

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2014 series

0417 INFORMATION AND COMMUNICATION TECHNOLOGY

0417/11

Paper 1 (Written), maximum raw mark 100

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- 1 A optical disc drive B USB ports
C memory card slot D on/off button [4]

- 2 **Two** from:
Bridge
Hub
Switch
Router
Proxy server
Network card [2]

3

Look away from the screen from time to time	✓	[1]
Use a keyboard instead of a mouse		
Position your chair so that you are looking straight at the screen.	✓	[1]
Work without a break.		
Keep the screen as bright as you can		
Grip the mouse tightly		

4

	Hardware	Software	
Spreadsheet		✓	[1]
Digital camera	✓		[1]
Bar code reader	✓		[1]
Web page authoring program		✓	[1]

- 5 **Two** from:
Control
Measuring
Spreadsheet [2]

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6	RIGHT	90	
	PENDOWN		[1]
		
	REPEAT	8	[1]
		
	FORWARD	50	[1]
		
	LEFT	45	[1]
		
	END REPEAT		[1]
		

PENDOWN and REPEAT 8 are interchangeable.

- 7 (a) Four from:
- (i) 4 [1]
 - (ii) Engine size [1]
 - (iii) Make [1]
 - (iv) Maximum speed [1]
- (b) Engine size Make
- Maximum speed Registration number [1]
- (c) It is the only unique field [1]
- (d) Two from:
- Parallel running
 - Direct changeover
 - Phased implementation
 - Pilot running [2]
- 8 (a) Two from:
- Temperature sensor
 - Light sensor
 - pH sensor
 - O₂ sensor
 - CO₂ sensor [2]
- (b) Two from:
- There are no output control devices
 - The computer is not acting as a result of the input
 - The output has no effect on the input [2]

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- (c) Spreadsheet/database [1]
- (d) DTP/Word processing/Presentation/web authoring software/database [1]
- (e) **Four** from:
 Sensors are placed in the river
 The sensors feedback/sends data to computer
 Data is converted from Analogue to Digital/sent through an ADC
 Graphs are automatically produced by computer...
 Graphs/charts are plotted against time [4]
- 9 **Two** from:
 Do not download software/music/games from unknown/untrusted sources/(only) download files from reputable sources
 Do not open email (attachments) from unknown/untrusted sources
 Do not use media from unknown sources [2]
- 10 (a) (i) **Two** from:
 LAN is a Local Area Network
 LAN covers a small area/one building
 A school network is a LAN [2]
- (ii) **Two** from:
 WAN is a wide area network
 WAN covers a large geographical area/worldwide
 The Internet is a WAN
 A WAN consists of connected LANs [2]
- (b) Router/modem/cable [1]
- 11 (a) **Three** from:
 Animation such as cartoons/moving text
 Sound such as voiceovers/special sound effects/music
 Hyperlinks/hotspot to move between pages/sites
 Video such as moving images/reasonable example
 Rollovers to change images
 Search box to find items on that site quickly [3]
- (b) (i) **Two** from:
 It is a copy of data
 Leaving the original intact
 Stored away from the original [2]

