

CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

MARK SCHEME for the May/June 2014 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 May/June 2014 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

Page 2	Mark Scheme	Syllabus	Paper
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- 1 **A** Laptop computer [1]
 B Laser printer [1]
 C Bar code reader [1]
 D Graphics tablet [1]

- 2 **Two** from:
 Touch screen
 Microphone
 Buttons
 Keypad [2]

- 3
- | | True | False |
|---|------|-------|
| Viruses can be transmitted by opening e-mail attachments. | ✓ | |
| MICR is used to read data from bar codes | | ✓ |
| Hard discs can store more data than Blu-ray discs | ✓ | |
| Regular use of computers can cause headaches | ✓ | |
- [4]

- 4 **Two** from:
 Send an email
 Send an SMS/text message
 Use instant messaging
 Send a fax
 Leave a message on voicemail
 Make a phone call
 Use VOIP
 Send an alert on the company intranet/website
 Social networking
 Video conference [2]

- 5 **Three** from:
 Sensors take more accurate readings
 Possibly less danger to students
 Students could lose concentration and forget taking some readings
 More readings can be taken in a short period of time
 Results can be automatically/more quickly produced
 Graphs are automatically produced [3]

- | | True | False |
|---|------|-------|
| Robots never take breaks. | ✓ | |
| More workers are employed. | | |
| Faster cars are produced. | | |
| Standard of the product is more consistent. | ✓ | |
| Robots never break down. | | |
| Robots don't need paying. | ✓ | |
| No humans are needed. | | |
| Greater productivity. | ✓ | |

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- 10 (i) Webcam
- (ii) Microphone
- (iii) Speaker
- (iv) Router [4]
- 11 (a) Appropriate spacing for each field [1]
 Forward/backward buttons/save(submit) – must have at least two navigation aids [1]
 Information fills the page AND is clearly a screen form [1]
- Title [1]
 Author's name [1]
- Four** from:
 Reference number/ISBN/Publisher/Picture of cover/Dewey number/Genre or
 Category/fiction or non-fiction/target age group/picture of author/date [2]
- Three** from:
 Published/revision date/summary of contents/no. of copies/cost price/selling price
 Number of pages/hardback or softback [1]
- Maximum of five marks**
- (b) Fixed hard/magnetic disc [1]
- Two** from:
 Fast data access
 Stores a lot of data
 Cannot be misplaced [2]
- (c) **Three** from:
 Firewalls to only allow authorised computers to use the system
 User name/id and password will prevent users who do not know the password from accessing the system
 Biometric methods – fingerprints/retina scans are unique
 Description of twin factor system [3]
- (d) **Three** from:
 Parallel running is running the old and new system together
 Direct changeover is stopping the old system and starting the new one immediately
 Phased implementation – new system is implemented part by part
 Pilot running – system is implemented in one branch/office (at a time) [3]

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(e) (i) Two from:

How to load software/ run software/install software
 How to save a file
 How to search
 How to sort
 How to print
 How to add records
 How to delete/edit records
 Purpose of the system
 Input format or example
 Output format or example
 Hardware requirements
 Software requirements
 Sample runs/test runs
 Limitations of the system
 Troubleshooting guide/contact details/help line/faqs
 Error messages/handling
 Tutorials

[2]

(ii) Two from:

Program coding/listing
 Name of program language
 System flowchart
 Program flowchart/algorithm
 List of variables
 File structure
 Purpose of the program
 Purpose of the system (only if not mentioned in user documentation)
 Input format or example (only if not mentioned in user documentation)
 Output format or example (only if not mentioned in user documentation)
 Hardware requirements (only if not mentioned in user documentation)
 Software requirements (only if not mentioned in user documentation)
 Sample runs/test runs (only if not mentioned in user documentation)
 Limitations of the system (only if not mentioned in user documentation)
 Known bugs
 Validation routines

[2]

12 (a) Chip/magnetic stripe/bar code reader

[1]

(b) Advantages – Two from:

Unique so students can't check each other in
 Students could forget cards
 Students could lose cards
 Sets of cards may be expensive to buy

Disadvantages – Two from:

Students will feel personal liberty infringed/parents might object to children's fingerprints being taken
 Method can be slower than cards
 Equipment/set up is more expensive
 Time taken to gather all the fingerprints would be very long

[4]

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13 Five from:*Advantages:*

Don't have to spend money on travelling to shops
 Goods may be cheaper as shops have less staff to pay/less premises to rent
 Don't have to pay car parking charges
 Don't have to pay for shopping bags
 Vouchers/special deals are often only available online
 Comparison websites will find you the cheapest option/can compare prices more easily

Disadvantages:

May have to pay delivery charges
 Postal costs of returning items
 Initial cost of equipment/phone line
 ISP costs/Possible high connection charges

Must have at least one advantage and disadvantage to gain full marks.

