CAMBRIDGE
International Education

Cambridge International AS & A Level

THINKING SKILLS **9694/42**

Paper 4 Applied Reasoning **May/June 2026**

MARK SCHEME

Maximum Mark: 50

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.

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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
✓	Correct response. Use when a mark has been achieved in **Q1**, **2** and **3**.
✗	Incorrect (part of a) response
NGE	Not good enough. Use wherever such a judgment has been made.
BOD	Benefit of doubt
S	Strand of reasoning
CON	Main Conclusion
I	Intermediate Conclusion
AE	Additional argument element in **Q1** / Argument Element in **Q4**
U	Creditworthy material in the Use of Documents skill
3	Use stamps 1–5 alongside U to indicate which document has been referenced

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Annotation	**Meaning**
EVAL	Evaluation of documents
C	Comparison of or inference from documents
Q	Creditworthy material in the Quality of Argument skill
T	Treatment of counter-position
L2	Level achieved. Add annotation at the end of **Question 4** in the order of S, U, Q from left to right.
+	Strong demonstration of a skill Higher mark within a level awarded
–	Minor demonstration of a skill Flaw or weakness Lower mark within a level awarded
SEEN	Examiner has seen that the page contains no creditworthy material Use to annotate blank pages
Highlighter	Use to draw attention to part of an answer

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Question	Answer	Marks
1(a)	**State the main conclusion of the argument.** We need to generate more electricity from nuclear power.	**1**
1(b)	**Identify two intermediate conclusions in paragraphs 3 to 4.** *1 mark for each correctly identified IC (max 2)* *Mark only the first three answers given* • Nuclear power is gentle on the environment. • (Therefore,) if we don't increase nuclear generated electricity we can expect a reduction of human life expectancy. • (So) worries about nuclear waste are unfounded.	**2**

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Question	Answer	Marks
1(c)	**Analyse the structure of the reasoning in paragraph 1.** *Award 1 mark for each of the following [max 3]:* R1 The world's population is increasing R2 (and) it needs to be supplied with energy. R3 Traditional electricity generation has relied on the burning of fossil fuels, Ex (such as) coal, oil and gas, R4 (but) this has caused the global climate to change dangerously. C We need to change our approach to energy supply, and quickly. A1 We are still using the traditional methods of energy supply. A2 The speed of climate change demands quick action. A3 The speed of population growth demands quick action. A4 Sources of energy which would not cause climate change exist / are possible. *Allow R1+R2 and/or R3+R4 to be expressed as a single reason for 1 mark* *Award 1 mark for identifying two relationships between elements,* *or 2 marks for identifying three relationships between elements, e.g.* • R1/R2/R3 supports C • R4 supports C • R1, R2, R3 (and R4) support C jointly • Ex illustrates R3 • A1 is needed for R3 to support C • A2 is needed for R4 to support C • A3 is needed for R1 to support C • A4 is needed for R4 to support C *Reference to the start and end of elements must be unambiguous.* *Sample 5-mark answer* The conclusion of the paragraph is 'We need to change our approach to energy supply, and quickly' **[1]**. This is supported by several reasons, including, 'Traditional energy generation has relied on the burning of fossil fuels', **[1]** **[r]** as long as we assume that these traditional sources are still in use **[1]** **[1r]**. Reference to 'coal, oil and gas' is an example that illustrates this reason **[1r]** **[1]**.	**5**

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Question	Answer	Marks
1(d)	**Identify an unstated assumption required by the reasoning in paragraph 1.** *1 mark for a version of either of the following:* • We are still using the traditional methods of energy supply. • The severity / speed of climate change demands quick action. • The speed of population growth demands quick action. • Sources of energy which would not cause climate change exist / are possible.	**1**

