



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
General Certificate of Education  
Advanced Subsidiary Level and Advanced Level

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**THINKING SKILLS**

**9694/02**

Paper 2 Critical Thinking

**For Examination from 2011**

SPECIMEN MARK SCHEME

**1 hour 45 minutes**

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**MAXIMUM MARK: 45**

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This document consists of **13** printed pages and **1** blank page.



1 (a) How relevant is the email from Graham Titchfield to Andy Ellis? [2]

It is relevant because it supports/corroborates AE's account of events to a certain extent. It shows that GT did interfere and suggest another supplier/it shows GT only suggested another supplier rather than being forceful (but doesn't go into details of the subsequent phone call mentioned by AE).

It does not show that he said he would order the tiles himself. It shows that GT is brusque and perhaps difficult.

One accurate point (well developed) (2)

Two accurate points (not well developed) (2)

One accurate point (not well developed) (1)

[Max 2]

(b) Whose evidence is more reliable, Derek Hengst's or Ka Yan Law's? Justify your answer. [5]

DH has twenty years' experience as a roofer, so should know what he is talking about when he comments on the quality of the roof timbers.

Those twenty years have all been working for the same man, which suggests that AE's assessment of the men he sent is reliable at least as far as DH is concerned, which increases the credibility of his claim that the roof timbers were rotten.

Twenty years of working with AE should give him the knowledge of AE to be able to say that he is calm and well organised so this claim is credible.

However it is only character reference, not specific evidence that AE did not shout.

DH also has a vested interest to lie to support his employer to ensure continuing employment/make sure he gets paid.

KYL's evidence is a little contradictory; if the men were banging and crashing they were probably working. So she is unreliable from that point of view.

KYL seems prejudiced against the builders and biased in favour of the residents for reasons of social snobbery, which makes her less reliable.

Her evidence that Graham wouldn't shout is based only on prejudice/speculation.

There is no reason to suppose she was lying about shouting on 23 June.

So, on the whole, DH's evidence seems more reliable than KYL's.

Level 3: 4–5 marks – **strong support** given to candidate's conclusion grounded in solid understanding of credibility issues.

*e.g. 'Derek Hengst's evidence is more reliable than Ka Yan Law's even though he has a vested interest to support Ellis in order to get paid because he has twenty years of experience as a roofer working for Andrew Ellis. This should give him the expertise to make a sound judgement of the state of the roof and enough knowledge of Ellis for his character reference to be sound. Ka Yan Law is less reliable because she is basing her judgement on the noise and her prejudice about the sort of area they live in. It is not plausible to know that the men were unmotivated just by the noise without seeing anything.'*

Level 2: 2–3 marks – **reasonable support** given to candidate's conclusion based on acceptable understanding of credibility issues.

*e.g. 'Derek Hengst's evidence is more reliable than Ka Yan Law's because Derek is a roofer and understands the situation better than Ka Yan Law. So he should be right about the roof timbers being rotten. But he is biased because he wants to keep his job and get paid, so he might support Ellis anyway. But Ka Yan Law is only making assumptions.'*

Level 1: 1 mark – **weak support** given to candidate's conclusion or **inconclusive** point or points which might be used to show that either Hengst or Law is more reliable.  
*e.g. Derek Hengst works for Andrew Ellis. He will want to defend himself. Ka Yan Law is just a neighbour who has no interest to lie.*

Level 0: No creditworthy comments

[Max 5]

**(c) What is the significance of Liang Jin's birthday?**

**[3]**

The date is relevant, because, KYL is likely to remember the events of that day more clearly than normal because it was her son's birthday and if the builders started work one week later than 14 June (as agreed by both sides), and the shouting dispute was on 23 June, GT's account cannot be true (one mark). This conclusion is strengthened if we accept DH's word that the shouting was on the last day of the job. As KYL is generally on GT's side, this evidence is particularly damning.

Level 3: 3 marks – **strong** explanation of the significance of the birthday with reference to evidence from different sources.

