THINKING SKILLS

Paper 9694/01

Problem Solving and Critical Thinking, Multiple

Question Number	Key	Question Number	Key
1	B	26	C
2	C	27	B
3	B	28	C
4	A	29	A
5	B	30	D
6	E	31	E
7	A	32	D
8	C	33	E
9	A	34	C
10	C	35	C
11	C	36	B
12	B	37	B
13	E	38	D
14	E	39	A
15	D	40	C
16	D	41	C
17	D	42	C
18	D	43	C
19	C	44	D
20	D	45	D
21	C		
22	E		
23	D		
24	A		
25	B		

THINKING SKILLS

Question 1

Candidates responded well to the subject matter of children being left behind on a school trip and mostly had sensible and perceptive comments to make about the situation and the credibility of the evidence given. The best candidates were able to evaluate the relative plausibility and likeliness of the different versions of events. Most candidates were able to spot contradictions and inconsistencies in the accounts given by the teachers and the girls. Many candidates were able to use the technical terms 'hearsay' and 'bias' when referring to Anil's father's evidence, which was pleasing. Fewer referred to the teachers' vested interests to protect themselves and their jobs. A worrying number of students, generally the weaker ones, thought that it was quite likely that a senior teacher might deliberately leave annoying students behind. A few students with weaker language skills misinterpreted 'senior' to mean, 'old and doddery.' Too many students ignored the last instruction to 'consider alternative explanations,' and therefore did not access two fairly easy marks.

Question 2

Parts **(b)** and **(d)** demonstrated general weakness in candidates' understanding of critical reasoning. Centres would do well to devote more teaching time to assumptions and flaws, which are central to critical reasoning, and refer candidates to the materials recommended by CIE.

(a) Most candidates were able to identify two reasons accurately.

(b) Only exceptional candidates were able to accurately identify an unstated assumption – a missing step in the reasoning. Most simply quoted a part of the text, and therefore missed the point that an assumption is not written down, but forms an invisible link in the chain of reasoning. Some candidates tried to think of additional reasons that the author could have used to support the conclusion, rather than focusing on an idea which has to be accepted if the reasoning presented is to support the conclusion.

A significant minority of candidates referred to paragraph 3 rather than paragraph 2. As most of these candidates did not identify assumptions, this error did not cost them any further marks.

(c) Most candidates were able to justify their view whether this comment strengthened or weakened the reasoning or neither, and therefore accessed both marks.

(d) Only exceptional candidates identified the slippery slope reasoning and explained why this was flawed. A small minority of candidates were able to say that the reasoning was exaggerated, or did not necessarily follow, but most candidates simply disagreed with the reasoning or provided a counter argument.

(e) Performance in this question was pleasing. Many more candidates than in previous years wrote an argument with reasons supporting a conclusion. Significant numbers of candidates wrote coherent, developed arguments. Candidates responded well to the topic and even weak candidates were able to communicate reasons for or against the requirement to carry ID cards.

Question 3

Performance on this question was disappointing, possibly because candidates found the topic of and the effectiveness of medication overwhelming. On the whole, this question discriminated between and excellent candidates who had also performed well on the other three questions.

(a)(i) This question required candidates only to read the axes on the graph carefully, and most did not.

(ii) Very few candidates realised that there was not enough evidence to support the claim that placebos work better for pain than for illnesses such as asthma.

(b) Most candidates were able to see that Experiment A showed a real, physical effect involving endorphins. Good candidates related this understanding back to the cartoon.

(c) Most candidates gained two marks for showing how the sample was not representative of the whole population. Very few candidates understood that this experiment was looking at the chemical mechanisms of a process in the brain which is known to occur in people generally and did not need to be representative.

(d) Most candidates gained one mark for identifying the evidence given to support the claim that low-level light therapy is 'definitely working for Hanna.' Very few candidates evaluated the degree of support given by this evidence to the claim. Some candidates considered that Hanna might be experiencing the placebo effect. The best candidates were able to say that the evidence gave very little support to this claim because one session was not enough to generalise from, the causal relationships between the light therapy and the lack of headache were not sufficiently established and the rest of the evidence was irrelevant.