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Question	Answer	Marks
2(a)	**Identify and explain three flaws and/or weaknesses in the reasoning in paragraphs 4 to 5.** *2 marks for a developed version of any of the following points* *1 mark for a weak or incomplete version of any of the following points [max 6]* *Paragraph 4:* • *Appeal to history* – having caused few problems in the past is not sufficient support upon which to base a claim that current worries are unfounded • *Reliance on questionable assumption* – that the rate at which radiation diminishes is sufficiently fast for it not to be a problem • *Equivocation* – the author uses the phrase 'low-level' to imply that background radiation and radioactive waste have a similar level of radioactivity • *Reliance on questionable assumption* – that high-level radioactive waste which is stored deep underground is not dangerous • *Reliance on questionable assumption* – that the storage capacity would be sufficient for the waste produced *Paragraph 5:* • *Personal attack (ad hominem)* – fears about the possibility of accidents are dismissed on the basis of the motivation of those making such claims • *Straw man* – in dismissing fears on the basis that no global catastrophe has occurred the author implies that those with the opposing view do not fear smaller scale nuclear incidents • *Reliance on questionable assumption* – that no plants built in the 1970s are still in use • *Reliance on questionable assumption* – that improvements in technology mean such incidents are not likely to happen again	**6**
2(b)	**Identify and explain the causal flaw in paragraph 6.** The reasoning relies on the author believing that the reason French electricity bills are lower than German ones is *because* they are generated by nuclear power **[1]**. This is a *cum hoc* fallacy **[1]**. There may be other reasons for lower electricity bills in France **[1]**, for example, state subsidies **[1]** (less need for heating, etc.).	**2**

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Question	Answer	Marks
3(a)	**The table given in Document 4A is intended to support the claim that 'nuclear power generation is safe.'** **Identify three reasons why the support given by the table is weak.** *1 mark each for any of the following points [max 3]* • The nuclear industry is compared only with two other industries, which is not enough from which to draw a conclusion • …and the two other industries shown may have particularly high accident rates • Comparison with other electricity generation industries would have been more appropriate • There is no indication of the relative seriousness of accident – it could be that the nuclear industry has a higher proportion of serious injuries or fatalities • The definition of 'safe' is not clear: it appears to be limited to industry workers and does not include safety of the general public / does not appear to include long-term effects. • The choice of category names may have been cynical – they could allow some injuries relating to nuclear power to be excluded / counted under one of the other categories	**3**
3(b)	**The graph given in Document 4B is intended to support the claim that 'negative publicity about safety accidents at nuclear power plants results in fewer nuclear power plants being built worldwide'.** **Identify three reasons why the support given by the graph is weak.** *1 mark each for any of the following points [max 3]* • It seems plausible (from the shape of the graph) that these reductions are merely part of a long-term downward trend • Two is too small a sample from which to generalise • It may be that there just happened to be more construction scheduled for those two 5-year periods than the other periods • Since it is likely that the planning and preparation stages before construction begins would take longer than 5 years, it would be the construction of power plants longer than 5 years after the accident that wouldn't happen, rather than those just about to be constructed • Since it is likely that the planning and preparation stages before construction begins would cost a lot of time and money, it seems unlikely that construction would be cancelled due to an accident elsewhere	**3**

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Question	Answer	Marks
4	**'More of the world's electricity should be generated from nuclear power.'** ***Example high-scoring answers*** *Argument to support (796 words)* Documents 1 and 2 are written from opposing points of view and yet they both acknowledge that climate change is a pressing concern and that we need to do something to lower carbon emissions and soon. Therefore, more of the world's electricity should be generated from nuclear power. Nuclear power is a form of electricity generation with very low carbon emissions, as claimed in Docs 1, 2 and 3. Although D1 appears biased in favour of nuclear power and D3 might have some vested interest to promote its benefits, D2 most certainly has neither, so the credibility of this claim is high. All of these documents put nuclear on a par with the best forms of low-carbon renewable energy. So, although more nuclear power might not quite reverse climate change, despite D1's hyperbolic claim, it would certainly contribute to its slowing. It also seems that nuclear power can generate electricity at low cost. This is stated in D1 and can be inferred from the table in D3. Although both documents suffer from some credibility issues, the authors of the upper table in D3 are at least likely to have some ability to know and some expertise on the matter. It could be that set-up costs have been deliberately ignored in the production of these numbers, but it seems unlikely that the nuclear industry would want to leave themselves open to such obvious questioning of their credibility by doing that, particularly when the clearly biased D1 admits to high set-up costs. It is of note that the very high figure for solar power implies that set-up costs have been considered. The two counterclaims in D2 lack credibility because both claims are from 'green' organisations that have a traditional bias against nuclear power.	**27**

