



INFORMATION AND COMMUNICATION TECHNOLOGY

0417/11

Paper 1 Written

October/November 2016

MARK SCHEME

Maximum Mark: 100

Published

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.

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- 1 (a) RAM [1]
- (b) Motherboard [1]
- (c) ROM [1]
- (d) Sound card [1]
- 2 (a) Graphical User Interface or GUI [1]
- (b) An icon is a picture/image
Used as a shortcut to a program/application [2]
- (c) Click/tap on it
Use a pointer/gesture/mouse/enter key/pointing device [1]

3

	TRUE (✓)	FALSE (✓)
A WAN usually connects a number of LANs.	✓	
A LAN is usually found on one building.	✓	
A WAN is a Wireless Area Network.		✓
The internet is an example of a WLAN.		✓

4 correct answers – 2 marks
 2 or 3 correct answers – 1 mark
 0 or 1 correct answer – 0 marks

[Max. 2]

4

	TRUE (✓)	FALSE (✓)
To set the page to landscape you select page orientation.	✓	
The gutter margin is only on the left hand side of the page.		✓
A widow is where the last line of a paragraph appears as the first line of text on a new page.	✓	
When you lock <i>aspect ratio</i> the width changes automatically as the height is increased.	✓	

4 correct answers – 2 marks

2 or 3 correct answers – 1 mark

0 or 1 correct answer – 0 marks

[Max. 2]

5 (a) Max **two** from:

A virus is a piece of software/program code that infects a computer
 ...attaches itself to files
 ...and has the ability to replicate itself.

Max **three** from:

Causes computer to crash/shut down
 It can delete/corrupt data/files
 Causes the computer operations to run slowly/become unusable
 Makes software/OS unusable
 Fills up the computer memory/hard disk
 Can corrupt/erase contents of hard disk

[4]

(b) **Three** from:

Scan the pen-drive as it is inserted into his computer
 Use an anti-virus software to scan his computer hard drive
 Do not use media from an unknown source
 Install/download up-to-date anti-virus software and activate/update anti-virus software/use up-to-date antivirus

[3]

(c) **Two** from:

Identify the virus using anti-virus software/scan the file
 Option given to delete or quarantine the file
 Software quarantines the virus infected file so the virus cannot be activated
 Delete the virus/clean/disinfect the file
 Check the quarantined file to see if it is safe to open

[2]

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- 6 Two** from:
 Compare the final solution with the user requirements
 Identify any limitations of the new system
 Identify any further improvements to the new system
 Analyse feedback from users of the new system
 Compare test results from the new system with the old system [2]
- 7 (a) Two** from:
 Proofreading often involves reading through the document without referring to the original source document.
 This is to check for errors in the typing/spelling/grammar.
 Verification involves reading through the document but referring to the original source document.
 Verification can involve one person reading the document and a second one re-reading the document.
 Proofreading does not involve two people keying in the same data for the computer to compare the versions. [2]
- (b) Visual verification/Visual check** [1]
- 8 (a) Four** from:
 The letter is typed/loaded/opened.
 Uses a word processing package/DTP/master document
 Tags/fields/place holders are placed in the letter.
 Select/locate the database/create mailing list.
 The database/ mailing list is linked to the letter.
 Filter the database/find recipients
 The letter is merged with the database/ mailing list.
 The data from the fields are imported into the letter.
 The data replaces the tags/fields/place holders.
 The letter is saved/printed/send by email. [4]
- (b) Two** from:
 Check if the date on the letter is correct
 Proofread the document
 Spellcheck the letter
 Grammar check the letter
 Check the data in the database/ mailing list to ensure up to date data was used
 Check correct fields are included [2]

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(c) Six from:

Personal data is data relating to a living individual/person.

The person can be identified (either) from the data (or from the data in conjunction with other information).

Allow one mark only for any example such as: name, address, date of birth, place of birth, bank details.

The data will have the name attached therefore it needs protecting.

The data is confidential as it links directly to the person.

The data can be sensitive:

Allow one mark only for any example, e.g. racial, ethnic, medical, religious, relating to a trade union, mental health, sexual, relating to criminal offences

If someone gets access to the data then they can use the information to attack the person.