*e.g. In his evidence Mr Titchfield says that two days after work started on 21 June (therefore 23 June), the men stayed in the van and did no work. It was only on the day after this (24<sup>th</sup>) that he says they removed the roof timbers. Mr Ellis says the shouting happened after a discussion about the roofing timbers. Ms Law stated that she heard shouting on 23 and she is likely to remember events on her son's birthday accurately. So her evidence indicates that GT is not being completely truthful.*

Level 2: 2 marks – **reasonable** explanation of the significance of the birthday with some reference to the evidence.

*e.g. Liang Jin's birthday is significant because Ms Law should be able to remember if the shouting happened that day, so she can testify to a date and time for the shouting.*

Level 1: 1 mark – **weak** explanation or comment which might be used to show the significance of the birthday.

*e.g. It is a date that Ka Yan Law can remember. But it is irrelevant to the case and can only show how Ka Yan Law did have a vested interest. There was much disruption to the birthday party so Ka Yan Law might be cross about that.*

Level 0: No creditworthy response

- (d) **Whose story is more likely to be true, Titchfield's or Ellis's? Write a short, reasoned argument to support your conclusion, using the evidence provided.** [5]

**Conclusion:**

It is more likely that Ellis's story is true.

(Accept 'it is more likely that Titchfield's story is true ONLY if it is supported by the candidate's reasoning).

**Evidence:**

The email indicates that GT was interfering and penny-pinching.

It is not implausible that the email would have led to a misunderstanding or dispute about the sourcing of the tiles.

The contract specifies that the roof timbers should be inspected and made good. This might lead to complete replacement if they were rotten. So GT's claim that the work was not in the original agreement is stretching the point.

It would not seem to be generally in AE's interests to invent this additional work for a customer who had already shown himself to be likely to argue about cost.

Both parties agree that the work started one week later than originally scheduled. AE's explanation of this (that GT wanted to sort out his own, cheaper roof tiles) fits better with the other evidence (email, refusal to pay even for work done) than GT's explanation (that the builders are just lazy).

If KYL is right about the shouting being on 23 June (and because of Liang Jin's birthday it seems that this is the most reliable piece of her evidence) then GT's explanation of the late start and the course of events cannot be true.

Character witness would support AE.

**Generic:**

Acceptable conclusion in terms of probability (1)

And:

Some reference to the evidence in support of the conclusion (1)

Evaluative reference to the evidence in support of the conclusion (2)

Reasoned argument involving thorough evaluation of the evidence to support the conclusion (3)

And:

Consideration of the plausibility of the alternative scenarios (1)

[Max 5]

### Indicative content

*Mr Ellis's story is more likely to be accurate as Mr Titchfield's version has a lot of discrepancies in it. Firstly, Titchfield doesn't mention the email he sent to Mr Ellis just two days before the job was due to begin, and which could plausibly have caused the week's delay as Ellis suggests. So we can't accept his statement that BMS turned up late. The concrete evidence of the email supports Mr Ellis's account. Secondly, Mr Titchfield's account conflicts with his neighbour's account. He suggests that on 23<sup>rd</sup> the men sat in a van all day and makes no mention of an argument which is referred to by Mr Ellis and Ms Law. Thirdly, Mr Ellis has reliable corroboration from his experienced roofer and his contract, which suggests that the roof timbers should be 'inspected and made good.' It is plausible that some builders might do nothing and demand money for work that does not need to be done – but in this case, given that Mr Titchfield wants to save money and interferes, it seems more plausible that he is being difficult.*

(Acceptable conclusion plus reasoned argument making thorough evaluation of the evidence to support the conclusion plus consideration of plausibility = 1 + 3 + 1 = 5)

*Ellis's story is more likely correct as he has got more corroboration, having an email from Titchfield to show that he was only given a short time to change suppliers. A professional in roofing also backs him up in the need to change roofing timbers. Titchfield seems to want to save money in his email asking for cheaper suppliers but he doesn't know what he is doing. Titchfield's account is different from his neighbour's.*

(Acceptable conclusion plus some evaluative comment plus no reference to plausibility = 1 + 2 + 0 = 3)

