

# THINKING SKILLS

Paper 9694/02  
Critical Reasoning

## General comments

Generally speaking, the paper was done well. There was a wide range of responses, from the candidates who gained full marks with very high quality answers to those who simply repeated or paraphrased parts of the stimulus material in their answer booklets.

## Comments on specific questions

### Question 1

On the whole this question was well answered. Candidates were generally able to consider the credibility of the evidence given by participants, although some were led astray by pre-existing ideas about construction workers and residents in quiet neighbourhoods. Some candidates were able to consider the plausibility of different possible courses of events, but many candidates did not attempt to do so. This is an area in which Centres could easily improve performance. Weaker candidates tended to speculate and write stories.

- (a) Most candidates understood the relevance of the email. Weaker candidates tended to say that 'this was what started the fight.' Stronger candidates tended to say that the email provided some support for Ellis's statement, and were more focused on the relevance of the email in helping to establish where the truth might lie.
- (b) Most candidates were able to make some relevant credibility points to compare the reliability of Derek Hengst and Ka Yan Law and most came to a judgement about who was more reliable which followed at least to some extent from the points they had made. Almost all were able to say that Hengst had a lot to lose if he had been unmotivated and not doing his job properly, or even if his boss lost the case, because he might not get paid/might lose his job. Better candidates realised that this did not necessarily mean that he was lying, and also took into consideration Hengst's experience and ability to see. The strongest candidates related credibility points to specific claims – they felt, for example, that Hengst's claim (character reference) that Ellis was a calm man was likely to be reliable on the basis of their long acquaintance which would mean that Hengst would know Ellis. They also felt that his vested interest to protect his boss might mean that he exaggerated the quality of work done, but was unlikely to mean that he called his boss calm if this was not true (especially not as this could be easily verified). Candidates' consideration of Ka Yan Law was generally less well done. Many candidates wrote that Ka Yan Law was completely neutral and had certainly seen everything, which is rather implausible. Better candidates made the point that we had no information about the relationship between Ka Yan Law and her neighbour, so we could not evaluate the extent to which she might be biased in his favour. These candidates also said that Ka Yan Law's unfounded comments about 'people round here' indicated a certain level of social prejudice which made her belief that Graham Titchfield was not shouting less reliable. Some candidates noticed a contradiction between her claims that the workers were making a great deal of banging and crashing noise and that the workers were just sitting in the van. Weaker candidates invented features of Ka Yan Law and engaged in lengthy speculation on the basis of these invented features.
- (c) Stronger candidates considered the significance of the birthday in relation to the dispute, and noticed that it highlighted an inconsistency in Titchfield's evidence. Many candidates were able to say that the birthday meant that Ka Yan Law would remember the date. A large number of candidates, however, spent a great deal of time talking about how noisy parties are, how this might have affected Ka Yan Law's ability to hear the workers, and how the workers might have made Ka Yan Law cross by ruining her son's birthday. At best these points related to her reliability rather than to the significance of the birthday in terms of the dispute.

- (d) Most candidates were able to provide an acceptable conclusion with some evaluative comment on the evidence. The strongest candidates produced a thoughtful argument which evaluated the evidence and considered the plausibility of different courses of events. Weaker candidates made sweeping statements about what builders or home owners might do. Some candidates felt that Ellis should pay for Titchfield to live in a hotel because his roof timbers were rotten, as if Ellis had caused the problem rather than simply uncovering it. More able candidates commented that it was easily verifiable whether the roof timbers needed to be replaced, and the result of an independent examination would help to sort out the dispute.

### Question 2

On the whole, candidates responded well to the issue of food additives and demonstrated some strong scientific reasoning skills.

