CAMBRIDGE
International Education

# Cambridge IGCSE™

**ENVIRONMENTAL MANAGEMENT** **0680/13**

Paper 1 Theory **October/November 2025**

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

**PUBLISHED**

## 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.

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|---|
| GENERIC MARKING PRINCIPLE 5:<br><br>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:<br><br>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. |

**Science-Specific Marking Principles**

| | |
|---|---|
| 1 | Examiners should consider the context and scientific use of any keywords when awarding marks. Although keywords may be present, marks should not be awarded if the keywords are used incorrectly. |
| 2 | The examiner should not choose between contradictory statements given in the same question part, and credit should not be awarded for any correct statement that is contradicted within the same question part. Wrong science that is irrelevant to the question should be ignored. |
| 3 | Although spellings do not have to be correct, spellings of syllabus terms must allow for clear and unambiguous separation from other syllabus terms with which they may be confused (e.g. ethane / ethene, glucagon / glycogen, refraction / reflection). |
| 4 | The error carried forward (ecf) principle should be applied, where appropriate. If an incorrect answer is subsequently used in a scientifically correct way, the candidate should be awarded these subsequent marking points. Further guidance will be included in the mark scheme where necessary and any exceptions to this general principle will be noted. |
| 5 | <u>'List rule' guidance</u><br><br>For questions that require ***n*** responses (e.g. State **two** reasons …):<br><br>• The response should be read as continuous prose, even when numbered answer spaces are provided.<br>• Any response marked *ignore* in the mark scheme should not count towards ***n***.<br>• Incorrect responses should not be awarded credit but will still count towards ***n***.<br>• Read the entire response to check for any responses that contradict those that would otherwise be credited. Credit should **not** be awarded for any responses that are contradicted within the rest of the response. Where two responses contradict one another, this should be treated as a single incorrect response.<br>• Non-contradictory responses after the first ***n*** responses may be ignored even if they include incorrect science. |

6 Calculation specific guidance

Correct answers to calculations should be given full credit even if there is no working or incorrect working, **unless** the question states 'show your working'.

For questions in which the number of significant figures required is not stated, credit should be awarded for correct answers when rounded by the examiner to the number of significant figures given in the mark scheme. This may not apply to measured values.

For answers given in standard form (e.g. $a \times 10^n$) in which the convention of restricting the value of the coefficient ($a$) to a value between 1 and 10 is not followed, credit may still be awarded if the answer can be converted to the answer given in the mark scheme.

Unless a separate mark is given for a unit, a missing or incorrect unit will normally mean that the final calculation mark is not awarded. Exceptions to this general principle will be noted in the mark scheme.

7 Guidance for chemical equations

Multiples / fractions of coefficients used in chemical equations are acceptable unless stated otherwise in the mark scheme.

State symbols given in an equation should be ignored unless asked for in the question or stated otherwise in the mark scheme.

## 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 |
|---|---|
|  | correct point or mark awarded |
|  | incorrect point or mark not awarded |
|  | information missing or insufficient for credit |
|  | incorrect or insufficient point ignored while marking the rest of the response |
|  | contradiction in response, mark not awarded |
|  | benefit of the doubt given |
|  | error carried forward applied |
|  | First answer |
|  | response has not answered question |
|  | power of ten error |

| Annotation | Meaning |
|---|---|
| SEEN | point has been noted, but no credit has been given<br>or blank page seen |
| TV | response is too vague or there is insufficient detail in response |
| REP | repetition in response |
|  | to show a correct point but where the number of points does not relate to the number of marks i.e. 3 correct = 2 marks |
|  | correct awarding one mark from marking point or marking group 1.<br>similar numbered ticks are used for marking point or marking groups 2, 3, 4, etc. |
| Highlighter | Highlight |

| Question | Answer | Marks |
|---|---|---|
| 1(a) | cooling / crystallisation; | 1 |
| 1(b) | igneous: granite / basalt;<br>sedimentary: limestone / shale; | 2 |
| 1(c) | igneous or sedimentary rocks underground;<br>(increasing) pressure and heat; | 2 |

