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CAMBRIDGE
International Education

Cambridge IGCSE™

INFORMATION AND COMMUNICATION TECHNOLOGY **0417/13**

Paper 1 Theory **May/June 2026**

MARK SCHEME

Maximum Mark: 80

Published

This mark scheme contains the instructions and marking guidance that our examiners used to mark candidate responses for this component.

Before they start marking, examiners complete a standardisation process. They review a range of candidate responses and discuss the mark scheme in detail to agree which answers can and cannot be accepted. Examiners award marks where it is clear that candidate responses have met the requirements of the mark scheme. These requirements may vary between different components or different versions of the same component, depending on the exact requirements of the question and the candidate responses seen during the standardisation process.

Sometimes, our mark schemes may allow marks to be awarded to responses which contain elements that are factually incorrect or for content not covered by the syllabus. We do this in response to the demands of a specific question to support candidates and make sure that our assessments are fair. However, these allowances should not be used as a guide for teaching and learning.

We cannot discuss the mark scheme with schools, and we recommend that schools read the mark scheme together with the assessment material and the Principal Examiner Report for Teachers.

This document consists of **15** printed pages.

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General marking principles

All examiners must apply these marking principles when marking candidate responses.

1	Examiners must award marks for each response in line with: • the specific **content** defined in the mark scheme • the specific **skills** defined in the mark scheme or in the level descriptions • the **standard of response** required as exemplified by the standardisation scripts.
2	Examiners must award **whole marks** (not half marks, or other fractions).
3	Examiners must award marks **positively**. This means that: • marks are not deducted for errors or omissions • marks are awarded for correct/valid answers as defined in the mark scheme and also for **other valid answers** which go beyond the scope of the syllabus and mark scheme referring to your team leader as appropriate • the quality of spelling, punctuation and grammar are judged **only** when the mark scheme indicates that these features are **specifically assessed** in the question. However, the meaning of all responses must be unambiguous.
4	Examiners must **consistently** apply the requirements of the mark scheme and any rules for what to do when candidates have not followed instructions correctly.
5	Examiners must use the **full range of marks** defined in the mark scheme, unless limited by the quality of the candidate responses seen.
6	Examiners must award marks according to the mark scheme and **must not** award marks with grade thresholds or grade descriptions in mind.

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Annotations guidance for centres

Examiners use a system of annotations as a shorthand for communicating their marking decisions to one another. Examiners are trained during the standardisation process on how and when to use annotations. The purpose of annotations is to inform the standardisation and monitoring processes and guide the supervising examiners when they are checking the work of examiners within their team. The meaning of annotations and how they are used is specific to each component and is understood by all examiners who mark the component.

We publish annotations in our mark schemes to help centres understand the annotations they may see on copies of scripts. Note that there may not be a direct correlation between the number of annotations on a script and the mark awarded. Similarly, the use of an annotation may not be an indication of the quality of the response.

The annotations listed below were available to examiners marking this component in this series.

Annotations

Annotation	Meaning
	Omission or to indicate where a company brand name has been used
	Incorrect
FT	Follow through
Highlighter	Information copied from the text
ISW	Ignore subsequent work
LNK	Two statements are linked
MAX	Maximum number of marks that can be awarded
NAQ	Not answered question
Off-page comment	Allows comments to be entered at the bottom of the RM marking window and then displayed when the associated question item is navigated to.

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Annotation	Meaning
On-page comment	Allows comments to be entered in speech bubbles on the candidate response.
PE	Principal examiner has approved the mark
REP	Repeat
SEEN	Indicates that work/page has been seen including blank answer spaces and blank pages.
	Correct

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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.

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Mark scheme abbreviations
/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.
Read the whole sentence before awarding marks, do not mark just the word that is on the mark scheme

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Question	Answer	Marks	Notes
1	OMR RFID	**2**	Correct answer only

Question	Answer	Marks	Notes
2(a)	Two from: ROM is read only memory / RAM is read from and written to ROM stores the start-up sequence / instructions / RAM stores the data / instructions currently in use ROM is non-volatile / RAM is volatile ROM stores data permanently / RAM stores data temporarily	**2**	
2(b)	Three from: Backing storage is only permanent storage / Internal memory can be either permanent or temporary Backing storage is non-volatile only // Internal memory is both volatile or non-volatile Backing storage stores large amounts of data Backing storage is secondary storage / Internal memory is primary storage Internal memory the speed of access is faster Internal memory is directly accessed by the CPU	**3**	
2(c)	Three from: Magnetic hard disk Magnetic tape CD disc DVD disc Blu-ray disc Flash memory Cloud storage	**3**	Note: This is a closed list