*Ellis's story is more likely to be true. Mr Titchfield could have asked Ka Yan Law to lie to support him that Ms Law got the date wrong but the date should have been remembered because it was her son's birthday.*

(Acceptable conclusion plus some reference to the evidence plus no reference to plausibility = 1 + 1 + 0 = 2)

*Mr Titchfield's story is true. It is quite plausible that some builders were unreliable and didn't do what they should do. Also the contract does not say anything about replacing roof timbers.*

(Unacceptable conclusion plus reference to the evidence (just) plus comment about plausibility = 0 + 1 + 1 = 2)

*Mr Ellis is telling the truth because he wishes he'd never taken the job because Mr Titchfield argued about everything and sent an email saying another company was cheaper. Mr Ellis had a contract saying 'remove existing roof tiles, inspect and make good existing roofing timbers and provide and fit new roof tiles to detached dwelling, 87 Hind Street.' Mr Titchfield doesn't feel that he should pay the builders any money which is wrong because they did the work. Mr Titchfield sent reliable men who found that the timbers were rotten and needed to be completely replaced but Mr Titchfield shouted at Mr Ellis and insulted him and ordered him off his property and didn't pay him. This even ruined Liang Jin's birthday party which was on 23 June and was very disruptive with banging and crashing and dreadful loud music.*

(Unacceptable conclusion, some reference to the evidence – mostly copied but some selection evident – and no reference to plausibility = 0 + 1 + 0 = 1)

- 2 (a) 'Additive 635 caused the girl's reaction.' Can this be concluded from Document 2? Briefly explain your answer. [2]

No, it cannot be concluded certainly (1 mark) because we do not have enough information (about what else she ate)/she may have been stung by a bee/it would be confusing correlation and cause/other acceptable reasons (1 mark for reason). [Max 2]

- (b) The scientists in Document C conclude that additives generally make children more hyperactive. Document D says that only 2/1000 people are sensitive to additives. Is this a contradiction? Explain your answer. [4]

It is a contradiction if 'sensitive' includes becoming hyperactive.

However, 'sensitive' probably means develops an itchy rash/facial swelling/other allergic reaction.

Document D is dated 2005, whereas the experiment was 2007, so this could just be new evidence which would update the information in the table.

Document D is based on 'reported' reactions. Most people would not report their children becoming more hyperactive (to the doctor). Most doctors would not listen if they did.

'Hyperactive' is quite subjective unless conducted under experimental conditions, whereas a rash and facial swelling are more objective.

It is harder to be sure of a causal connection between food and behaviour than food and physical symptoms of sensitivity.

So this is probably not a contradiction.

Level 3: 4 marks – **strong** explanation of answer with some awareness of complexity.

*e.g. It could be contradictory if we take the word 'sensitivity' as having 'any' effect whatsoever on a child, but normally sensitive is used for a reaction such as rashes or irritability. Also these tests are taken from two different times (2005 and 2007) and two different populations which might be different. So this is not actually a contradiction.*

Level 2: 2 – 3 marks – **reasonable** explanation of answer, possibly simplified.

*e.g. the fact that 2/1000 people are sensitive to additives is irrelevant since it conflates sensitivity in children and in adults. It also shows no comparison between different times.*

Level 1: 1 mark – **weak** attempt to explain, possibly inconclusive.

*e.g. Document C says the reaction is generally seen while Document D says 2 out of 1000 which is not a contradiction.*

Level 0: No creditworthy response.

*Maybe only 2 out of 1000 people were 3 or 9 years old like the people in the study and maybe only children get hyperactive. Scientists should have tried this on adults as well.*

- (c) 'Why did we add colour to the television, the newspapers and to our computers?' (Document E). Is this an effective comparison with adding colour to food? Justify your answer. [3]

Food comes with natural colour.

It is artificial processes that remove colour from food.

Television, newspapers and computers are human made, and we have added colour as we have developed the technology. We haven't ever removed it.