Needs to be kept confidential so the data cannot be linked to a person.

In order to get full marks candidate needs to explain what personal data means. [6]

9 (a) Two from:

Wand or joystick

Treadmill

Pressure mats

Data gloves

Headset/head mounted displays/Head mounted device(HMD)

Goggles

Steering/gaming wheels/consoles

Pedals

Paddles

Cameras

Motion sensors

[2]

(b) Two from, for example:

Virtual museums

Virtual theme parks

Design of sports clothing

Flight simulation

Battlefield/combat simulation

Virtual tours

Medical training

Walkthroughs

Driving simulation

Any reasonable answers

[2]

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10 Matched pairs:

Eye problems/strain

Take regular breaks/use no-flicker screens/LCD/TFT screens/have eyes tested regularly/turn the brightness down/use blue screen/screen filters/blue glasses

Back pain

Use ergonomic chairs/use foot rests/regular breaks/sit with good posture/height adjustable chairs

RSI/finger pains

Ergonomic keyboards/regular breaks/less use of mouse/use trackerballs/wrist rest

RSI/wrist pains

Hands-free/less use of the mobile phone/wrist rest

Headaches

Anti-glare screens/matt finish screens/regular breaks/ use no-flicker screens/LCD/TFT screens/have eyes tested regularly/turn the brightness down/use blue screen/screen filters/blue glasses

Deep Vein Thrombosis (DVT)

Use foot rests/standing up

Neck pain

Regular breaks/good posture/document holder

Hearing loss/damage

Turn your headphone volume down

[6]

11 (a) One from:

Moisture/humidity (sensor)

Temperature (sensor)

Wind Speed (sensor)

Wind direction (sensor)

Light (sensor)

[1]

(b) Four from:

Data is read by the sensors.

The data is converted to digital data/using the ADC.

The data is sent to the microprocessor/computer (in the ground base unit)...

...using a satellite link.

...by radio waves.

Graphs/results are automatically produced by computer.

Graphs are plotted against time.

Data is saved in the computer for later use.

[4]

(c) Three from:

Cheaper sending up a weather balloon than using an aircraft due to fuel for example.

Fewer errors as the aircraft movement/heat could affect the data from the sensors.

If the air balloon is checking wind speed it is floating/constant speed therefore more accurate.

Safer, in the event of severe/extreme weather conditions due to the weather balloon not being manned.

The weather balloon will allow weather to be monitored in a fixed location.

[3]

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12 Eight from:

Advantages:

An online shop costs less to set up and run.

Reduced overheads in an online shop

Reduced cost on wages as less shop staff needed

Customers can be better targeted...

...for example: It's also much cheaper, for example, to send a marketing message by email to 1000 customers than it is to send 1000 newsletters by post.

A local business can become nationwide or even international.

An online shop can be updated instantly and as often as you like...

...for example, to promote a 'deal of the day' on your front page, without the need for expensive printed display material.

Can target products and services at specific groups based on buying data.

Business can be promoted through search engines.

Disadvantages:

In order for an online shop to work it needs constant development.

Shops need to understand tax and import/export issues if they become international.

Need to re-train staff to use the online system

The cost of setting up/maintain a website

Costly to re-train

Drop in customer loyalty therefore fewer customers

Need to pay more delivery drivers

Need to buy more delivery vehicles to deliver goods to customers

A mark can be awarded for a reasoned conclusion.

If one side of the argument, i.e. all benefits/drawbacks then 4 marks max.

If both sides have been addressed but without expansions/comparisons then 6 marks max. [8]

13 Four from:

Uses transaction/online processing for booking seats/tickets

The customer enters the number of seats/tickets they want.

The customer selects the performance they want.

The customer selects the time of the performance they want.

The customer selects the date of the performance they want.

Computer searches database to check for availability of seat.

Customer selects seat/ticket.

Customer confirms seat/ticket.

Seat marked as unavailable

Customer enters contact details.

Customer enters payment details.

