

MARK SCHEME for the October/November 2013 series

**9713 APPLIED INFORMATION AND
COMMUNICATION TECHNOLOGY**

9713/12

Paper 1 (Written A), maximum raw mark 80

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 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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- 1 *Digital camera*
 Use: to take photographs/pictures/videos of property [1]
 Advantage: can upload photographs directly to computer/doesn't need scanner/can describe property while recording a video [1]
- Satellite Navigation system*
 Use: to find his way to a property/to show location of the house/show present location [1]
- Advantage: more up to date maps/easier to locate route/find best routes/can find alternative route avoiding traffic jams/don't have to stop or get distracted by trying to use a map as GPS has audio capability/more robust than an atlas/less likely to get lost [1]
- PDA*
 Use: to store his appointments/store phone numbers of customers/colleagues [1]
 Advantage: quicker/easier to search for information/can set meeting alerts [1]
- Laptop*
 Use: to store his appointments/store phone numbers of customers/colleagues/store prices of properties/research properties/type up reports/can email reports/record room dimensions/record details provided by clients/type up/email to customers descriptions of the house for sale [1]
 Advantage: quicker/easier to search for information/can set meeting alerts/easier to edit or format text/report is with office more quickly [1]
- 2 (a) **Four** from:
 Jatinder is given two PINs by the phone company
 A personal PIN/a PIN for the organiser
 A participant PIN/a PIN for the people taking part in the conference
 Jatinder contacts participants and tells them the participant PIN
 Just before the conference Jatinder dials the phone number and keys in his personal PIN
 Participants join the conference by typing in the participant/their own PIN [4]
- (b) **Two** from:
 You can't see the facial expressions/body language of other participants.
 You can't see/share documents
 Harder to identify whose turn it is/who wants to contribute next. [2]
- 3 (a) **Name:** Business [1]
 Advertises the (whole) company/to make the company/brand name familiar [1]
- (b) **Three** from:
 Customers who haven't got a computer wouldn't be reached by online advertising/can read posters/customers who aren't connected to the internet wouldn't be reached by online advertising/can read posters
 Large initial cost for website/can be expensive to maintain/producing posters is cheaper than paying a programmer/website developer
Small posters can be produced by the corporation using their own PCs and printers
 Can't be switched off like pop ups/pop up blockers can be used [3]

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- (c) **Three** from
 Posters can only be seen in a limited number of places/people wanting to move into the area (from outside the area) might not see posters
 Posters can be defaced (so that the message cannot be seen clearly)
 Posters are not interactive
 Websites have multimedia features
 Websites are easier to update (as you don't have to reprint many copies)
 A much wider area/audience/potential customer base is covered (cheaply) by using a website
 More information can be put on a website
 People who don't leave the house won't see the posters [3]

- 4 (a) **Four** from:
 Input box/input to the system – in this case customer orders/what item of clothing customer wants to buy
 Process box – used to represent computer processing, in this case processing of customer orders
 Magnetic disc symbol – used to represent storage of data using a magnetic disc, in this case the customer orders/records of what you want to buy
 Output box – used to represent outputs from the system, in this case invoices produced [4]

- (b) **Three** from:
 Cheaper as it is mass produced
 Available straight away/takes more time to produce purpose built software
 Testing rigorously carried out by the developers
 Phone operator helplines available
 You can have lots of user groups to help [3]

- (c) **Two** from:
 Designed specifically for the task/satisfies the exact needs of the company/no distracting/unnecessary/features
 Does not have to be adapted for use
Programmers can make any changes required/programmers can further develop it in the future
 Company now owns the copyright and can make money selling copies/licences of software [2]

- 5 (a) **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
 Use of strike throughs
 Appropriate white space
 Provide box/place to sign in [5]

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(b) **Three** from:
 Drop down menus to select from a list of options
 Navigation buttons to move between forms/pages
 Submit/Save button to save records and move on
 Exit button to close the software/form
 Interactive features to help complete the form [3]