One mark is available for a reasoned conclusion

[5]

14 Four from:

Microprocessor controlled devices do much of housework
 Do not need to do many things manually
 Do not need to be in the house when food is cooking
 Do not need to be in the house when clothes are being washed
 Can leave their home to go shopping/work at any time of the day
 Greater social interaction/more family time
 More time to go out/more leisure time/more time to do other things/work
 Are able to do other leisure activities when convenient to them
 Can lead to unhealthy eating due to dependency on ready meals
 Can lead to laziness/lack of fitness
 Can encourage a healthy lifestyle because of smart fridges analyzing food constituents
 Microprocessor controlled burglar alarm provides a sense of security
 Do not have to leave home to get fit
 Manual household skills are lost

[4]

15 (a) Up to two from:

Save photos to memory card
 Insert memory card to computer
 Copy photos to a new folder/desktop/hard disc
 Connect camera lead to computer
 Import/upload photos

Up to two from:

Load word processing package/open document
 Insert image from folder/copy and paste/drag and drop
 Edit/position the image

If camera is phone-based/web-enabled allow email/SMS for 1 mark

Maximum of three marks

[3]

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(b) **Two** from:

- Internet
- Create own using a painting/drawing package
- CD of images
- Clipart library

[2]

(c) **Four** from:

- Laser is cheaper to buy than a dot matrix
- Laser is faster at printing than other two for this task
- Laser has a better quality printout than dot matrix
- Laser has a larger paper tray than inkjet
- Laser doesn't need to change cartridges as often as an inkjet

[4]

16 Three from:

- Highlight A4 to C6/highlight A4 to A6 and C4 to C6
- Select insert chart
- Select type of chart
- Label axes
- Select legend/no legend
- Create a heading/title

[3]

17 Five from:

- Microprocessor is programmed with pre-set values
- Microprocessor starts cycle at specified time
- Microprocessor reads data from sensors
- Checks contact switch on door is closed
- If it isn't microprocessor will not start the cycle/if it is microprocessor starts cycle
- Microprocessor compares sensor readings with pre-set value
- If temperature is above pre-set value, microprocessor switches off heater
- If temperature is below pre-set value, microprocessor switches on heater
- If pressure is greater than preset value, microprocessor sounds alarm
- Microprocessor checks pressure reading and calculates the amount of water to use
- At start of cycle, microprocessor opens valve to let in water
- If water level reached, microprocessor switches off valve
- Microprocessor ends cycle at specified time

[5]

18 (a) Three from:

- Is credit card number valid/exists
- Does name entered match that on system
- Is expiry/start date valid/matches date stored on system
- Does security code/CVV entered match that stored on system
- Is there available credit/funds
- Checks for unusual spending patterns
- Is card blocked/reported stolen/lost

[3]

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(b) Four from:

- Looks up required date of performance
- Checks that seats are available
- Flags seats as being booked
- Stores name of customer with seats booked
- Sends email confirmation/text
- Prints tickets ready to post or to be collected/sends electronic version of ticket
- Deducts number of seats booked from number of seats available/reduces number of seats available (by one)

[4]

19 Six from:

- Mobile phones/laptops are portable, PCs are not
- Keyboard on mobile phone is smaller/difficult to type
- Mobile phone display is smaller than laptop or PC
- Mobile phone may not be able to access certain sites
- Signal is likely to be more reliable with PC/laptops as they can be cabled
- Slower to access the internet with mobile phone
- May not always be able to access the internet using a mobile phone or laptop
- More likely to have a mobile phone with you
- Can access the internet from greater number of places with a mobile phone
- Easier to use a mobile phone while on the move
- Some sites do not have full facilities for mobile phones

[6]