MARK SCHEME for the March 2016 series

0417 INFORMATION AND COMMUNICATION TECHNOLOGY

0417/12   Paper 1 (Written Paper), 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.

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1 **(a)** PC/desktop [1]

(b) Laptop [1]

(c) Tablet [1]

(d) Smartphone [1]

2

	CLI (✓)	GUI (✓)
Instructions have to be typed.	✓	
Applications are represented by icons.		✓
Options are chosen from a menu.		✓
Many instructions have to be memorised.	✓	

4 correct answers – 2 marks
2 or 3 correct answers – 1 mark
1 correct – 0 marks [2]

3

	TRUE (✓)	FALSE (✓)
A multimedia projector is used to output slide shows.	✓	
A laser printer is a type of page printer.	✓	
An inkjet printer cartridge lasts longer than a laser printer toner cartridge producing the same output.		✓
A dot matrix printer produces very high quality printouts quickly.		✓

4 correct answers – 2 marks
2 or 3 correct answers – 1 mark
1 correct – 0 marks [2]

4 (a) job sharing [1]

(b) part-time working [1]

(c) working flexible hours [1]

(d) working compressed hours [1]

5 Any **four** from:

Know how to block and report unwanted users,
Never arrange to meet anyone alone
Always tell an adult first when arranging to meet someone
Always meet in a public place
Avoid inappropriate disclosure of personal data/set privacy settings/Avoid giving email address or phone number when chatting
Avoid inappropriate disclosure of your own name/Avoid giving your full name
Avoid giving your address
Avoid giving your school name
Avoid displaying a picture in school uniform
Do not display pictures taken at home/Do not display pictures taken of the school with the name attached/Do not send pictures/videos of yourself to strangers
Ensure that the person you are befriending has very secure privacy settings
Check profiles before contacting people
Verify person's contact details with other trusted people/friends [4]

6 Good example of a strong password – (1 mark)

Good example of a weak password – (1 mark)

Any **two** from:

Weak password is easy to guess/strong password is difficult to guess
Weak passwords consist of all letters or all digits or all digits with one letter/all letters with one digit
Weak password is one that has few characters
Strong password uses mixture of upper case letters, digits and punctuation marks
Weak password has repeated characters
Weak password has characters next to each other on a QWERTY keyboard
Weak passwords are ones that are similar to the user name
Weak passwords are passwords that relate to the user [4]

7 Any **four** from:

Destination B is input by driver
Position of motor vehicle at A is calculated using GPS…
…using data transmitted from 3/4 satellites
Algorithm calculates shortest distance from A to B (going through C)
Algorithm calculates distance from A to B not going through C
Makes allowances for traffic in town C
Takes into account average road speeds…
…using traffic/speed sensors on roads
Takes into account regular updates of traffic conditions
Takes into account max. speed on the road/type of road   [4]

8 Any **four** from:

Router
The network software in the original computer determines that the destination computer is on a different network...
...using IP addresses
Data is sent to the switch/hub and then passed to router
the router then passes it to the router of the other network
that router passes it to the switch/hub…
…to the destination computer

Bridge
The computer sends the data to the bridge via the hub/switch…
...using MAC addresses
if the protocol/MAC address is same, bridge passes data to the other network
Bridge passes it to the switch/hub…
…to destination computer with correct MAC address   [4]

9 (a) Any **two** from:

Both involve you being assigned a fax (phone) number
Both can involve use of a hard copy original
Both require the use of a phone line   [2]

(b) Any **three** from:

Physical faxing requires purchase of a fax machine/electronic faxing requires use/purchase of a computer/scanner
Physical faxes can be picked up by anyone/electronic faxing goes straight to your email address
Physical faxes – phone-line could be busy/engaged – electronic faxes – phone line never registers as busy/engaged
Physical faxes – must have paper and can get paper jams
Electronic fax is quicker to arrive than physical   [3]

10 (a) Any **three** from:

Name
Passport number
Date of birth
Place of birth
Nationality
Issue date
Expiry date
Facial characteristics/photograph/fingerprint/retina scan
Biometric measurements (face)
Signature
Gender
Place of issue [3]

(b) Any **three** from:
The chip is presented near a computer with a radio-frequency scanner
The scanning antenna puts out radio-frequency signals in a relatively short range.
It provides a means of communicating with the transponder/the RFID tag
The scanning device provides energy…
…so that the chips can broadcast the information in them…
…for the computer to read. [3]

(c) Any **two** from:

More secure than a traditional passport as biometric measurement data difficult to forge
Counterfeits can be more easily identified than non-RFID passports
More rapid flow at security check points/quicker than reading it manually [2]

11 (a) Appropriate spacing for each field (1 mark)
Forward/backward buttons/save (submit) - must have at least two navigation aids. (1 mark)
Candidate attempts for information to fill the page AND is clearly a screen form (1 mark)

All six of the given fields – 3 marks
Five of the given fields – 2 marks
Four of the given fields – 1 mark
Each additional field other than those given minus 1 mark, to a mark of zero of fields [6]

(b) (i) format/picture check
must consist of one letter, three digits, space, three letters [2]

(ii) range check
must be >=140 and <=180 [2]

(c) Engine_size > 1.4 OR Parking_sensors = "Y"