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Question	Answer	Marks
4	The documents are littered with examples of accidents at nuclear facilities and many people are genuinely worried about safety. However, any industry has safety issues and the fact that Chernobyl is mentioned in Docs 1, 3, 4 and 5 and Fukushima is mentioned in Docs 1, 2, 4 and 5 suggests that the number of such accidents in the nuclear industry is low – in fact, D5 states that these are the only times a major accident has happened. It is easy to see how the information in D5 might worry some people and might provide for some scaremongering newspaper headlines. However, the public perception of danger is likely to drive efforts to increase safety in response. Moreover, D1's suggestion that technology can reduce the number of safety issues is not just an appeal to progress. Technology has made modern cars much safer than cars from 70 years ago. Doc 2's figure of 1.5% of plants having some degree of meltdown is less significant than might appear at first glance. Most of this 1.5% are likely to have happened in the early days of nuclear power generation – I suspect the modern figure is much lower – and 'some sort of meltdown' could refer to very minor issues. The peer-reviewed report in a respected journal presented in D3 has, despite the platform on which it appears, very high credibility in terms of expertise, ability to know and reputation. So, we can be fairly confident in the validity of figures that suggest a very low number of deaths from nuclear power. These figures are consistent with those in D4A, albeit that no data for other power generation industries have been presented. Overall, nuclear power generation is a safe activity. If D2 and the *ad hominem* comment in D1 are anything to go by, environmental groups seem to favour renewable sources of energy, such as solar and wind. D2 claims that wind and solar can be installed much more quickly than nuclear. D2 even attempts to claim subterfuge on the part of the nuclear industry by citing a difference between the industry's figures for development time and some independent figures. However, the differences are not that big, so the claims of skulduggery seem exaggerated, which taints some of the other claims in D2. Furthermore, we really need to think about our electricity-generating needs in the long term, so whether it is 6 or 9 years for nuclear and the fact that nuclear might take a few more years than wind is of little importance. In fact, nuclear power has environmental and other advantages compared to renewables. D1 mentions land use by solar and wind as being an issue. Even if you don't believe the nonsense about wind turbines killing birds, habitat loss is a major cause of extinction and not many plants can grow underneath a solar panel. Moreover, wind and solar are heavily weather dependent, whereas nuclear power can supply energy day and night, 365 days a year. More of the world's electricity should be generated from nuclear power. *Argument to challenge (788 words)* Documents 1 and 2 take opposing positions and yet they both acknowledge that lowering carbon emissions is a pressing concern. However, nuclear power is not the best way to do this.	

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Question	Answer	Marks
4	D1 is clearly biased, as evidenced by its ridiculously exaggerated claim about reversing climate change, so its claim that nuclear produces less carbon than solar power could be a cherry-picked example. Likewise, a nuclear power generation company is likely to have a vested interest to present data in D3 that makes nuclear power seem attractive. However, D2 is certainly not pro-nuclear so this corroboration across 3 documents means that nuclear power probably does not produce much carbon. However, the table in D3 shows that other forms of low-carbon electricity generation exist, and these options have advantages over nuclear. The correlation cited in D1 between countries with high nuclear power use and low carbon emissions could just mean that they import coal-generated electricity from other places. Renewable sources of energy are a better way to generate electricity. They are 'low-carbon' (even the biased D3 agrees that wind releases less carbon than nuclear). They are also cheaper. Cost might seem like a vulgar concern when saving the planet, but it is an important practical consideration – if the money's not there, it won't happen. D2 presents credible figures from a report, which is likely to have been compiled by experts with some ability to know, which shows that nuclear is much more expensive than wind and solar and D2 also states that the costs of nuclear are increasing, unlike renewables. These figures contradict those in D3 but D3's credibility is weak. It is possible that the upper table in D3 represents only running costs for nuclear power, omitting the exorbitant set-up costs. The France–Germany cost differential cited in D1 could have many causes other than the relative proportion of nuclear electricity. D2 and D1 agree that climate change needs to be tackled quickly but the most unbiased figures for the development time for a nuclear power plant are close to 10 years. Another decade of global warming could be catastrophic. So the long lag between planning and operation for nuclear power means it is not a rapid enough response to the climate crisis. Wind and solar power, as mentioned in D2, (and presumably other renewables) can be got up and running much more quickly. Nuclear power is not better for the environment than renewable energy. The environmental credibility of D1 is severely weakened by the *ad hominem* attack on environmentalists in paragraph 7 and its claim about land use is highly questionable. Most wind farms are offshore – i.e., in the sea, and large solar farms tend to be situated in desert areas where there is little wildlife and where you cannot grow crops. D1 implies that nuclear is the only form of energy production that does not cause air pollution, a fact which is evidently wrong when one considers that wind power and solar energy release no gases at all.	

