

**MARK SCHEME for the October/November 2012 series**

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

Cambridge will not enter into discussions about these mark schemes.

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

Cost of building 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]

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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 comparing typed in data with original source [1]

Computer compares 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]

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(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	
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]

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(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]