(c) Two from:

Copy onto removable storage medium At regular intervals Store the medium away from the computer Make incremental backups

(d) Two from:

User id can sometimes be easily guessed Passwords can be hacked with key logging software Passwords can be hacked by using random password generators

Four from:

Question is asked such as mother's maiden name/customer's birthplace/date of birth Question selected can be difficult to answer by hacker.

Answers can be intercepted by hacker

Using a chip and pin reader with bank card to generate a one off transaction code which user enters into online banking

Bank issues a one off transaction code to the user's phone which user enters into online banking

Even if hacker intercepts code is no use to him/her as can only be used once

Inconvenient as have to keep reader and card with you if you want to bank remotely

Using fingerprint scanner to capture digital image of fingerprint

Each fingerprint is virtually unique/ Each retina is unique/ Each iris is virtually unique Fingerprint scanners can be inaccurate

Fingerprints can alter when people do sustained heavy manual work

Civil liberty issues

Using a retina scanner to detect retina pattern

Cataracts/astigmatism can affect accuracy of reading

Equipment cost is high

Using a digital camera to record image of the iris

High quality images of an iris can be used to 'fool' the system

Biometrics are nearly impossible to forge

[3]

[2]

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13 (a)

Field name	Data type	
Film_title	Text/alphanumeric	[1]
Format/blu-ray/DVD	Boolean	[1], [1]
Rental_Cost	Currency	[1], [1]
Name_of_director	Text/alphanumeric	[1]

(b) Four from:

set up a query rental cost < 3 select appropriate fields to include in report create an appropriate report title set up a header set up a header use appropriate alignment within fields Select appropriate font/font size for heading Select appropriate font/font size for field names Select appropriate font/font size for field contents

14 Six from:

Borrower: Advantages: Saves cost of travelling to the library Saves time of travelling to library More likely to be able to borrow a particular book/library has more copies Will not be fined for going over borrowing period Disadvantages: Might not have finished reading book when it disappears Have the expense of buying the correct hardware

Library: Advantages: Saves cost of salaries as some staff have been made redundant Librarians will have more time to spend on other duties Don't have to worry about books not being returned Disadvantages: Will lose income from not collecting fines

[6]

[4]