- (a) Most candidates gained the full two marks although weaker candidates either forgot to write a justification or thought that it could be concluded that the additive had caused the rash.
- (b) Candidates who were able to think on their feet did well on this question, seeing the differences between hyperactivity and allergic reaction, reported reactions and reactions looked for in a study, different populations and different years. Candidates who relied more on fitting pre-learned stock responses to the right questions were less successful in this question.
- (c) Most candidates were able to see that there was an important difference between adding colour to visual technology and adding colour to food which you eat. Better candidates drew conclusions from this about the possible effects on health. Weaker candidates tended to simply say how wonderful colourful food was and how colour additives were an amazing marketing tool and who would want to eat grey food. Only the very most able commented that food has colour naturally.
- (d) This question was fairly well done. Most candidates did produce some evaluation of the source material, although a large minority simply used it uncritically. Few candidates noticed the important difference between additives generally and colours specifically. The best candidates produced a very high level of critical reasoning, in which they used and evaluated the source material in their own arguments, seeing that there might be some reason to be careful about using colours in food, but that there was not enough reason to think that it was wrong.

### Question 3

- (a) About half the candidates were able to identify the main conclusion, and of these, a proportion was able to give a strong analysis of the reasoning. Very few candidates identified the counter arguments, although a reasonably large minority did identify intermediate conclusions. Some candidates mistakenly thought that the conclusion was that it was selfish to have children, or that parents should not have children. A large minority simply summarised or paraphrased the reasoning, often very badly.
- (b) Many candidates were able to take issue with some of the claims in the passage, but few were able to really evaluate the reasoning, although those candidates who did often produced a very high level of work. This question is not about disagreeing with the reasons, it is about seeing weakness and strength in the reasoning. So, for example, better candidates were able to point out inconsistency, over generalisation and exaggeration bordering on slippery slope reasoning. Weaker candidates simply listed claims they disagreed with and called them 'assumptions.' Assumptions are unstated claims – that is, they are not written down in the argument, but they do need to be accepted if the conclusion is to hold. Better candidates were able to identify some of these unstated parts of the argument and evaluate them.
- (c) Most candidates had an opinion about whether children had the right to demand what they wanted. Many were able to give some reasons for this, and the best were able to write a short, structured argument to support their view. It is important that candidates think about supporting their view, not just expressing it. The marks are available for the quality of argument, not for the ideas used.

# THINKING SKILLS

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Paper 9694/04  
Applied Reasoning

## General comments

Overall, candidates found the paper slightly harder than last summer's paper, and this was mostly because of difficulties with the problem-solving questions (see below for details). As in previous sessions, there was evidence of candidates suffering from the time constraints. A number of candidates began with **Question 3**, and of those who did not finish, most omitted **Question 2**. Most candidates did proportionately better on the Critical Thinking part of the paper than on the Problem-Solving part.

## Comments on specific questions

### *Section A*

#### **Question 1**

As in previous sessions, more than a third of candidates were not awarded any marks on this question – although half of these appeared not to have wasted any time on the question (in order to concentrate on **Question 3** perhaps), the number who did this was less than in previous years. Most candidates felt able to access the question, and began to investigate the problem.

- (a) Most candidates who attempted the question were able calculate an appropriate area, although more than half failed to appreciate that there was more than one possible answer.
- (b) Of those candidates who managed to access this question, about a third attempted an algebraic solution. Of those who used Trial and Improvement, most failed to justify their answer (which required demonstrating that the answer they gave was maximal). Of those who use algebra, there was no problem with justification, but a significant number of candidates failed to offer a whole number answer (i.e. 13 metres rather than 13.75 metres).
- (c) This was found by most candidates to be the hardest part of the question. The justification that the answer was maximal, in particular, was rarely achieved. Furthermore, some candidates who had succeeded in using algebra in part (b) wasted time trying a similar approach in (c). An algebraic approach was possible, but only once it was appreciated that the width of the cage must be 9 metres if the volume was to be maximised.
- (d) For candidates who had sustained a grasp of the structure of **Question 1**, this was comparatively easy (although a number of candidates gave up after the difficulties encountered in part (c)). There was a greater a number of available solutions compared to previous such questions, some of which were quite accessible. Some candidates sacrificed a mark here by forgetting the requirement of whole number answers. This seemed likely to have been the result of the candidates rushing, in the face of perceived time pressures.

**Question 2**

This proved to be the most inaccessible part of the paper to most candidates. Almost a half of the students did not score on this question at all, although this was largely due to candidates not attempting the question, or attempting it last out of the three. Of those who did attempt the problem, many were clearly distracted by the complexity of tabular data, and missed one of the key pieces of information in the text.

