MARK SCHEME for the October/November 2012 series

0417 INFORMATION AND COMMUNICATION TECHNOLOGY

0417/12   Paper 1 (Written), maximum raw mark 100

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Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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Cambridge is publishing the mark schemes for the October/November 2012 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

1 A dot matrix printer B trackerball
C multimedia projector D inkjet printer [4]

2 light pen ⬭ magnetic disc ⬭ motor [1]

mouse OCR ⬭ ROM ⬭ [1]

3

	TRUE	FALSE	
A chip reader is an example of software		✓	[1]
A hard disc drive is an example of hardware	✓		[1]
DTP is a form of operating system		✓	[1]
A blu-ray disc has a greater storage capacity than a DVD	✓		[1]
Flash memory cards are used in digital cameras	✓		[1]

4 Mouse → to input voiceovers for a presentation [1]

Joystick → to input a PIN [1]

Optical Mark reader → to select options from a menu [1]

Microphone → to operate a flight simulator [1]

Number pad → to input candidate responses on examination papers [1]

5

	TRUE	FALSE	
ROM is volatile		✓	[1]
ROM is used to store the startup instructions of a computer	✓		[1]
The data in ROM is easier to change than that in RAM		✓	[1]
ROM is used to store the data the user is currently working on		✓	[1]

6 **Three** from:

Projector/large screen
Webcam/video camera
Speakers/headphones
Microphone
Router/modem [3]

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7

PEN DOWN		END REPEAT	
LEFT	90	PENUP	
REPEAT	2	FORWARD	90
FORWARD	50	PENDOWN	
RIGHT	90	FORWARD	70

1 mark for each correct statement [8]

8 (a) Three from:

Descriptions of:

Temperature
Pressure
Sunlight
Humidity
Rainfall [3]

(b) Three from:

Descriptions of:

Uses text and numbers
Performs automatic recalculation
Performs whatifs
Replicates formulae
Formulae/functions
Can have absolute and relative cell references/named cells or ranges
Graphs/charts [3]

(c) Three descriptions from:

Simulations
Mathematical models
Scientific models
Civil engineering models
Financial models
Flight/pilot simulation/training
Large scale chemical experiments
Design of fairground rides
Traffic control
Building fire simulation [3]

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(d) Two from:

Some situations are/real thing might be dangerous/model is less dangerous
<u>Cost of building</u> real thing may be expensive
Real thing may waste raw materials/natural resources
Easier to change data/variables
Costs less to change data/variables
The real thing may be impossible to access/create
Real thing may be on too vast a scale
Extremes which can't be tested in real life can be tested using models [2]

9 (a) Hub/switch/bridge [1]

(b) Email software/IM software [1]

(c) LAN/intranet [1]

(d) Three from:

They may waste time playing games/going on social network sites/updating their blog/ online shopping/banking/surfing
They could access undesirable sites
They could download viruses/malware
Could make the company susceptible to hackers [3]

10 (a) Three from:

Fewer staff needed – less spent on wages
Fewer shops needed – less spent on rates/rent/utilities
Less actual cash handled – fewer robberies
Less money spent on security staff
Potentially larger customer base [3]

(b) Three from:

Initial cost of hardware/software is expensive
Need to retrain staff
Less customer loyalty/loss of customers/more difficult to sell other services/product due to lack of personal touch
Costs of system maintenance
Greater costs due to more delivery staff [3]

11 **Three** matched pairs from:

Sound
Spoken introduction by head/voiceover the presentation/background music/school choir/band/orchestra/sound effects when changing/opening a slide

Animation
Text effects/cartoon representing school activities

Video
Introduction by head/school play/choir/band/orchestra/sports activities

Hyperlinks
Move to another slide

Slide transitions
To keep the viewer's attention [6]

12 Visually <u>comparing</u> typed in data with original source [1]
Computer <u>compares</u> two versions of the typed in data [1]

Two from:

Data may be entered/copied inaccurately
Check needs to be carried out to ensure accurate data entry
Validation may not pick up that although the data is acceptable it may still be incorrect [2]

13 **(a)**

Optical character reader	
Electronic scales	✓ [1]
Sound sensor	
Bar code reader	✓ [1]
Number pad	✓ [1]
Trackerball	

(b) **Two** from:

Computer calculates check digit from numbers in bar code number
Compares calculated check digit with that recorded in bar code number
If same, proceeds with transaction, otherwise sounds warning signal/issues error message [2]

(c) Five **from:**

Every time a product is bought, number in stock reduces by 1
Number in stock of Kollege Corn Flakes falls to 150
Compare number in stock with Re-order level
Is equal so needs re-ordering
Kollege Corn Flakes now needs re-ordering
Read off re-order quantity (which is 50)
Read off supplier code L93512
Use suppliers' database
Lookup supplier code (L93512)
Read off supplier's name, address - Lu Chen, Kinshasa Highway, Box 41324
Print off re-order request
Print off address label   [5]

14 **Three** from:

Fraudster sends an e-mail
which appear to be authentic
Is sent by a fraudster posing as a bank/organisation
in order to get the target's bank details/personal details   [3]

15 (a)

Field name	Validation rule	
		[1]
First_name	none	[1]
Family name	none	[1]
class	Format/picture/length	[1]
Number of IGCSEs	Range	[1], [1]
Gender	Boolean	[1], [1]

(b) **Three** from:

Normal data – data within a given range/appropriate for that data type
Abnormal data – data outside the range/of the wrong data type
Extreme data – data on the boundaries of the range
Live data – data that has been used in the previous/existing system   [3]

(c)

Interview users about the current system	
Design the new system	
Compare the solution with the original task requirements	✓
Decide on the method of implementation	
Identify any limitations of the system	✓
Identify any necessary improvements to the system	✓

[3]

16 **Six** from:

Internet is not policed so information is not necessarily reliable
Anybody can have a website so information is not necessarily reliable
Anybody can publish their understanding of a topic so information is not necessarily reliable
If site has excessive advertising it could be unreliable
If the advertising is related only to its own products it could be unreliable
The final part of a URL can help to identify reliability…
… .ac, .gov, .org are usually fairly reliable
Can compare information from sites to see if it is reliable
If site is endorsed by reliable/reputable people/organisations it can be accepted as being reliable
If it has links to other reliable sites it is usually reliable
If it has testimonials it is likely to be reliable
If the author's credentials are good it is likely to be reliable
If information is comparable to information from reliable/authenticated/text books it is likely to be reliable
If the date of the last update was a long time ago it is likely to be unreliable   [6]

17 **Four** from:

Easy to keep in immediate contact with friends/make new friends
Easy to communicate to more than one friend/to communicate with people overseas
Can search for people who you've fallen out of touch with
Easy to arrange meetings/visits to cinemas/theatre
Can share photographs/videos/images/opinions/views   [4]