So no, adding colour to food is very different from adding colour to TVs etc. and is not therefore an effective comparison.

Level 3: 3 marks – **strong** evaluation of analogy.

*e.g. This comparison does not justify adding colours to food, because colours are just about seeing whereas food is about tasting and nutrition. So it makes sense to add colours to the television which we just look at, but not to food, which we taste and take into our body.*

Level 2: 2 marks – **reasonable** evaluation of analogy.

*e.g. Colours in food are thought to cause health problems whereas colour on the television is not so the comparison is irrelevant.*

Level 1: 1 mark – **weak** evaluation or comment which might be used to evaluate the analogy.

*e.g. We eat food. We watch television. They are two different things.*

Level 0: No creditworthy response

- (d) **Is there enough reason to believe that adding colours to food is wrong?**  
**Write a short, reasoned case to support your conclusion, using and evaluating the information provided in Documents A–E.** [6]

Document A claims that all additives are tested for safety. Yet Document B implies that additive 635 can cause worrying allergic reactions. Document C gives fairly reliable information that additives can make children hyperactive. These would be reasons not to add colours to food.

It appears from the discrepancy between Document C, in which scientists show a general reaction to additives and the information in Document D (2/1000) that scientists have different ways of deciding what is 'sensitive' or, in other words, reason not to add colourants. However, the idea in Document A that all food is made of chemicals, and scientists are just imitating chemicals like those that are already in food is quite convincing. It counters many misapprehensions about additives.

However, we would need to be convinced that scientists know what to test for. We would also need to consider what they are leaving out of food.

The analogy adds very little support.

So – there is evidence that additives can be problematic. But also an explanation of why they can be acceptable. So there isn't enough evidence to believe that adding colours to food is wrong – but there is enough evidence to merit thorough investigation of all the evidence before making a firm decision.

**Generic**

Acceptable conclusion (1)

And:

Some reference to the evidence (1)

Evaluative reference to the evidence OR simple argument using the evidence (2)

Reasoned argument using the evidence OR simple argument including simple evaluation (3)

Reasoned argument including some evaluation (4)

Sound, evaluative argument weighing various possibilities (5)

[Max 6]



**Indicative content**

*There is not enough reason to believe that adding colours to food is wrong. Documents C and D talk about 'additives' which might be other things as well as colours. In Document B it is not clear that the additive is either a colour or the cause of the girl's allergic reaction so it can't be used to show that it is wrong to add colours. On the other hand, there isn't enough evidence to show it isn't wrong, either.*

*Document A talks about safety testing, but doesn't mention what standards of safety are used or how you can tell if something is safe, and Document E uses an illogical argument to support using colour in food. It also comes from the Food Additives and Ingredients Association, which is likely to be biased. So we can't use Document E to show that it is acceptable to use colours in foods.*

*(Acceptable conclusion plus sound argument weighing possibilities (the evaluation is brief but consistent) = 1 + 5 = 6)*

*We all know that the best foods are those which come from nature and which has not passed through a laboratory. But not for this reason we must say that adding colour to the food is wrong. The additives make the presentation of the food more attractive to the consumer and sometimes it gives a different flavour which is accepted by the consumer. There is not enough reason in the documents because the reasons given and the cases observed do not have the importance they should have. The cases of intoxication by additives nowadays are nearly zero. The documents could only show one special case and in Document D we can see that the percentage of people sensitive to these additives is very low.*

*(Acceptable conclusion plus simple argument with simple evaluation = 1 + 3 = 4)*

*Document A shows that additives are safety tested and are just imitations of chemicals in natural food. Document B shows one girl who got a rash from additive 635. Document C shows that children in Southampton get hyperactive when they eat sweets. Document D shows that only 2/1000 people have sensitivity to food additives. Document E shows that there is no excuse for the puritanical attitude that adding colours to food is wrong. So altogether we can conclude that there isn't enough reason to believe that adding colours to food is wrong.*