1 mark for Engine_size
1 mark for > 1.4
1 mark for Parking_sensors
1 mark for = "Y"
1 mark for OR [5]

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(d) K674 TUV
R123 AZN
U283 BBV
K943 SCG

2 marks is all four registrations are shown and correct.
1 mark if all five registrations shown [2]

12 (a) B4*C4 [1]

(b) =B1*D4 or =D4*B1 or =B$1*D4 or =D4*B$1

1 mark for B1
1 mark for correct absolute referencing B$1 or B1
1 mark for *D4 or D4*
Minus 1 mark per incorrect or added operator [3]

(c) Any **three** from:

When formulae are replicated/copied/dragged down/fill down…
…some cell references must remain unchanged
If it wasn't used when the formula in E4 was replicated down it would multiply by B2, B3 etc.
These cells are either blank or contain values not equal to 25%/need to be 25% [3]

(d) SUM(F4:F8) [1]

13 (a) Any **two** from:

HyperText Transfer Protocol
HTTP is a communication protocol used on the internet to allow communication between two computers (devices)
HTTP is an application protocol/set of rules
HTTP is the foundation of data communication for the World Wide Web [2]

(b) Any **two** from:

HTTP is not secure/HTTPS is secure…
…uses SSL/HTTP does not use SSL
HTTPS transmits data over the internet in an encrypted form/HTTP transmits data over the internet in an unencrypted form
HTTPS requires additional processing power in its servers which could result in slowdown of responses [2]

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14 Any **four** from:

Computer might be infected with spyware detecting key presses which slows down data transfer speeds over the internet
Computer might be infected with viruses taking up memory and limiting bandwidth.
If the computer's memory is close to full, data transfer speed over the internet can slow down considerably
The search might be too general giving irrelevant information as well as relevant information
Search providers add targeted marketing adverts from companies to the search results/ your search results are gathered to target further marketing/advertising   [4]

15 .txt is a text (file) used by a variety of text editors (1 mark)

.rtf is rich text (format) for a rich text file that is readable by most word processing software (1 mark)

Any **three** from:

RTF has many more features than TXT.
RTF is capable of basic font formatting while TXT isn't.
RTF is capable of paragraph formatting while TXT isn't.
RTF is capable of creating bulleted lists while TXT isn't.
RTF files can include images while TXT cannot.
.TXT takes up less memory   [5]

16 Any **five** from:

Change the font type to make it more informal/appealing
Change the font size bigger
Simplify the language
Make the heading centred
Make the font size for the heading larger than the body text
Add interesting/relevant images
Bold/underline/highlight/italicised keywords
Bold/underline/highlight headings
Line spacing after paragraphs/in paragraphs
Colour text to emphasise keywords/headings
Change the existing border to a more interesting/relevant border   [5]

17 **Stage 1** reflected through the Y axis (1 mark)

Stage 2 rotated through 90° (clockwise) about the origin (1 mark)

Stage 3 reflected about the Y axis (1 mark)
        Filled with black colour (1 mark)   [4]

18 Any **four** from:

When you want to apply different formatting in the same page without disrupting the formatting of the whole page.
When you want to use columns in a page, and have different amounts of columns on the same page.
When you want to use a heading across the whole page but the text below is in several columns.
When you don't want headers on pages with a title, but you do want them on other pages.
If you didn't have them, each page would have the same header.
To enable page orientation to change between 2 pages. [4]

19 To be marked as a level of response:

Level 3 (7–8 marks)
Candidates will address both aspects of the statement and discuss/consider greater security but also possible lack of security.
The issues raised will be justified. There must 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 statement and discuss/consider greater security but also possible lack of security although development of some of the points will be limited to one side of the argument.
There may 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 aspect of the statement or give reasons why there is greater security but also possible lack of security
Answers may be simplistic with little relevance.

Level 0 (0 marks)
Response with no valid content [8]

Examples of more secure:
Data more difficult to copy
Larger amount of information can be stored
Disabled people find it easier than signing
Reduces disputes at checkouts over validity of signature/Saves time at checkouts
Not affected by magnetic fields
Even when the card is stolen, the thief still needs the PIN, so it is much safer
Magnetic stripe reader had to be in a fixed location.
If the transaction did not take place near a terminal (in a restaurant, for example) the card had to be taken away from the customer to the card machine.
It was easily possible for a dishonest employee to swipe the card surreptitiously through a cheap machine...
...which would take a couple of seconds to record the information on the card and stripe
Even at the terminal, the criminal could bend down in front of the customer and swipe the card on a hidden reader.
Illegal cloning of cards easy, and a common occurrence.
only the magnetic stripe can be copied, and a copied card cannot be used on a PIN terminal

The introduction of chip and PIN coincided with wireless data communications technology becoming inexpensive and widespread

Wireless PIN pads were introduced that could be brought to the customer and used without the card ever being out of sight

However, this would have been possible, had the technology been available, with magnetic stripe cards

Chip and PIN and wireless together reduce the risk of cloning of cards by brief swiping.

Examples of not always secure because:

Cards can still be cloned

People can be careless when using their PIN.

Credit and debit card fraud has gone down with chip and pin

ATM fraud has gone up.

Hidden cameras sometimes are used to see which keys are pressed for the PIN.

The advent of chip and pin has also generated a rise in phishing