| Question | Answer | Marks |
|---|---|---|
| 2(a) | *Any one from:*<br>loss of topsoil;<br>loss of vegetation; | 1 |
| 2(b) | *Any three from:*<br>**M1** crop rotation;<br>**M2** organic fertiliser;<br>**M3** resistant crops;<br>**M4** trickle drip irrigation;<br>**M5** rainwater harvesting;<br>**M6** retain soil moisture;<br>**M7** managed grazing; | 3 |

| Question | Answer | Marks |
|---|---|---|
| 3(a)(i) | photosynthesis; | 1 |
| 3(a)(ii) | orca; | 1 |
| 3(a)(iii) | trophic level; | 1 |

| Question | Answer | Marks |
|---|---|---|
| 3(b) | *Any two from:*<br>**M1** lost as heat;<br>**M2** idea of only 10% of energy passed between levels / 90% is lost;<br>*lost through:*<br>**M3** respiration;<br>**M4** digestion;<br>**M5** (excreted) waste (products);<br>**M6** movement;<br>**M7** death / decomposition;<br>**M8** maintaining body temperature / thermoregulation;<br>**M9** feeding / consumers do not consume the whole organism; | **2** |
| 3(c) | *Any three from:*<br>**M1** oil covers seaweed;<br>**M2** seaweed (dies because it) cannot photosynthesis;<br>**M3** loss of food / food chain collapses;<br>**M4** animals ingest oil;<br>**M5** bioaccumulates;<br>**M6** oil builds up in tissue of organisms;<br>**M7** oil is toxic;<br>**M8** oil clogs gills of fish / oil covers fish; fish suffocate (and die); | **3** |

| Question | Answer | Marks |
|---|---|---|
| 4(a) | oxygen;<br>carbon dioxide; | **2** |
| 4(b) | glucose; | **1** |

| Question | Answer | Marks |
|---|---|---|
| 5(a)(i) | Increase; | **1** |
| 5(a)(ii) | 760; | **1** |
| 5(a)(iii) | One year has a high / low number of wildfires / idea of an outlier; | **1** |
| 5(b) | **M1** the energy is prevented from leaving / trapped in the atmosphere;<br><br>*Any four from:*<br>**M2** Solar radiation(UV) enters atmosphere;<br>**M3** absorbed at the surface;<br>**M4** most re emitted from the earths surface;<br>**M5** radiated back to atmosphere;<br>**M6** energy is absorbed by the greenhouse gasses;<br>**M7** named gas e.g. methane / water vapour / carbon dioxide;<br>**M8** so less radiates to space; | **5** |
| 5(c) | *Any three from:*<br>**M1** drought / desertification;<br>**M2** crops stop growing;<br>**M3** so loss of income;<br>**M4** death of stock animals;<br>**M5** famine;<br>**M6** flooding;<br>**M7** too hot / extreme weather;<br>**M8** rise in sea levels; | **3** |
| 5(d) | *Any three from:*<br>**M1** reduce use of fossil fuels;<br>**M2** increase energy efficiency;<br>**M3** carbon capture and storage;<br>**M4** reduce carbon footprint;<br>**M5** transport policies;<br>**M6** international agreement;<br>**M7** taxation; | **3** |

| Question | Answer | Marks |
|---|---|---|
| 6(a) | **A**: evaporation;<br>**B**: condensation;<br>**C**: infiltration; | **3** |
| 6(b)(i) | *Any two from:*<br>**M1** bacteria / cholera / typhoid;<br>**M2** soil;<br>**M3** feet;<br>**M4** faeces / animal waste;<br>**M5** agricultural chemicals e.g. fertiliser / insecticide; | **2** |
| 6(b)(ii) | *Any two from:*<br>**M1** treated with chlorine;<br>**M2** delivered in closed pipes / better infrastructure;<br>**M3** more wealth in urban areas / more developed area / more money / taxes available;<br>**M4** (more people make it) easier to put pressure on politicians to improve infrastructure;<br>**M5** more sewage treatment / sanitation / separation of clean drinking water and sewage disposal; | **2** |
| 6(c)(i) | mosquito; | **1** |
| 6(c)(ii) | **M1** biting human (and feeding on blood);<br>**M2** transferring malarial (parasite) / plasmodium; | **2** |
| 6(c)(iii) | *Any one from:*<br>reduce the breeding ground (of the vector / X / mosquito);<br>removes stagnant / still water; | **1** |
| 6(c)(iv) | *Any three from:*<br>**M1** nets;<br>**M2** antimalarial drugs;<br>**M3** repellents;<br>**M4** spray houses;<br>**M5** long sleeves / trousers / cover body (after dark);<br>**M6** vaccination; | **3** |

