

# Cambridge IGCSE™

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**INFORMATION AND COMMUNICATION TECHNOLOGY****0417/13**

Paper 1 Theory

**May/June 2025****MARK SCHEME**Maximum Mark: 80

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**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 2025 series for most Cambridge IGCSE, Cambridge International A and AS Level components, and some Cambridge O Level components.

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

**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 descriptions 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.












**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**

| <b>Annotation</b>   | <b>Meaning</b>   |
|---|--|
|    | Omission or to indicate where a company brand name has been used   |
|   | Incorrect  |
|  | Follow through   |
| Highlighter   | Information copied from the text   |
|  | Ignore subsequent work   |
|  | Two statements are linked  |
|  | Maximum number of marks that can be awarded  |
|  | 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. |
| On-page comment   | Allows comments to be entered in speech bubbles on the candidate response.   |
|  | Principal examiner has approved the mark   |
|  | Repeat   |
|  | Indicates that work/page has been seen including blank answer spaces and blank pages.  |
|  | Correct  |

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.

| The following <b><u>must</u></b> be applied   |
|---|
| Examiners <b>must</b> ensure that annotations are placed so they can be easily seen in white space where or close to where the mark is awarded  |
| Before submitting a script please check all ticks match the marks   |
| At the end of prose answers/long answer place an annotation at the end of the answer to show that the whole answer has been read, unless a marking annotation has been placed near or at the end of the answer. |
| On any blank pages place <b>one</b> SEEN annotation   |
| Read the whole sentence before marking it   |
| If an answer is 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 and no other answer written then attempt to mark it.  |

| Question | Answer                            | Marks |
|----------|-----------------------------------|-------|
| 1        | Blu-ray disc reader<br>DVD reader | 2     |

| Question | Answer  | Marks |
|----------|---|-------|
| 2(a)     | <b>Two</b> from:<br>Allows the user to add different features to the sound<br>Generates sounds<br>Can export the sounds | 2     |
| 2(b)     | <b>Two</b> from:<br>Compilers<br>Device drivers<br>Linkers<br>Operating systems // BIOS<br>Utilities                    | 2     |

| Question | Answer  | Marks |
|----------|---|-------|
| 3        | <b>Benefits</b><br>Max <b>five</b> from:<br>Plotters work on larger sheets of paper<br>Produce high quality output<br>Plotters can print on a number of different materials<br>Drawings are very accurate<br>Multi-colour as standard<br>Draw at high speed but maintain consistency<br><br><b>Drawbacks</b><br>Max <b>five</b> from:<br>Take up a lot of physical space<br>Can be noisy<br>Expensive to maintain<br>Not as portable as a printer<br>Can be slower to output than a printer | 6     |

| Question | Answer   | Marks    |
|----------|--|----------|
| 4(a)(i)  | <b>One</b> from:<br>To ensure they store data correctly<br>To identify any errors<br>It's crucial for creating robust apps                       | <b>1</b> |
| 4(a)(ii) | <b>One</b> from:<br>To ensure the user enters data correctly   | <b>1</b> |
| 4(b)     | <b>One</b> from:<br>Data that is within the bounds of acceptability<br>Data that is reasonable / sensible<br>Data that is accepted by the system | <b>1</b> |
| 4(c)     | <b>One</b> from:<br>A<br>G   | <b>1</b> |

| Question | Answer  | Marks    |
|----------|---|----------|
| 5(a)     | <b>One</b> from:<br>To help the user learn how to use the program<br>To help with troubleshooting   | <b>1</b> |
| 5(b)     | <b>Three</b> from:<br>Error handling<br>Error messages<br>Frequently asked questions / FAQ<br>Glossary of terms<br>Hardware requirements<br>How to add records<br>How to delete / edit records<br>How to load / run / install the program<br>How to print data<br>How to save a file<br>Limitations of the system<br>Output format<br>Purpose of the system<br>Sample runs<br>Software requirements<br>Troubleshooting guide / helpline | <b>3</b> |
| 5(c)     | <b>Four</b> from:<br>Cheaper to produce than a printed booklet<br>Can be more up to date<br>Can be updated more easily<br>Faster to search for information digitally<br>Can use hyperlinks to other related websites<br>Can contain multi-media   | <b>4</b> |

| Question | Answer   | Marks    |
|----------|--|----------|
| 6(a)     | <b>Three</b> from:<br>Use a wrist rest<br>Take regular breaks<br>Use an ergonomic keyboard / ergonomic mouse<br>Use voice activated software   | <b>3</b> |
| 6(b)     | <b>Three</b> from:<br>Use an anti-glare screen<br>Look away from the screen frequently<br>Have eyes tested regularly<br>Use blue light lens glasses<br>Adjust screen brightness to the brightness of the room<br>Keep the screen free from dust and dirt | <b>3</b> |

| Question | Answer  | Marks    |
|----------|---|----------|
| 7(a)     | <b>Three</b> from:<br>It is a service<br>Completely controlled by Tawara cars<br>Restricted access<br>Private clouds tend to be free for users  | <b>3</b> |
| 7(b)     | <b>Stored</b><br>Max <b>three</b> from:<br>Data is uploaded from users<br>Data saved in remote servers<br>Backed up to other remote servers<br>Updated files are saved<br><br><b>Managed</b><br>Max <b>three</b> from:<br>Allows users / programmers to download data from the cloud<br>Administrators control the data stored<br>Data is synched so the most up to date file is presented<br>Changes are tracked | <b>4</b> |

