CAMBRIDGE
International Education

Cambridge IGCSE™

INFORMATION AND COMMUNICATION TECHNOLOGY **0417/12**

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
λ	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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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 just mark the word that is on the mark scheme

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Question	Answer	Marks	Guidance
1	**Prolonged clicking on the mouse button:** RSI **Staring…:** Eye strain / headache / neck ache / dry eyes / back ache **Sitting too close to the computer screen:** Eye strain / headache **Not using a foot rest:** DVT / foot cramp / back ache	**4**	**Remember:** Answers cannot be repeated

Question	Answer	Marks	Guidance
2	**Two** from: Starts with an = sign Contains cell references Contains operators Can contain a function It is user defined	**2**	

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Question	Answer	Marks	Guidance
3(a)	**Six** from: Faster to gain access to the museum as the visitor could have a set time to visit Faster to book tickets than go to the museum to book The museum staff can easily monitor the number of visitors entering the building this reduces overcrowding Reduces the length of queues at the museum Reduces the time to queue The visitor gets immediate feedback for the time booked Bookings can be made at any time Bookings can be made from anywhere It is easier for the museum to manage the bookings The ticket is sent electronic to a smartphone / user therefore reducing the cost of printing / sending the tickets / less chance of losing the ticket	**6**	
3(b)	QR code scanner / reader	**1**	

Question	Answer	Marks	Guidance
4(a)	**Three** from: A piece of software It can replicates itself It is a form of malware Allow max **two** from, for example: Corrupts / deletes files Can fill up the user's computer memory Stops the user accessing the computer	**3**	**Do not allow**: Switches off recycle bin as it is in the question
4(b)	**One** from: The student may copy the virus onto the backup When the data is restored, the virus will re-enter the computer system	**1**	

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Question	Answer	Marks	Guidance
4(c)	**Four** from: Download anti-virus software Keep the anti-virus software up to date Run a virus scan regularly Do not download / accept software from sources unknown to you Scan all email attachments (before downloading Scan all external memory devices before use	**4**	

Question	Answer	Marks	Guidance
5(a)	**Three** from: To structure the web page To ensure the display remains constant To make the output independent of the browser Tables can be used to combine different text alignments on the web page	**3**	
5(b)	**Three** from: It links to a location on the same page / different web page Used to link the bottom of the web page to the top (1st) in long / text-heavy pages (1) Allows users to jump to a specific part of the page without having to scroll	**3**	

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Question	Answer	Marks	Guidance
6	**Six** from, for example: Do not share personal information Do not open location to anyone Only communicate with people known to you Change passwords regularly Use a strong password Do not click on unknown links in the game Do not download suspicious games Play games within correct age range Use a VPN Avoid confusing reality with the game Report and block any abuse / cyberbullying Parents should supervise children when gaming // Use parental controls Limit the amount of time using online games Gaming is addictive set up an agreement with parents when to use Maintain privacy to control the information you share with others	**6**	

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Question	Answer	Marks	Guidance
7(a)	**Three** from: Moisture / humidity (sensor) Temperature (sensor) Wind speed (sensor) Light (sensor) Pressure (sensor) pH (sensor)	**3**	
7(b)	*Advantages* Max **five** from: There is a hard copy of the data which can be used as reference Students can take away the results Results can be analysed at a later date It is often easier to print off results and use a pen to annotate them rather than using software on a monitor Printouts can be viewed anywhere Easier for many people to read results on paper rather than round a monitor Easier to read through printouts rather than scroll down a table *Disadvantages* Max **five** from: The results are produced faster using a monitor The data produced may not be up to date Printouts could be more easily lost damaged More expensive to produce the output due to consumables Harder to manipulate / change the results The print quality may mean it is more difficult to read If there are faults in the output then the data will need to be re-printed therefore increases the cost of output / the time to output the data	**6**	

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Question	Answer	Marks	Guidance
8(a)	Max **four** from: The internet is a network of networks It is global network The internet consists of hardware The internet is a physical layer The internet is the infrastructure The internet is used to access the World Wide Web Max **four** from: The WWW is a collection of websites The WWW is accessed through browsers It uses HTTP The WWW is the software layer Application / service that runs on the internet The WWW is part of the internet	**6**	
8(b)	**www.tawara.com** – Domain **index.html** – Filename	**2**	

Question	Answer	Marks	Guidance
9(a)	**Three** from The vet moves the RFID reader over the pet The RFID reader sends radio waves to the microchip which is activated by the reader The microchip emits radio waves The data is then read by the RFID reader	**3**	
9(b)	**Three** from: Less likely to be damaged Less likely for the microchip to be lost Lasts longer due to a lack of wear and tear Easier / faster to read the details about the pet Less likely to cause harm to the pet Less likely for your pet to be stolen as it is chipped	**3**	

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Question	Answer	Marks	Guidance
10(a)	Read Only Memory / ROM	**1**	
10(b)	**Three** from: Data is temporarily stored Stores the instructions / data currently in use Volatile Written to and read from	**3**	

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Question	Answer	Marks	Guidance
11	*Similarities* Max **five** from: Both are user interfaces Both allow interaction with a computer Both allow users to input data / output data Both have a limited amount of commands Both are user friendly Both do not require to type commands *Differences* Max **five** from: GUI uses a WIMP system // Dialogue Based uses speech recognition User needs to touch the screen in a GUI // Dialogue based requires a microphone Use of a GUI is intuitive // Dialogue Based needs to be taught the language In GUI, commands do not need to be memorised // Dialogue Based the command has to be known and spoken perfectly Dialogue Based interface use natural language processing to understand / respond to user commands Dialogue Based interfaces can be affected by background noise Dialogue Based can be affected by accents Dialogue Based uses a hands-free system	**6**	

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Question	Answer	Marks	Guidance
12(a)	**Three** from: Could increase cyberbullying Students could send personal information to others outside the group Possible spread of misinformation Overuse can cause mental health issues It is addictive People not from the university may have access to the group Can distract students	**3**	
12(b)	**Three** from: Students should know how to block / report unwanted users Students should not arrange to meet an unknown online contact face to face Avoid the distribution of inappropriate images Use of appropriate language Respect the confidentiality of the personal data of other users Not share personal information Keep profiles private	**3**	

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Question	Answer	Marks	Guidance
13(a)	**Two** from: Wireless Local Area Network Group of connected devices using radio transmissions Usually within a building	**2**	
13(b)	*Benefits* Max **three** from: Share resources with all devices connected Easier to connect devices Less cost as there are less wires More flexibility on positioning of devices as cabling is not an issue Safer as there are less cables to trip over *Drawbacks* Max **three** from: Less secure than a LAN plus a valid example Interference from objects that affect the signal Data transfer rate could be slower than a LAN	**4**	
13(c)	**Two** from: Wide Area Network // WAN Local Area Network // LAN Metropolitan Area Network // MAN	**2**	**Do not allow:** WLAN as it is in the question

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