

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International General Certificate of Secondary Education

## **MARK SCHEME for the October/November 2015 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 2015 series for most Cambridge IGCSE<sup>®</sup>, Cambridge International A and AS Level components and some Cambridge O Level components.

© IGCSE is the registered trademark of Cambridge International Examinations.

<b>Page 2</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>Cambridge IGCSE – October/November 2015</b>	<b>0417</b>	<b>12</b>

- 1 Flip  
Crop  
Resize  
Use of word/text wrap  
Change of font type/face  
Change of font size [6]

2

<b>Use</b>	<b>Modelling</b> ✓	<b>Database</b> ✓	<b>Word Processing</b> ✓	
Writing a letter			✓	[1]
Flight simulation	✓			[1]
Storing student records in a school		✓		[1]
Producing a business card			✓	[1]

3

<b>Use</b>	<b>Mainframe</b> ✓	<b>Laptop</b> ✓	<b>Desktop</b> ✓	
Entering data from a Biology survey while out of school		✓		[1]
Massive transactions which need the use of many CPUs	✓			[1]
Students who need to transport their computer from home to use in school		✓		[1]
Personal use with better performance at lower cost			✓	[1]

4

Company	Parallel running ✓	Pilot running ✓	Direct changeover ✓	
A company with several branches wishes to test a new system in one branch only.		✓		[1]
A small company that can only afford to spend a small amount of money on implementing the new system.			✓	[1]
If the whole system fails, the company wishes to return to the original existing system.	✓			[1]
A company that wants the quickest method of implementation.			✓	[1]

- 5 (a) The inbuilt device which moves the cursor when using a laptop is called **a touch pad** [1]
- (b) The device used for selecting an icon so a bar code label can be printed in a supermarket is called **a touch screen** [1]
- (c) The device used for controlling a pointer on a screen when the user has limited motor skills is called **a trackerball** [1]

- 6 **Three** matched pairs from:
- FORWARD n/BACKWARD n  
Move n units forward/Move n units backward
- RIGHT t/LEFT t  
Turn right t degrees/Turn left t degrees
- REPEAT n  
Repeat the **following** instructions n times
- END REPEAT  
Finish the REPEAT loop [6]

- 7 (a) **Three** from:
- Temperature sensor  
Light sensor  
pH sensor  
O<sub>2</sub> sensor  
CO<sub>2</sub> sensor [3]

<b>Page 4</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>Cambridge IGCSE – October/November 2015</b>	<b>0417</b>	<b>12</b>

**(b) Two** from:

- Need to know values in unpolluted part of river
  - Need to know values in polluted part of river
  - Need to place sensors in river above factory
  - Need to place sensors in river below factory
- [2]

**(c) Five** from:

- The sensors feed back/send data to microprocessor/computer
  - Data is converted from Analogue to Digital/sent through an ADC
  - Readings from above the factory are compared with those from below factory...  
...by the computer/microprocessor
  - Differences/results are printed out
  - Graphs are automatically produced by computer showing values from below and above factory...
  - ...plotted against time
  - Process is continuous
- [5]

**8 (a) Three** from:

- To save printing costs of reports
  - To ensure test results, etc. are received by parents
  - To allow immediate feedback to parents after tests/exams
  - To keep parents up to date with child's progress/targets
- [3]

**(b) User id** – in order to identify the user to the system/in order for system to assign privileges [1]

**Password** – in order to allow access to the system if it matches user name [1]

**9 Four** from:

- Access to the internet
  - Email address
  - Router to connect to the internet
  - Domain name to have own website
  - Email security software
  - Web space to create own website
  - Storage space to save data in the cloud
  - DNS service to convert URLs to IP addresses
  - Firewall to block unauthorised traffic
- [4]

<b>Page 5</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>Cambridge IGCSE – October/November 2015</b>	<b>0417</b>	<b>12</b>

- 10 (a)** C5 [1]
- (b)** 8 [1]
- (c)** =b2\*c2 [1]
- (d)** =sum(d2:d6) [1]  
Sum() [1]  
D2:D6 [1]
- (e) Three** from:
- Easier to modify/change data/variables
  - Costs less to change data/variables
  - The real thing may be impossible to create
  - You can test predictions more easily/model can make predictions more accurately
  - You can ask many what if questions which would be impractical in real life
  - Results are obtained more quickly [3]
- 11 Three** from:
- To cause data to be scrambled/encoded
  - Protects sensitive data...
  - ...from being understood if it falls in to the wrong hands
  - Only user/computer with key can understand data [3]
- 12 (a)** Price – currency/fixed point decimal [1]  
Length – integer [1]
- (b) Two** from:
- Set it up as a text field
  - With drop-down menu/lookup table...
  - ...containing A, B, C and Free
- OR
- Create/Set up a validation rule
  - Set parameters to A OR B OR C OR Free [2]

Page 6	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2015	0417	12

(c) Six from:

- Create a query using data in table
- Select fields to be printed...
- ...select Film\_name, Director, Price (\$) and Length (min)
- Set up query design
- Length (min) > 110
- Save the query
- Create report using this query
- Insert header/footer
- Select appropriate font/font size for heading
- Select appropriate font/font size for field names
- Select appropriate font/font size for field contents

[6]

13 (a)

Word processor	
Spreadsheet	
Rules base	✓
Search engine	
Inference engine	✓
Control software	
Knowledge base	✓
Presentation software	

[3]

(b) Three from:

- Prospecting
- Tax
- Careers
- Chess games
- Animal/plant classification/identification

[3]

14 (a) Four from:

- Users of the current system will be interviewed
- Users of the current system will be asked to complete questionnaires
- Users of the current system will be observed using the system
- Existing documents will be examined
- Management will be interviewed
- Management will be asked to complete questionnaires

[4]

Page 7	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2015	0417	12

(b) Four from:

- Inputs of the current system
- Outputs from the current system
- Processing in the current system
- Problems/limitations with the existing system/improvements required
- The user requirements
- The information requirements

[4]

15 Three from:

- Electrocution by touching loose/bare wires/spilling liquids on electrical contacts
- Tripping and falling over trailing wires or cables
- Physical injury to feet/legs, etc. caused by heavy equipment falling
- Fire caused by too many plugs in multisocket and thereby overheating/overheating of equipment

[3]

16 Seven from:

*Advantages*

- No danger of accessing inappropriate information
- Relevant information can be found quite quickly
- Don't have to worry about having to have internet connectivity/computer/phone line/modem
- Book will be less biased/more reliable as teacher has recommended it
- Index makes searching more efficient

*Disadvantages*

- Book has limited amounts of information
- Can be slower to find relevant information than using a search engine
- Books can go out of date quickly/difficult to update a book
- Books don't have multimedia to help explain information
- Easier to detect plagiarism

A mark is available for a reasoned conclusion

[7]

17 Three from:

- It is possible to prevent employees accessing undesirable websites
- They can ensure that available information is specific to their needs
- It is easier to make sure confidential messages stay within the company
- There is less chance of company computers being hacked

[3]

18 Three from:

- In case original data is accidentally deleted
- In case data is maliciously deleted
- In case original data is corrupted
- To recover a previous version of a file

[3]

<b>Page 8</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>Cambridge IGCSE – October/November 2015</b>	<b>0417</b>	<b>12</b>

**19 Three from:**

- Putting wheels on cars
- Painting car bodies
- Welding parts on a car body
- Carrying car windscreens/doors
- Moving goods in an automatic warehouse
- Placing engine block into body
- Installing transmission system

[3]