Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

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.

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This document consists of **11** printed pages.

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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 *aspect ratio* 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]

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]

(c) **Six** from:
Personal data is data relating to a <u>living</u> individual/person.
The person can be identified (either) from the data (or from the data in conjunction with other information).
Allow <u>one</u> 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 <u>one</u> 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]

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 <u>automatically</u> 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]

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]

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]

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 <u>all</u> 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]

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 <u>correct</u> 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]