

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series

0417 INFORMATION AND COMMUNICATION TECHNOLOGY

0417/13

Paper 1 (Written), maximum raw mark 100

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| | | | |
|---------------|--|-----------------|--------------|
| Page 2 | Mark Scheme | Syllabus | Paper |
| | Cambridge IGCSE – October/November 2015 | 0417 | 13 |

1 Six from:

- Indent
- Bold
- Subscript
- Superscript
- Underline
- Text highlight
- Italic
- Fully justified
- Border

[6]

2

| Use | Web cam ✓ | Keyboard ✓ | Scanner ✓ | |
|---|---------------------|----------------------|---------------------|-----|
| Applications where text has to be created rather than copied | | ✓ | | [1] |
| Inputting hard copy documents directly into a computer | | | ✓ | [1] |
| Inputting moving pictures from a fixed position into a computer | ✓ | | | [1] |
| Entering text into a word processing document | | ✓ | | [1] |

3 MICR –

Magnetic Ink Character Recognition/Reader [1]
Used for processing bank cheques/Reads the characters at the bottom of bank cheques [1]

OMR –

Optical Mark Recognition/Reader/position of pencil/pen marks are read by scanner/Reader [1]
Used for processing exam papers/school registers/lottery/multiple choice questionnaires/positions of marks identified on exam papers/school registers/lottery/multiple choice questionnaires [1]

4

| | Numeric ✓ | Date ✓ | Text (alphanumeric) ✓ | |
|--|---------------------|------------------|---------------------------------|-----|
| A student's name | | | ✓ | [1] |
| How many times a student has been late to a lesson | ✓ | | | [1] |
| The amount of money it costs to travel to school | ✓ | | | [1] |
| When the end of term is | | ✓ | | [1] |

| | | | |
|--------|---|----------|-------|
| Page 3 | Mark Scheme | Syllabus | Paper |
| | Cambridge IGCSE – October/November 2015 | 0417 | 13 |

- 5 (a) The software used to find information on the internet is **a search engine [1]**
- (b) The software which is a component of an expert system is **an inference engine [1]**
- (c) The type of software used to create financial models is **a spreadsheet [1]**
- 6 **Three** from:
- Is a means of identifying yourself to a system
 Something you know such as PIN/password
 Something belonging to you such as a bank card
 Something unique about you such as a biometric feature **[3]**
- 7 **Three** from:
- It might lead to double booking
 Customer would not be sure booking has been successful
 Would take a long time to receive confirmation/ticket
Processing would take a long time which would cost company money **[3]**
- 8 Move n units forward **[1]**
- Repeat the following instructions n times **[1]**
- Turn left t degrees **[1]**
- Turn right t degrees **[1]**
- Lift the pen **[1]**
- Lower the pen **[1]**
- 9 (a) Temperature **[1]**
 Time **[1]**
- (b) **Five** from:
- The sensor feeds back data to computer
 Data is converted from Analogue to Digital
 Readings are stored in a spreadsheet/software package
 Graphs are automatically produced by computer...
 ...plotted against time
 Calculations performed on spreadsheet to show rate of cooling
 Graphs examined to see general overview of rate of cooling **[5]**

| | | | |
|--------|---|----------|-------|
| Page 4 | Mark Scheme | Syllabus | Paper |
| | Cambridge IGCSE – October/November 2015 | 0417 | 13 |

10 Four from:

WiFi technology enables local area network...
 ... and Internet connections
 Using WiFi, a laptop or desktop computer can connect to a network's wireless router
 Bluetooth connects two devices together
 Usually Bluetooth peripherals are powered by batteries that need to be charged or replaced
 WiFi covers a larger distance than Bluetooth
 WiFi requires more than ten times more bandwidth than Bluetooth

[4]

11 Six from:

Optical discs such as CDs DVDs and Blu-ray discs...
 ...are read from and written to using a laser beam
 Magnetic disks are read from and written to using read/write heads
 Optical discs are more portable
 Magnetic disks are more likely to spike
 Optical discs are cheaper to buy
 Magnetic disks store more data
 Optical discs have slower access times
 Optical discs have slower transfer rates
 Optical discs can be more easily lost/stolen
 Optical discs can be more easily scratched
 Both store videos, music
 Both use direct access