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- (ii) **Two** from:
 Data could be corrupted on original medium
 Data could be accidentally amended/overwritten on original medium
 Data could be accidentally deleted from original medium
 Data could be maliciously deleted/edited from original medium [2]
- 12 (a) (i)** Joyce Alonzo and Aftab Ali [1]
 (ii) Maria Jones [1]
 (iii) David Senior [1]
- (b)** Visual verification/visually comparing data entered with original [1]
 Double data entry/entering data twice and the computer compares them [1]
- (c) (i)** Range (check)/lookup (check) [1]
 (ii) (Invalid) character (check)/type (check) [1]
 (iii) Length (check) [1]
- 13 Three** from:
 In the event of a crash – safer, no loss of life/injuries
 In the event of a crash – don't have to pay for replacement vehicle/repairs
 Can simulate situations which don't often occur in real life
 Can train even in extreme conditions [3]
- 14 Three** from:
 Can monitor continuously/readings can be taken more frequently
 Nurses can get tired and forget to take readings/nurses are so busy they might not be able to take readings regularly
 Computer readings are more accurate/human errors are reduced/Computers are more accurate
 More than one variable can be measured at any one time
 Results/data can be analysed automatically/Charts are produced automatically
 Automatic warnings can be generated/faster to react
 Nurses are free to do other tasks
 Reduces chances of nurses being exposed to contagious diseases
 Reduced cost of wage bill [3]
- 15 Five** from:
 Data is gathered/collected from experts
 Knowledge base is designed/created
 A structure to relate each item in the knowledge base is created
 An interrogation technique to access the data is created
 A user interface/method of displaying the results/method of inputting data/input screen/output screen is designed/created
 The inference engine is designed/created
 The rules base is designed/created
 The system is tested [5]

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- 16 (a) Two** from:
 (Cannot) deposit cash
 (Cannot) withdraw cash
 (Cannot) deposit cheques with most banks [2]

(b)

What is the name of the fourth planet from the Sun?		
What is your favourite place?	✓	[1]
How many miles is it from New York to Washington?		
What is your mother's maiden name?	✓	[1]
Who is the prime minister of Australia?		
What is the capital of France?		

- (c) Two** from:
 Initial cost of hardware/software (is expensive)
 Need to retrain staff
 Loss of customers/more difficult to sell other services – due to lack of personal touch
 System maintenance may be/is expensive/cost of system maintenance [2]

- (d) Three** from:
 Causes data to be scrambled/encoded
 Requires an encryption key/software to encrypt
 Requires a decryption key/encryption/key/software to decrypt
 Results in data which is not understandable/readable
 Protects sensitive data...
 ... from being understood if it falls in to the wrong hands [3]

- 17 Five** from:
 Adequate space for response/individual character boxes
 Fonts/font size should be easy to read
 Instructions how to complete form/clearly labelled field names
 Logical order of questions
 Questions spaced out/group relevant fields together
 Not too much text
 Sensible colour scheme
 Use of tick boxes
 Strikethroughs
 Appropriate white space/fills the page [5]

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18 Six from:

Fax

Personal data more likely to be intercepted by another office worker
 Quicker to receive message than using post
 Document with signature is legally acceptable via fax
 Documents can be lower quality when received

Email

Personal data less likely to be intercepted by another office worker
 No need to do printouts therefore more secure
 Attached documents are better quality in attachment
 Email is more environmentally friendly
 Email attachments can be edited by recipient easier than fax/post
 Multimedia attachments can be sent by email
 Quicker to receive message than using post
 You can send from anywhere there is an internet connection by email
 Easier to send to several recipients at the same time using email
 Has a lower running cost such as paper/ink than fax
 More people have access to email than fax machines
 You cannot send solid objects by email

Post

Received more slowly by recipient
 Attached documents are better quality in post
 Multimedia documents can be sent by post
 Solid objects can be sent by post
 You can send from anywhere
 Document with signature is legally acceptable
 Don't have to worry about equipment being faulty
 More people have access to post than fax machines

One mark can be awarded for a reasoned conclusion

[6]

19 Six from:

Internet is not regulated
 Danger of accessing inappropriate websites.
 Can take long time to find required information
 Have to have internet connectivity/computer/phone line/modem
 Internet tends to be up to date
 Internet has vast amounts of information/wide range of information
 Can access biased/inaccurate/unreliable websites
 Lack of expertise can lead to inefficient searching
 Easy to plagiarise information

[6]

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20 Two advantages from:

Can reach more people

Easier to update

Can have multimedia which would attract more customers/eye-catching [2]

Two disadvantages from:

More expensive to start up/pay programmers/developers

More expensive to maintain

Need specialist equipment to start with

May not reach target audience [2]