(c) **Four** from:
 The number of tables is decided upon
 Relationship diagrams are designed
 All data is input
 Field with unique data is identified
 The key field/s is/are chosen
 The types of relationships between the tables decided upon...
One to many, one to one, many to many
 Relationships are created/tables are linked...
 ... using key field [4]

6 (a) **Three** from:
 Computer to process the calls/look up customer information/to record orders
 Monitor to display customer/call details/script
 Telephone set/headset/speakers/microphone to speak with/listen to customers
 Keyboard to type up details of the call/action taken/input orders [3]

(b) First-party call control [1]
Two from:
 Allows operator to have a direct connection between their computer and the phone set
 Allows the operator's computer to control the functions of the operator's phone
 Suitable only for the smallest of call centres [2]

Third-party call control [1]
Two from:
 Requires a dedicated telephony server (to connect the telephone network and the computer network)
 Operator's phone communicates directly with the server
 Operator's phone is not directly connected to their computer
 The server controls all the phones
 The server can direct a call to the appropriate operator
 Any computer in the system can control any phone
 Suitable for large call centres [2]

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(c) Four from:

Headaches – ensure that monitor is at the correct height/distance/position/focus on distant objects from time to time/take regular breaks and walk around/use screen filter
 Eyesight problems – ensure that monitor is at the correct height/distance/position/focus on distant objects from time to time/take regular breaks and walk around/use screen filter
 RSI – carpal tunnel syndrome – ensure that regular finger exercises are practised/take regular breaks/use wrist supports/use trackballs/ergonomic keyboard
 RSI – cubital tunnel syndrome – keep forearms horizontal when using keyboard/take regular breaks/place arms at your side straight down from time to time to time
 Back/neck problems – maintain good posture/sit in a straight backed chair/sit in a height adjustable chair/ensure that monitor is at the correct height
 Deep vein thrombosis – take regular breaks and walk around

[4]

7 (a) Six from:

Student records responses on OMR sheet
 Computer scans OMR
 Computer asks questions of the students
 Student inputs responses on computer
 Responses are compared with stored answers
 Assessment can be either formative or summative
 Summative – responses are recorded...
 ... and a total mark calculated/awarded
 Summative – No suggestions for improvement are provided
 Formative uses the results of students' answers to form a judgement on progress
 Formative – Areas for improvement are provided to the student (only if opposite not awarded for Summative)
 Marks can be entered into a spreadsheet/database
 Can chart results/calculate average mark/compare with targets (to show progress/comparative performance)

[6]

(b) Two from:

Ordered sequential uses a key field
 Unique to every record
 Data is ordered using this field
 Unordered means that records are arranged with no thought given to the order.
 Unordered sequential file is often referred to as a serial file
 Data is easier to amend/delete in an ordered file

[2]

(c) Four from:

Usually, (apart from indexed sequential), the only way of retrieving information is to go through each record one by one.
 Retrieving information is slower than random access
 Amending a record is quite difficult
 Inserting a record is quite difficult
 have to add new data on to end of file
 New record has to be same length as record being replaced

[4]

(d) Transaction file has to be sorted into same order as master file

[1]

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8 Direct changeover is replacing the old system with the new system immediately/overnight [1]

Two from:

The benefits of the new system are available immediately/the method of implementation is quicker than parallel running

It is a cheaper method as you don't have to employ two sets of workers

It is often more thoroughly tested than parallel running [2]

9 (a) **Two** from:

Produced specifically for systems analysts/programmers.

Helps when the system needs further development/upgrading/improvements.

Helpful should any errors occur in the system [2]

(b) **Six** from:

Systems –

Test data/test plans so that systems analyst can see the results of these/test results

The results of the systems analysis/DFD diagrams

What is expected of the system/purpose of the system

Overall design decisions such as the choice of hardware and software

Overall design decisions such as file, input and output structures.

Systems flowcharts

Program –

Description of the software/purpose of the software

Reasons for choosing those pieces of existing software that were used instead of the programmer having to write code.

Input and output data formats

Program flowcharts/algorithms

Program listing – a complete copy of the code used with annotation explaining what each module of code does

Notes that will help any future programmer to make modifications to the system [6]