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Cambridge IGCSE™

INFORMATION AND COMMUNICATION TECHNOLOGY	**0417/13**
Paper 1 Theory	**May/June 2023**
MARK SCHEME	
Maximum Mark: 80	

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 International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the May/June 2023 series for most Cambridge IGCSE, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.

This document consists of **9** printed pages.

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Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Mark scheme Abbreviations and Rules

/ separates alternative words / phrases within a marking point
// separates alternative answers within a marking point
underline actual word given must be used by candidate (grammatical variants accepted)
max indicates the maximum number of marks that can be awarded
( ) the word / phrase in brackets is not required, but sets the context

Note: No marks are awarded for using brand names of software packages or hardware. These must be created.

Examiners must ensure that annotations are placed to show that the whole answer has been seen

Annotations MUST be placed in white space close to where the mark is awarded

Before submitting a script please check all ticks match marks

At the end of prose answers place a TV to show that the whole answer has been marked

Any blank pages place the SEEN annotation

If an answer is left blank then use SEEN and award NR, but if anything has been written for example 'Don't know', '?' etc. then use NAQ and award 0. If an answer has been attempted and crossed out then attempt to mark it.

Question	Answer	Marks
1	B Format check	**1**

Question	Answer	Marks
2(a)	Network Interface Card / NIC	**1**
2(b)	Backing storage	**1**
2(c)	Touch screen	**1**

Question	Answer	Marks
3(a)	**Six** from: ***Advantages*** Larger screen to read the typed data Laptop uses a physical keyboard therefore easier to type Larger keyboard to type in the data Fewer data entry errors due to larger screen / keyboard More suited for entering mass amounts of data Laptop version of software will have more features than smartphone version of software More computer storage for typed text Easier to add other devices to store the data ***Disadvantages*** Less portable / heavier than a smartphone as the smartphone can be slipped into a pocket Smartphones are smaller therefore easier to carry More likely to have a smartphone with them **To gain full marks candidates must have correct answers from both advantages and disadvantages.**	**6**
3(b)(i)	**Two** from: Camera Microphone Touch screen	**2**
3(b)(ii)	**Two** from: Speaker Screen	**2**
3(b)(iii)	**Two** from: SD card Flash memory Internal storage SSD	**2**

Question	Answer	Marks
3(c)	**Two** from: Retains the format of the original newsletter Takes up less storage space Independent of hardware and software	**2**
3(d)	**Four** from: Interesting / engaging content Use of longer sentences / not using slang / emoticons Use of some technical language More text than pictures Balanced use of white space and content Clear readable fonts Formal layout Balance of size between headings and text Contrasting colours Use suitable images More real images than cartoons	**4**

Question	Answer	Marks
4	**Six** from: **Similarities** Both have shared content Both use internet technologies / TCP-IP Both have restricted access Both sit behind a firewall **Differences** Intranet shares data within an organisation whereas extranet shares content with external users and employees Extranet is part of a company's intranet Intranet allows communication within the organisation whereas extranet allows communication with customers / suppliers Extranet can lead to more security breaches Intranet is owned is by a single organisation whereas extranet can be used by several organisations **To gain full marks candidates must have correct answers from both similarities and differences**	**6**

Question	Answer	Marks
5(a)	**Two** from: Prolonged use of a keyboard Prolonged use of a mouse Using a keyboard with a bad posture Working in a cramped workspace	2
5(b)	**Two** from: Staring at a computer screen for a long time Glare / flicker on the computer screen Dirt on the computer screen Screen brightness does not match the room light brightness Sitting too close to the screen Top of monitor not in line with the eyes	2

Question	Answer	Marks
6(a)	**One mark for each form of identification and one mark for each corresponding example given:** **Form of identification:** something the user owns: **Example:** card reader / pen drive / dongle / mobile phone **Form of identification:** something the user knows: **Example:** password / PIN / TAN / email address / CVV on back of a credit card / answers to security questions **Form of identification:** something the user has: **Example:** biometrics	4
6(b)	**Two** from: To protect user's data / credentials To reduce the possibility of unauthorised access Combines two different forms of identification Makes it more secure by adding an extra layer of security	2

Question	Answer	Marks
7(a)	**Four** from: By electronically tracking the sales of goods the industry could know when to order items… …so that the goods do not run out in the stores The POS system allows a business to identify which products are selling well / selling badly… …so products do not run out / left of the shelves Through this identification, a business can increase the order of profitable products and reduce unmarketable inventory Increases speed of transaction as the checkout staff do not need to enter the price of each item Itemised bills can be generated on screen and printed for customers It allows self check out which means less staff are needed therefore reducing staff costs	4
7(b)	**Six** from: The (bar codes on) goods are scanned at the checkout The item code is searched in the stock database When the item is found… …the number sold of that item is read The number in stock is reduced by this number If the number in stock is lower than the reorder / preset value… …then a message is sent to automatically re-order stock When the new stock arrives database is updated with the new stock Quantity available will be increased when new stock arrives Generates a report on selling trends	6

Question	Answer	Marks
8(a)	**Five** from: Enter test data Run the formula If actual output does not match expected value… …make corrections to formula Re-test the formula	5
8(b)	**One** from: Change A1 > 50 to A1 > = 50 Change A1 > 50 to A1 > 49	1
8(c)	**Two** from: Real data relating to tests that have been carried out previously To ensure that the electronic mark book should work with real data	2

Question	Answer	Marks
9(a)	**Three** from: Audio-conferencing is where two or more people… …in different locations …use technology to hold an audio call All the participants dial into a central system that connects them Removes the need to directly call each other	**3**
9(b)	**Three** from: Easier to set up Does not need specialist equipment… …therefore saves money No issue with lip syncing Less bandwidth is needed therefore reduces hanging / freeze More privacy as they do not use cameras	**3**
9(c)	Max **three** from: Microphone Speaker Telephone handset Max **two** from: Audio-conferencing software / app Internet / broadband connection	**4**

Question	Answer	Marks
10(a)	**Four** from: **CC** Cc stands for carbon copy The Headteacher would receive a copy of the message with the teacher knowing All recipients would know who is on the cc list and where it was from **BCC** Bcc stands for blind carbon copy The Headteacher would receive a copy of the message without the teacher knowing All recipients on bcc would only know where it was from to and the cc list **To gain full marks candidates must have correct answers from both cc and bcc.**	**4**

Question	Answer	Marks
10(b)	**Five** from: In forum posts are in chronological order therefore it makes it easier to find replies / data In forums easier for students to start new topics / sub-topics / forums / ask questions/give answers Topics / sub-topics cannot be created in a blog by the student Forums are moderated by an administrator Forums are checked before they are published In forums students generate the content rather than leaving messages on a named topic Many students develop the direction of the forum rather than one person In forums everyone can contribute / / In blogs only the content creator writes the blog whereas the readers / followers can comment on a blog A forum would allow private messaging as well as to all the group	**5**

Question	Answer	Marks
11	**Three** from: Used as an extra margin Adds extra space to the inside / top margin Helps to ensure the text is not obscured by the binding	**3**

Question	Answer	Marks
12	**Two** from: Inline style attributes have a higher hierarchy than external stylesheets If there is a conflict on an element then the inline style attribute will apply It applies style attributes that do not appear in the external stylesheet Inline style attributes apply to one single web page	**2**