- (a) Many candidates clearly had difficulty imagining the relationship between the bus stops and the island. Of those who grasped these restrictions on the bus service, most identified the correct triplet of times from the table.
- (b) There was evidence of an information overload even at this stage in the question, since half the candidates who gave answers to this question missed the information about how the Castle's opening times were related to the causeway.
- (c) This required a careful review of each of the days (from the 6<sup>th</sup> July onwards), applying the grid of restrictions that informed (a) and (b). Those who had completed (a) and (b) correctly tended to achieve this if they approached it systematically (in a table).
- (d) Only about 5% of the candidates accessed these four marks. Successful completion required a level of care that was manifestly difficult to sustain in the face of time pressures. As with part (c) the task was only tackled well by those who attempted to lay out their answers systematically.

**Question 3**

Almost all candidates appeared engaged in the issues raised by the source documents, and in particular the viewpoint raised in Document 1. The deliberately provocative nature of this prompted more candidates to take a critical stance than has been experienced in previous sessions, but also generated a number of emotionally charged rants. The vast majority of candidates attempted all three parts of this question.

- (a) A small number of candidates achieved full marks on this question, although only one or two of them identified the counter-argument in the last paragraph. The large number of reasons which acted as examples in support of the intermediate conclusions distracted many candidates, who preferred to write down as many reasons as possible from the document rather than consider which were the important ones. As usual, this was not well rewarded by the mark scheme. Furthermore, a number of candidates mistook the intermediate conclusion "women are intrinsically superior to men" as the main conclusion, and had their marks scaled down as a result. As in previous papers, the correct and precise identification of the main conclusion is vital to success in this question.

Certain Centres treated this analysis questions as an exercise in literary criticism, which prevented candidates gaining almost any marks. As is clear in the mark scheme, answers must state (ideally quote) the author's main reasons and conclusion, rather than describe generally how the different parts relate.

- (b) As usual, candidates found this key critical thinking task hard, although the provocative nature of the argument gave most candidates a chance to make critical comments worthy of one mark. Nearly half the candidates gained two marks here, which is better than previous sessions. Most candidates who did well here, did so by describing weaknesses in the author's reasoning in their own words rather than looking for classic, named flaws (such as a straw man). Many candidates gained a mark for commenting on the bias that the document showed, and it is probable that this favoured the number of candidates who tend to offer omissions as weaknesses: the mark scheme will not generally credit "the author failed to consider 'x'..." as a weakness. Failure to consider the strengths of men in this argument constituted a noteworthy bias, and thus was credited.

A significant number of candidates correctly identified weaknesses, and then incorrectly labelled them as assumptions (but were not penalised for this). Also a number of candidates attacked perceived weaknesses in the argument rather than explained them (for instance stating that "the author is just plain wrong about men being unable to cope with the pain of childbirth" rather than "the author's claim that men are unable to cope with the pain of childbirth is weakly supported, appealing to an implausible hypothetical situation which is unclearly phrased." etc.). Such answers will attain marks according to how clearly they offer an explanation implicitly.

- (c) The invitation to use “examples of gender inequalities from your own country” produced a number of further arguments and elevated the median on this question to 9 marks (higher than in previous years). For a notable minority the invitation obscured their need to refer to and evaluate the documents on offer.

As with all the critical thinking questions, the need for a clear and appropriately-phrased conclusion is vital. Some candidates’ responses were prevented from accessing the upper middle band of marks because their argument was directed towards a tangential conclusion (such as the claim that women should not be discriminated against).

Those candidates who did refer to the documents referred to Document 3 most frequently (after Document 1): the religious viewpoint provided much scope for discussion, although it was rarely supported or criticised with clear and cogent reasons. Many candidates proved able to make critical comments about Document 5 (although a significant misinterpreted illiteracy as literacy).

The best candidates linked the characteristics of the geographical areas with the greatest female illiteracy (from Document 5), with points made in other articles (rather than taking each piece on its own merits). This tendency to compare and contrast the documents was an improvement on previous years, and raised the level of performance.

Very few candidates explicitly considered counter-arguments to their positions (which is an aspect that upper top band answers should hope to include).