| Question | Answer | Marks |
|---|---|---|
| 6(d)(i) | *Any three from:*<br>**M1** north and south of the equator;<br>**M2** mostly between the tropics;<br>**M3** larger area in Africa than South America;<br>**M4** / **5** named region e.g. malaria in India / Madagascar; | **3** |
| 6(d)(ii) | cases increase in northern hemisphere / north and south / beyond the tropics; | **1** |

| Question | Answer | Marks |
|---|---|---|
| 7(a)(i) | *Any one from:*<br>volatile organic compounds / vehicle emissions; | **1** |
| 7(a)(ii) | *Any three from*:<br>**M1** temperature inversion;<br>**M2** temperature increase with height;<br>**M3** warm air traps the cold air at the surface;<br>**M4** smog is not blown away / still air;<br>**M5** due to high pressure;<br>**M6** warm air less dense; | **3** |
| 7(b)(i) | **M1** sectors in clockwise rank order;<br>**M2** largest first starting at 'noon';<br>**M3** correct plotting;<br>**M4** key completed and matches sector shading; | **4** |
| 7(b)(ii) | recycle more waste / landfill / laws to prohibit burning; | **1** |

| Question | Answer | Marks |
|---|---|---|
| 8(a)(i) | China;<br>USA; | **2** |
| 8(a)(ii) | 39 : 4; | **1** |
| 8(a)(iii) | *Any two from:*<br>**M1** More reserves found;<br>**M2** increased population;<br>**M3** increased demand;<br>**M4** improved method of extraction;<br>**M5** other energy resources now more expensive; | **2** |
| 8(b) | *Any three from*:<br>**M1** plants die;<br>**M2** covered in sediment;<br>**M3** heat and pressure;<br>**M4** over millions of years; | **3** |
| 8(c) | *Any two from:*<br>apparatus 1:<br>scale too large / volume will not be accurate;<br>opening for the rain is too small / idea of will not catch all of rain falling above it;<br>more likely to fall over; | **2** |
| 8(d)(i) | *Any two from:*<br>volume of rainfall will not be accurate for location (at X);<br>leaves intercept rainfall (at X);<br>debris from tree / insects enter apparatus (at X); | **2** |
| 8(d)(ii) | Day 2 / pH 8.7; | **1** |

| Question | Answer | Marks |
|---|---|---|
| 8(e) | *Level of response marked question:*<br><br>Level 3 [5–6 marks]<br>**A coherent response is given that develops and supports the candidate's conclusion using relevant details and examples.**<br>Indicative content and subject-specific vocabulary are generally used precisely and accurately.<br>Good responses are likely to present a balanced evaluation of the statement.<br><br>Level 2 [3–4 marks]<br>**Development and support of the conclusion is evident, though the response may lack some coherence and / or detail.**<br>Irrelevant detail may be present.<br>Indicative content and subject-specific vocabulary are used but may lack some precision and / or accuracy.<br>Responses contain evaluation of the statement, but this may not be balanced.<br><br>Level 1 [1–2 marks]<br>**The response may be limited in development and / or support.**<br>Contradictions and / or irrelevant detail may be present.<br>Indicative content and subject-specific vocabulary may be limited or absent.<br>Responses may lack structure or be in the form of a list. Evaluation may be limited or absent.<br><br>No response or no creditable response [0 marks]<br><br>*Acid rain will no longer be a problem if all countries stop burning coal.*<br>other fuel sources still contain sulfur so produce sulfur dioxide;<br>volcanoes emit sulfur dioxide;<br>vehicles release NOX at high temperatures;<br>examples of reasons why these sources will increase;<br>industry still releases acid compounds;<br>increase demand as population increases;<br>effects of acid rain still need to be dealt with;<br>e.g. acid in lakes;<br>defoliation of trees;<br>impact on nutrient uptake by plants;<br>due to soil acidification; | **6** |