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Question	Answer	Marks	Notes
3(a)	Three from: Network Interface card A hardware component It is a circuit board / Computer card Part of the motherboard	**3**	Remember: This question is about what it is
3(b)	Three from: Provides a dedicated, full-time connection to a network It communicates with the Ethernet / network / other computers / devices Transmits / receives the flow of data on the network Controls / monitors the flow of data on the network Allows resources to be shared with other computers	**3**	Remember: This question is about what it does

Question	Answer	Marks	Notes
4	Benefits Max three from: Faster data input No need to type data in More accurate data entry Drawbacks Max three from: The OCR will read any mark on the paper and interpret it as a letter / character Users will need to check the entered text which takes more time OCR can confuse letters / Cannot read accurately if the characters are unclear / May not recognise what is written Fonts have to be consistent to read correctly	**4**	

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Question	Answer	Marks	Notes
5	Positives Max five from: Tablet can be used anywhere in the school / home / It is portable Student can use their own tablet computer therefore they keep access to their own data Data is more secure if they use their own tablet computer Has a touch screen so it is easier to select data Has a touch screen so it is easier to interact with the tablet Has a small footprint Negatives Max five from: Screen is small therefore may be difficult to see the software clearly Screen size is small therefore difficult for others to share the screen Tablets can easily be lost Tablets can easily be damaged There is no external keyboard therefore entering data may be more difficult The tablet computers could run out of battery / Needs recharging	**6**	

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Question	Answer	Marks	Notes
6(a)	Four from: A way of scrambling data Only allows authorised users to understand the data Process of converting human-readable text / plaintext into ciphertext Uses an algorithm / encryption keys / decryption keys	4	Do not allow: Public key
6(b)	Two from: Proves who owns the public key Makes the public key secure to send over the internet The data is encrypted therefore needs a Public Key to de-crypt	2	

Question	Answer	Marks	Notes
7(a)	Four from: A simulation of a real system It is computer generated Uses mathematical formula to create Allows the user to predict the outcome Allows the user to experiment with different scenarios	4	
7(b)	Benefits Max five from: Faster method What-if scenarios can be set It can use formulas Can use graphs Accurate as all calculations are carried out by the computer	6	

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Question	Answer	Marks	Notes
7(b)	Drawbacks Max four from: If the original programming / formulas are not correct then results could be wrong It can create a reliance on the model The family could make decisions based on the model and not real life The model does not take everything into consideration The family need to know how to use the spreadsheet / model Takes time to set up the spreadsheet		

Question	Answer	Marks	Notes
8(a)	Three from: Helps manage the data Allows reports to be produce quickly Stores a large amount of data Quick easy to find the data for any of the patients Easy to edit / correct / add a record	**3**	
8(b)	Three from, for example: Name of patient Address of patient Contact details Date of birth Gender Medical history Next of kin	**3**	Do not allow: Patient number as it is on the question

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Question	Answer	Marks	Notes
8(c)	One mark for the validation check and one mark for the related reason Presence check The patient number cannot be null Length check The length is 6 digits only Character / type check Each digit must be a number	**4**	
8(d)	Three from: To make sure it meets the user's requirements To remove / fix any errors from the database To make sure it produces the required output Check that the software works as expected	**3**	
8(e)	Direct changeover	**1**	CAO

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Question	Answer	Marks	Notes
9(a)	One from, for example: Image Text Video	**1**	
9(b)	One from: Connects to another resource Directs the user to a different resource	**1**	
9(c)	Two from: It is a place holder for a web page It allows a user to (quickly) access another web page It stores of the URL in the browser	**2**	

Question	Answer	Marks	Notes
10(a)	Four from: Attached is loaded separately from the web page / Inline is written in the web page Attached uses separate file / Inline is part of the web page code Attached is applied to the whole web page / Inline is usually at the position where it is needed / Specific text Attached is easier to reuse on many pages / Inline has to be entered each time it is used Attached link is located in the header Inline has the higher priority	**4**	
10(b)(i)	Content / structure	**1**	CAO
10(b)(ii)	Presentation / style	**1**	CAO

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Question	Answer	Marks	Notes
11	Six from: People no longer have to continually monitor the devices Allows people to do other things No longer have to stay at home whilst device is being used Improves their lifestyle More convenient using voice activated systems Ability for devices to be turned on / off from anywhere Increases the sense of security Less manual work to do Energy saving allowing more money Devices can be turned on using a smartphone	**6**	

Question	Answer	Marks	Notes
12	Max **three** from: Content on blogs are created by the author / Forums have multiple authors Blogs are organised into categories / Forums are organised into sub-forums Blogs allow comments from users Blogs in reverse chronological order A blog is an online journal A blog tends to be informal Max **three** from: Comments in a forum are created by members Forums are threaded on-going discussions A forum tends to be a website / platform Tends to be more factual	**4**	

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Question	Answer	Marks	Notes
13	**Four** from: A flat file is on one table Delimited by commas / tabs Easy to set up Simple database Contains a primary key	**4**	

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