

**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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Page 3	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2014	0417	11

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  
 O<sub>2</sub> sensor  
 CO<sub>2</sub> 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]

Page 4	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2014	0417	11

- (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]

Page 5	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2014	0417	11

- (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]

<b>Page 6</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>Cambridge IGCSE – October/November 2014</b>	<b>0417</b>	<b>11</b>

- 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]

Page 7	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2014	0417	11

**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]

<b>Page 8</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>Cambridge IGCSE – October/November 2014</b>	<b>0417</b>	<b>11</b>

**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]