| Question | Answer  | Marks |
|----------|---|-------|
| 8        | <p><b>Benefits</b><br/> Max <b>four</b> from:<br/> Produces fast / accurate results<br/> They can calculate faster than a human<br/> They can calculate more accurately than a human<br/> Can easily produce a number of different scenarios<br/> Cheaper to use a computer than employ lots of staff to model<br/> Easily changed to give more accurate / more up to date forecasts</p> <p><b>Drawbacks</b><br/> Max <b>four</b> from:<br/> Results can be unreliable<br/> The cost of the hardware needed to set up of system would be very high<br/> Many different models can be produced<br/> Humans become technology reliant<br/> Cannot include all the variables</p> | 5     |

| Question | Answer  | Marks |
|----------|---|-------|
| 9(a)     | <p><b>Three</b> from:<br/> Data entry is faster<br/> Data entry can be more accurate<br/> Less storage space required<br/> Faster to search for data<br/> Quicker identification of countries<br/> Easier to validate</p>   | 3     |
| 9(b)     | <p><b>Four</b> from, for example:<br/> Compare test results from the new system with the old<br/> Comparison of the final solution with the original user requirements Identifies improvements to the system<br/> Evaluate the user's responses to using the system<br/> Measure the time taken to complete the task and compare with the old system<br/> The appropriateness of the solution<br/> The efficiency of the solution</p> | 4     |



| Question | Answer  | Marks    |
|----------|---|----------|
| 10(a)    | <b>Two</b> from:<br>Personal data can be used to identify an individual<br>Personal data can be known by others<br>Sensitive data is protected by laws<br>Disclosure of sensitive data can be used against a person | <b>2</b> |
| 10(b)    | <b>Two</b> from, for example:<br>Address<br>Bank account number<br>Date of birth<br>Email address<br>Gender<br>Name<br>National Insurance number<br>Nationality<br>Telephone number                                 | <b>2</b> |
| 10(c)    | <b>Two</b> from, for example:<br>Criminal record<br>Medical history<br>Membership of a trade union<br>Political opinions<br>Racial origin<br>Religious beliefs<br>Sexual orientation                                | <b>2</b> |

| Question | Answer  | Marks    |
|----------|---|----------|
| 11(a)    | <b>Six</b> from, for example:<br>Anyone can create a website<br>Websites may contain inaccurate information<br>Some company websites may advertise one product<br>The final part of a URL could identify a website's reliability<br>Comparing data found on one website with other websites<br>Checking the endorsement of the website<br>Check the date of the last update on the site<br>The website contains links to other authorised websites<br>Can read reviews on comparison sites<br>Study the reviews to see if they are all the same<br>Can look at reputable sites<br>Some websites have fake reviews, all positive | <b>6</b> |
| 11(b)    | <b>One</b> from:<br>Compress the file<br>Save it as a pdf   | <b>1</b> |
| 11(c)(i) | <b>Two</b> from:<br>Splits a document into two parts<br>Enables the user to apply different formatting to each part<br>Allows the document to be structured   | <b>2</b> |

| Question  | Answer  | Marks    |
|-----------|---|----------|
| 11(c)(ii) | <b>Two</b> from:<br>Extra margin<br>Adds space to the margins<br>It helps ensure that text isn't obscured by the binding<br>Gives extra space for binding | <b>2</b> |

| Question | Answer  | Marks    |
|----------|---|----------|
| 12       | <b>Four</b> from:<br>Relational database uses two or more tables<br>Relational databases have relationships<br>Relational database use primary keys <u>and</u> foreign keys<br>Allows complex searches / complex reports<br>Uses referential integrity<br><br>Flat files <u>only</u> use primary keys<br>Flat file is a simple database<br>Flat files have data redundancy<br>Flat files have more duplication of data leading to data entry errors | <b>4</b> |

| Question  | Answer   | Marks    |
|-----------|--|----------|
| 13(a)     | <b>Three</b> from:<br>A function is part of a formula<br>A function uses a reserved name<br>The operation of a function is built into the software<br>Carries out a specific task<br><br>A formula starts with an = sign<br>A formula is written by a user | <b>3</b> |
| 13(b)(i)  | <b>One</b> from, for example:<br>SUM / AVERAGE<br><br>Mark any valid function if it is correct   | <b>1</b> |
| 13(b)(ii) | <b>One</b> from:<br>Correct example =A1+B1, =SUM(A1:B5)<br><br>Mark any valid formula if it is correct   | <b>1</b> |
| 13(c)(i)  | <b>One</b> from:<br>The cell reference is relative to the location of the cell<br>When a formula is copied or filled to another cell, the cell references within the formula adjust based on the new location  | <b>1</b> |
| 13(c)(ii) | <b>Two</b> from:<br>If the cell is replicated (1st) the cell reference will change (1)<br>The reference may not point to the correct cell  | <b>2</b> |

| Question | Answer   | Marks    |
|----------|--|----------|
| 14       | <b>Two</b> from:<br>Behaviour / scripting<br>Content / structure<br>Presentation / style | <b>2</b> |