*(Acceptable conclusion plus some reference to the evidence = 1 + 1 = 2)*

## 3 Use grid and content below.

Descriptor	Level 3	Level 2	Level 1	Level 0
<b>(a) analysis</b>  <b>max 5</b>	Identifying the main conclusion, all or most of the key reasons, and demonstrating understanding of structure.  5 marks	Identifying the main conclusion and one or more of the key reasons.  3–4 marks	Recognising the general direction of the argument and some of the key reasons.  Identifying the conclusion but none of the reasons.  1–2 marks	Summary of the text/parts of the text  Not recognising the general direction of the argument  0 marks
<b>(b) evaluation</b>  <b>max 5</b>	Evaluation of strength of argument with critical reference to assumptions, weaknesses and/or flaws.  5 marks	Some evaluative comments referring to assumptions, weaknesses and/or flaws.  3–4 marks	Discussion of or disagreement with the argument.  Weak counter argument.  1–2 marks	No relevant comments.  0 marks
<b>(c) further argument</b>  <b>max 5</b>  Note that structure is not sufficient – reasons must really support IC and C 4–5 marks	Developed, coherent, argument.  e.g. $R \rightarrow IC \rightarrow C$  $R1 + R2 \rightarrow IC + R3 \rightarrow C$  $CA - RCA + R1 \rightarrow IC \rightarrow C$	Relevant, simple argument, possibly with some development  e.g. $R \rightarrow C$ $R1 + R2 \rightarrow C$ $Ex \rightarrow R \rightarrow C$  2–3 marks	Relevant comments  Or  Relevant but incoherent argument  1 mark	No argument. Statement of (dis)agreement or irrelevant comment.  0 marks

**(a) Analysis**

[5]

An ideal analysis for 5/5 would pick out most of the key reasons, one counter argument and the main conclusion as follows:

CA Many may call such people (who do not have children) selfish.

R1 (Response to CA) Having children is actually the selfish option.

R2 Such parents (who mistreat their children) would have been better thinking through the decision to reproduce.

R3 The earth will struggle to cope.

R4 So making the decision not to have children is actually unselfish.

R5 Children take over your life and eclipse your identity.

CA People speak of the joy of having children.

R6 (Response to CA) This (joy) cannot compensate for all the sacrifices a parent must make.

(Accept as Key Reason: Children are hugely expensive consumers.)

C The decision not to have children is clearly a reasonable one.

**Indicative content**

*The author is leading to the main conclusion that 'the decision not to have children is clearly a reasonable one'. The author's reasons include that having children is actually the selfish option (intermediate conclusion) and 'making the decision not to have children is actually unselfish' (another intermediate conclusion). In addition to this, the author argues that, because some parents mistreat their children, either with good intentions or bad, 'such parents would be better thinking through the decision to reproduce.' In the final paragraph, the author argues against the possible counter argument that there is a 'reward' to having children by discussing the misery children can cause.*

(Main conclusion plus 3 quoted key reason plus paraphrase of CA and response plus understanding of IC and CA which counts as structure = 5)

*The main conclusion is the decision not to have children is reasonable. The reasons to support it are, children are expensive consumers, children take over your life and eclipse your identity.*

(Acceptable version of MC plus one accurate key reason = 3)

*The main conclusion in the extract is that one should not be deemed selfish for not having children as it is a large job to bear a child. There are several reasons that support this main conclusion in the extract, such as 'the earth will struggle to cope' and 'children take over your life and eclipse your identity.'*

(Wrong conclusion, two key reasons and no padding = 1)

*The main conclusion of this passage is that people should not have children. The writer supports this conclusion with arguments which defend his ideas. The writer says that ensuring the survival of your own genes is a selfish action. The writer thinks that if people do not stop having babies the world will crowd up and the natural resources will decrease. The writer ends up saying that the kid will eclipse your identity and that you will never be the same again.*

(Summary of the text, main conclusion wrong = 0)

**(b) Evaluation**

[5]

## Paragraph 1

Restricts the options – there may be other reasons why people have children other than the extremes of passing on genes or being looked after in old age. Therefore it doesn't demonstrate that it is selfish to have children.

