

MARK SCHEME for the May/June 2014 series

**0417 INFORMATION AND COMMUNICATION
TECHNOLOGY**

0417/13

Paper 1 (Writing), 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 May/June 2014 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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- 1 A Speakers [1]
 B Web cam [1]
 C Joystick [1]
 D Memory stick [1]

- 2 **Two** from:
 Windows
 Icons
 Menus
 Pointer/Pointing device [2]

3

Software	Task	
Word processing/DTP	Typing a letter	[1]
Spreadsheet	Calculating profit and loss	[1]
Web browser	Viewing pages on the internet	[1]
Presentation	Creating a slide show	[1]

4

	Evaluation	Analysis	
Identifying user and information requirements		✓	[1]
Comparing the new system with the original task requirements	✓		[1]
Carry out research on the current system		✓	[1]
Identifying any limitations of the new system	✓		[1]

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Chip reader	✓	[1]
Web cam		
Printer		
Buzzer		
Keypad	✓	[1]
Bar code reader	✓	[1]
TFT screen		

6

PENDOWN		PENUP	
LEFT	90	BACKWARD	120
REPEAT	5	PENDOWN	
FORWARD	50	REPEAT	4
RIGHT	72	FORWARD	60
ENDREPEAT		RIGHT	90
		END REPEAT	

1 mark each correct instruction [5]

- 7 (a) Normal data – data within a (given) range/appropriate for that data type [1]
Example – any wage between \$200 and \$800 [1]
Abnormal data – data outside the range/of the wrong data type [1]
Example – any wage less than \$200 or greater than \$800 or text such as “two hundred” [1]
Extreme data – data on the boundaries of the range [1]
Example – \$200 or \$800 [1]

(b) Four from:

- Technical documentation has to be produced for systems analysts/programmers
- Technical documentation to know how to improve/update the system
- Technical documentation to know how to repair system
- Technical documentation to know how to maintain the system
- User documentation so that the user can understand the system
- User documentation so that the user can learn/knows how to operate/use/access the system
- User documentation so that the user can overcome problems/errors

Must gain at least one mark for each of user and technical to gain full marks [4]

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- 8 Four** from:
ROM cannot be changed/RAM can be changed
RAM can be read from and written to
ROM is read only memory and RAM is random access memory
ROM is non-volatile/RAM is volatile
RAM holds the work that is being currently done by the user
ROM holds instructions that need to be unchanged such as BIOS/program cycles in a washing machine/program instructions in games [4]
- 9 Two** from:
Buying tickets
Online shopping
Online banking
Any control application
Automatic stock control
(EFT) POS system [2]
- 10 (i)** A chip reader [1]
(ii) A bar code reader [1]
(iii) MICR [1]
(iv) A robot [1]
- 11 (a)** Fixed hard/magnetic disc [1]
(b) The World of the Brontës [1]
(c) Paperback or Hardback [1]
(d) Alphanumeric/Text [1]
(e) Each item of data in the field is unique [1]
(f) Jane O'Neill [1]
(g) Check digit [1]

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(h) Two from:
 (Invalid) character check/type check to check only digits have been entered
 Length check to ensure only 6 characters are entered
 Presence check to ensure a borrower number is entered [2]

(i) Three advantages from:
 Phone call can last a long time
 Can send same email to lots of people at same time
 Can send advertising literature as an attachment
 Borrower may be not available to answer phone
 Phone line may be busy [3]

One disadvantage from:
 Cannot be sure borrower has received the message
 Can be using a computer when other librarians want to use it for other purposes [1]

(j) Six from:
 Bar code reader/Magnetic stripe reader is quicker to enter data than keyboard
 Bar code reader/Magnetic stripe reader is more accurate when entering data than keyboard
 If bar code/is missing/damaged, it is difficult to enter data
 Easier to damage a bar code than a magnetic stripe/chip
 Chip reader can input more information than magnetic stripe or bar code
 Chip/stripe/bar code readers have to be bought/keyboard comes with the computer
 Continuous use of mouse/keyboard can cause RSI
 One mark is available for a reasoned conclusion [6]

(k) User id identifies user to the system [1]
 Password prevents unauthorised user from accessing data/must match the one that the system stores for that user name [1]

12 (a) Can transfer money out of account/Can create bogus account/Can transfer money into bogus account [1]

(b) Three from:
 Fewer bank employees, so less paid out in wages
 Fewer banks needed – less spent on rates/rent
 Less actual cash handled – fewer robberies
 Less money spent on security staff
 More customers attracted by lower interest rates on loans/higher interest rates on saving accounts [3]

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- 13 Four** from:
 May make friends with inappropriate people
 Cannot be sure the person you are communicating with is the same as the images you have seen.
 Can become preoccupied with sites and not do other tasks/perform poorly academically
 Can swap coursework/homework inappropriately
 Lose person to person social skills/spend less time with family/friends
 Prone to cyber bullying
Continual use results in lack of exercise, causing health problems [4]
- 14 (i)** OMR [1]
(ii) An icon [1]
(iii) A keyboard [1]
- 15 (a)** Sound – there might be other noises – e.g. roadworks, masking the sound of a car [1]
 Light – Anybody could break the beam not just cars/direct sunlight may affect readings [1]
- (b)** Measurement is the monitoring of physical variables without the microprocessor taking action [1]
 Control is when the microprocessor takes action depending on sensor readings [1]
- 16 (a)** Microphone to input voices of participants/speak to other participants [1]
 Speakers to output voices to participants/hear other participants [1]
 Web cam to **input/capture** video/images of participants/documents [1]
- (b) Four** from:
 Workers can use own office so documents do not get lost in transit
 Bulky documents/equipment do not have to be carried around
 Sensitive documents less likely to be lost/stolen
 Company can call meeting at short notice
 Might be dangerous to fly/travel [4]
- 17 (a) Five** from:
 System/User interface asks questions...
 ...based on previous responses
 Inference engine compares data
 Compares data with that held in the knowledge base...
 ...using rules base
 Matches to the symptoms are found [5]

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- (b) **Two** from:
- Mineral prospecting
 - Tax
 - Careers
 - Chess games
 - Animal/plant classification/identification
 - Computer fault diagnosis

[2]

- 18 Four** from:
- Save pictures from clipart/Internet/scanned images/digital camera
 - Load word processing software
 - Insert images
 - Edit images
 - Insert spreadsheet
 - Position chart/images/spreadsheet
 - Create chart
 - Type in text
 - Edit/format text
 - Save chart
 - Insert chart/ copy and paste chart
 - Edit chart

[4]

- 19 Four** from:
- Phishing involves fraudster sending an e-mail...
 - ...whereas pharming involves fraudster/hacker installing malicious code on a pc or server
 - Both involve trying to obtain personal details

Phishing

- Email appears to be authentic
- Is sent by a fraudster posing as a bank/organisation

Pharming

- User is redirected to bogus website
- User accesses websites which look authentic
- But belong to the fraudster/hacker

[4]