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Question	Answer	Marks
4	D5 lists some of the types of safety event that might occur at a nuclear power plant. Whether or not such events are rare, and rarer now than in the past (as D1 suggests), Docs 1, 4 and 5 agree that there was a Level 7 accident in 2011, which is not that long ago. So they still happen, and their consequences could be severe. Cooling water is clearly an issue with regard to nuclear power – it is mentioned in Docs 2 and 5. It also seems to have been responsible for a Level 7 accident in D5 and is likely to become more of an issue in the future, according to D2. Just one more Level 7 accident could have devastating consequences. The research which led to the lower table in D3 suggesting nuclear power is safe has high credibility in terms of expertise etc., so we can assume the figures are correct. However, it is on a biased, low-credibility platform, so there might have been some careful selection of which data to present, and the absence of any data on wind or solar power suggests that this might well be the case. Rounding to the nearest whole number means that the figure for nuclear could actually be 0.49. Indeed, judging by the references to Tokaimura and Goiana, which are within the timeframe of the D3 data, the true figure is certainly not 0. Although D4A appears at first glance to provide some corroboration for these safety claims, nuclear is not being compared with any renewable energy industries. The safety concerns about nuclear power are legitimate. For reasons of safety, cost and speed of implementation, more of the world's electricity should be generated from renewable, not nuclear power.	

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Level	Structure*		Use of documents		Quality of argument	
	• Conclusion (MC) • Intermediate conclusions (ICs) • Strands of reasoning • Examples or evidence • Original analogy • Hypothetical reasoning		• Reference to documents • Evaluation of documents • Comparison of documents (corroboration or contradiction) • Inference from documents		• Comprehensive and persuasive argument • Logical order of reasoning • Relevant material • Treatment of counter-positions • Absence of flaws and weaknesses • Non-reliance on rhetorical devices	
3	Excellent use of structural elements: • Precise conclusion • Multiple valid explicit ICs that support the MC • Multiple clear strands of reasoning • Some effective use of other argument elements to support reasoning	7–9	Excellent use of documents: • Judicious reference to at least three documents • Multiple valid evaluative points, clearly expressed and used to support reasoning • Some comparison of or inference from documents	7–9	Excellent quality of argument: • Sustained persuasive reasoning • Highly effective order of reasoning • Very little irrelevant material • Key counter-position(s) considered with effective response • Very few flaws or weaknesses • No gratuitous rhetorical devices	7–9
2	Good use of structural elements: • Clear conclusion • More than one valid IC (may be implied) • Some strands of reasoning • Some use of other argument elements	4–6	Good use of documents: • Relevant reference to at least two documents • At least two evaluative points used to support reasoning • May be some comparison of or inference from documents	4–6	Good quality of argument: • Reasonably persuasive reasoning • Unconfused order of reasoning • Not much irrelevant material • Some counter-position(s) considered with some response • Not many flaws or weaknesses • May be some reliance on rhetorical devices	4–6
1	Some use of structural elements: *There may be:* • Conclusion • Implied ICs • Some strands of reasoning • Some use of other argument elements	1–3	Some use of documents: *There may be:* • Reference, perhaps implicit, to a document • Some evaluation of a document • Some comparison of or inference from documents	1–3	Some quality of argument: *There may be:* • Some support for the conclusion • Some order to the reasoning • Some relevant material • Some counter-position(s) considered with some response	1–3
0	No creditable response	0	No creditable response	0	No creditable response	0

*Cap mark for Structure at 3 if no conclusion given

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