[6]

12 Six from:

Initial cost of hardware/software is expensive
 Fewer staff needed – less spent on wages
 Fewer shops needed – less spent on rates/rent/utilities
 Potentially larger customer base
 Need to retrain staff
 Less customer loyalty/loss of customers/more difficult to sell other services/products due to lack of personal touch
 Costs of system maintenance
 Greater costs due to more delivery staff/vans

[6]

13 (a) Three matched pairs:

Interview
 Manager

Questionnaire
 Drivers

Observation
 Secretaries

[6]

| | | | |
|--------|---|----------|-------|
| Page 5 | Mark Scheme | Syllabus | Paper |
| | Cambridge IGCSE – October/November 2015 | 0417 | 13 |

(b) **Three** from:

- Data type for each field
- Appropriate field names
- Validation rules
- Field lengths
- Field descriptions

[3]

14 (a) **Four** from:

- Tests to see whether the condition $A1 > 12$ is true or false
- If the condition $A1 > 12$ is true the function will return “strong”
- If the condition $A1 > 12$ is false, the function will test if $A1 > 6$ is true or false
- If the condition $A1 > 6$ is true the function will return “medium”
- If the condition $A1 > 6$ is false the function will return “weak”

[4]

- (b)
- Should be $A1 \leq 6$
 - Should be $A1 \leq 12$
 - Should be “strong” (second speech mark missing)
 - Should be two right-hand brackets

[1]

[1]

[1]

[1]

(c) **Three** from:

- Simulations
- Mathematical models
- Civil engineering models
- Flight/pilot simulation/training
- Design of fairground rides
- Traffic control
- Building fire simulation
- Weather forecast models
- Population modelling

[3]

15 (a) **Four** from:

- Can use the final part of a URL to identify reliability
- .ac, .gov, .org are usually fairly reliable
- If information matches that from reliable sites or reliable/authenticated text books
- If responsible bodies have endorsed the site information will be reliable
- If it has links to other reliable sites then information will be reliable
- If site has testimonials it is likely to be reliable
- If the author’s credentials are good it is likely to be reliable

[4]

(b) **Three** from:

- If site has excessive advertising it could be unreliable
- If the advertising is related only to its own products it could be unreliable
- If the date of the last update was a long time ago it is likely to be unreliable
- If it has links to other unreliable sites it could be unreliable

[3]

(c) Four from:

- An intranet is a computer network
 - Exists usually within one organisation/school
 - Meets the internal needs of an organisation/school
 - Can be expanded to become an extranet
 - Intranet is private
 - Intranets tend to be policed/managed
 - Intranet has an extra layer of security
 - Data found in an intranet is likely to be more relevant to the students' needs
- [4]

16 Four from:

- Easy to keep in immediate contact with friends/make new friends
 - Easy to communicate to more than one friend/to communicate with people overseas
 - Can search for people who you've fallen out of touch with
 - Easy to arrange meetings/visits to cinemas/theatre
 - Can share photographs/videos/images/opinions/views
- [4]

17 Three matched pairs from:

- Headaches/eyestrain
From staring at screen continuously
 - RSI in fingers
From continual typing/repetitive clicking of mouse
 - RSI in wrists
From repetitive clicking of mouse/continual typing
 - Backache
From sitting in same position all day
- [6]

18

| | | |
|--|---|-----|
| | ✓ | |
| A wiki is an example of a spreadsheet. | | |
| A wiki is quicker to search than a database. | | |
| Wiki entries are in chronological order. | | |
| A wiki can have several contributors. | ✓ | [1] |
| Wikis are always a reliable source of information. | | |
| Wikis can be edited using a web browser. | ✓ | [1] |
| Anybody can create a wiki. | ✓ | [1] |
| Wikis never contain hyperlinks. | | |