Seat/ticket booked in customer's name

booking reference is generated.

bar code/QR code/e-ticket generated

transaction completed

[4]

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- 14 (a) Three** from:
 Only use websites recommended by the teacher
 Only use websites ending in .gov, .ac, .org, .edu
 Use a learner friendly search engine
 Use appropriate search conditions [3]
- (b) Three** from:
 Only email people already known to you/do not reply to spam emails
 Think before opening an email from an unknown person
 Never email the school's name
 Never use personal details in emails
 Never send a picture of the student in school uniform
 Only use contact us from a known website
 Scan all attachments before downloading them/do not open attachments from unknown people
 Check the email address is correct before sending
 Check the content of the email before sending [3]
- 15 (a) Four** from:
 Open/load database/select menu database tool
 Select create relationships
 Select/insert/drag tables A/Venue details and B/Concert details
 Venue ID in table A/Venue details is selected as the primary key/key field
 Location ID in table B/Concert details is selected as the foreign key
 Venue ID and Location ID are linked
 A one to many relationship is created [4]
- (b) Two** from:
 All records are stored in one place/table.
 Easier to understand/comprehend
 Easier to setup
 Simple sorting/searching can be carried out.
 Filters are easier to set up [2]

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16 Matched sections

Interview

Advantage

The user is more open and honest with the answers
 Questions can be added to/extended
 Questions can be modified
 Can see body language/facial expressions

Disadvantage

Time consuming to complete all the interviews
 Expensive due to analyst's time
 Not anonymous
 Can give answers that they think the interviewer wants
 May not be available at the time the analyst is available

Questionnaire

Advantage

Faster to complete all questionnaires
 Cheaper to produce questionnaires than pay/employ an interviewer
 Individuals can remain anonymous therefore they are more truthful.
 More people can answer the questionnaire than can be interviewed.
 They can fill it in in their own time.

Disadvantage

Tend not to be popular with users
 Too inflexible cannot ask follow up questions
 Users tend to exaggerate their responses as they are anonymous.
 As it's anonymous people may not take it seriously.
 Cannot expand on their answers/limited in their responses

Examining documents of the existing system

Advantage

Information can be obtained which is not possible using other methods.
 Can see the scale of the problem easily

Disadvantage

Time consuming to go through the documents
 Expensive method as the analyst will have to spend time going through documents.

Observation

Advantage

Reliable data
 Better overall view of the whole system/all the inputs and outputs of the system
 Inexpensive method as the analyst is only watching the workers.

Disadvantage

Hawthorne effect (describe)

[6]

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17

Heading

[Image of Iceland]

Students will meet at school at 7:30am on Saturday 15th Nov 2016

We will be staying at The Excelsior Hotel in Reykjavik

[Image of the hotel]

Last year the school visited Norway, click here to see a video of the trip

Norway Trip
Video link

One of the trips we have planned is to watch whales off Greenland. To see a video of the whales **click here**

The holiday will last one week and students will return to school on Saturday 22nd Nov 2016

Message from the Head teacher

If you have any concerns, with any part of the holiday then **contact the school.**

Home
page

- Heading 1 mark
- Images of Iceland 1 mark
- Hyperlinks to an external page 1 mark
- Link to a movie 1 mark
- Buttons 1 mark
- Fills the page 1 mark
- Home (page) button 1 mark
- Link to a sound file 1 mark
- Hyperlink to an email address or contact 1 mark
- Information about the trip – 2 marks

- Departure
- Arrive home
- Hotel name
- Whale watching
- Contact us

- At least 3 points = 1 mark
- All points = 2 marks
- Must have the correct details

Maximum of 6 marks

[6]

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18 To be marked as a level of response:

Level 3 (7–8 marks):

Candidates will address both aspects of the question and discuss/consider different benefits/drawbacks. The issues raised will be justified. There will be a reasoned conclusion. The information will be relevant, clear, organised and presented in a structured and coherent format.

Level 2 (4–6 marks):

Candidates will address both aspects of the question and discuss/consider different benefits/drawbacks although development of some of the points will be limited to one side of the argument. There will be a conclusion. For the most part the information will be relevant and presented in a structured and coherent format.

Level 1 (1–3 marks):

Candidates may only address one side of the argument, and give basic benefits and drawbacks. Answers may be simplistic with little or no relevance.

Level 0 (0 marks)

Response with no valid content

[8]