## Paragraph 2

The paragraph does demonstrate that some parents would have been better thinking through the decision to reproduce. But it does not necessarily support the conclusion that the decision not to have children is a reasonable one: these parents may simply have concluded that they should have children later in life, or that they need some assistance bringing their kids up. And just because it might sometimes be a reasonable decision not to have children does not mean that it always is.

## Paragraph 3

Have to assume that every child born will live a wasteful, unnecessary lifestyle – this may not be the case (children born in developing countries or who make a decision not to be wasteful).

Candidates might clarify the word, 'need'. Children need food, clothing and medical care. But they do not need the sort of clothing we often give them. And they certainly do not need trendy gadgets etc.

So, whilst the world will struggle to cope with excessive consumption, it would be possible to have children without putting such a burden on the earth. So it may be that using this justification for not having children is actually pretentious posturing and not at all unselfish.

## Paragraph 4

Slightly straw person, being dismissive of the joy of having children.

Supports the claim that you have to make sacrifices to be a parent. Exaggerates these sacrifices (not quite slippery slope but some candidates might think so). Makes sweeping generalisations.

Does not support the claim that this 'joy' or 'biological reward' cannot compensate for all the sacrifices a parent must make, even without the exaggeration.

So, overall, has supported the claim that the decision not to have children can be a reasonable one, but not fully supported the stated conclusion that it 'is' a reasonable decision.

**Indicative content**

*The reasoning given is extremely flawed in that it is based solely on unsupported value judgements and ridiculous statements which are unfounded and do not serve to strengthen the argument, such as that you are ostracised by your friends. The statement that producing children is only for the benefit of the parent is undermined by the reasoning given in paragraphs three and four, that having children is a terrible burden on the parents of these children. By doing this the author contradicts himself which weakens the argument. The fact that some parents treat their children inappropriately does not contribute to the argument. This does not show that it is wrong to have children or that it is right not to have them. But it is important to consider whether you are ready to have children. It is relevant to think whether too many children will use up resources but the author exaggerates into a slippery slope about unnecessary lifestyle and the world can't cope.*

(Evaluation of strength of argument = 5)

*It assumes that there are no other reasons for parents to have children than passing on their genes or being looked after when they are old. It assumes that nothing good will come from wasting resources on children, but some of them might be important characters in the future. The lack of statistics or figures that show parents feel they are miserable because of children weakens the argument into an opinion of the author.*

(Two accurately identified assumptions, one of them with some counter argument and a weak evaluative point = 3)

*It assumes that parents have children so they can pass on their own genes. It assumes that some parents live their lives through their children. It assumes that children eclipse your identity.*

(These 'assumptions' are in fact quoted from the text and are unsupported assertions. The candidate has not identified gaps in the reasoning or evaluated the effect of the unsupported assertions = 0)

**(c) Further argument. 'Children have the right to demand what they want from their parents'. [5]**

*The parents are not the maidservants of the child. Children have no right to demand what they want from their parents and the parents should not apply their demands because this will make the children spoiled and irresponsible. Furthermore, sometimes the parents can not afford to apply these demands. Moreover, children who get everything they want are found to be less likely to succeed in life as they will still depend on their parents to fulfil their demands in life. This will make the child's personality weak and dependent on others. Therefore children have no right to demand what they want from their parents.*

(Coherent, developed argument = 5)

*Children have the right to demand what they want from their parents as the couple who chose to conceive the child made a conscious decision to raise that child. The child had no choice to be given life and therefore deserves the right to demand what they want. Children are further innocent and helpless and further need to speak their mind in order to prosper. Nowadays there are several devices on the market to prevent childbirth and many governments will aid in the use of abortion or adoption if the parent is deemed unfit to raise a baby in society. In this modern era many couples who cannot produce would love a child and go to great lengths to adopt therefore allowing children who have no choice to have what they essentially need from their parents to live the choice to gain it.*

(This contains some interesting ideas, some of which are relevant. There is some support for the conclusion but much of what is written is irrelevant and largely incoherent. There is just enough here for 2 marks)