Question 4

As ever, the open ended nature of question four allowed able candidates to demonstrate their understanding and weaker candidates to demonstrate their lack thereof. On the whole, candidates responded with interest and understanding to the topic of parental responsibility for children's bad behaviour.

(a) Candidates were generally able to identify the main conclusion and some of the key reasons. Some candidates provided vague paraphrases, but the majority were attempting the right task, which was identifying and quoting significant parts of the structure of the argument.

(b) Good candidates were able to spot inconsistencies and contradictions, and to evaluate the use of Zakia Ahmed as an example. Very good candidates were able to identify missing steps in the reasoning (assumptions) and articulate them clearly. Many candidates used counter argument rather than evaluation to express their understanding of ways in which the argument did not work. This is less effective, but was allowed some credit.

(c) Many candidates were able to write an argument to support or challenge the conclusion, with reasons which supported their conclusion. The topic elicited some interesting and perceptive responses from candidates. Some candidates wrote recommendations for parental behaviour rather than supporting the claim that parents were (or were not) responsible for their children's behaviour. These candidates were not able to access the marks.

THINKING SKILLS

| Paper 9694/04 |
| Applied Reasoning |

General comments

The paper produced an appropriate spread of responses and accompanying marks. Although a few candidates suffered from time constraints, the vast majority produced sensible attempts to all questions.

Comments on individual questions

Question 1

(a) A few candidates suffered from not answering the question fully – producing full calculations for the different categories, but not identifying which of the desired results were achieved. These were awarded no marks.

(b) There was a variety of acceptable responses to this question – but most candidates maximised the 55+ age group. A few candidates failed to appreciate the strict inequality that was required for R3 and this restricted their marks..

(c) (i) About 10% of the candidates attempted an algebraic approach to this question (with mixed success). A good number produced percentages which gave equal amounts of comedy but did not add up to 100% (such as 40%, 10% and 30%).

(ii) Well-answered, in general.

(d) Apart from those whose found a complete correct solution for the problem, the four marks that were available here effectively differentiated between candidates who clearly and logically considered a progression of attempted solutions and those who did not. A number of candidates who were fixed on achieving the final solution failed to produce clear working and suffered as a result.

Question 2

(a) This question was well-answered by almost all candidates.

(b) A number of candidates did not read the graph with sufficient precision. Of those who did read the graph properly, a number did not convert the graph reading (of imperfect Chumbals) into perfect Chumbals. There were also a number who failed to take into account all parts of the profit calculation.

(c) Most candidates made a good attempt at this, although many became disheartened by the process of exploration (or may have run out of time). A small number were convinced that the task was impossible.

Question 3

(a) About 60% of the candidates were awarded three marks for this question, which was partly because two marks were awarded for the combined intermediate and main conclusion ("we have to reduce our flying, by forcing up prices"). A minority of candidates commented on the general structure of the argument, without any reference to details, and gained no marks at all. Those who offered precise reasons tended to score well.

(b) Approximately half of the candidates scored more than two marks on this question. candidates focused solely on the language that was used in Document 5, and its appeals – without precise examples this could not score more than one mark. The description of weaknesses is one of the most difficult (and important) aspects of critical th that the paper assesses, and is a task that candidates clearly find hard under exam conditio Those candidates who described strengths in the argument did not score well, in general, because of the tendency to merely repeat what the author had said ("the author's reasoning was strong when he pointed out that politicians and environmentalists are persistent air-travellers"). A mark was awarded for an overall assessment of the argument – this required an explicit attempt (normally at the end of the evaluation) to comment on whether the overall effect of the argument was convincing or not.

(c) About half of the candidates scored 9 marks or more on this question. Those who managed this offered some (possibly implicit) criticism of opposing positions in their argument. Those who were awarded 12 marks or more made explicit reference to counter-arguments (this was only about 10% of the candidates). The danger that many candidates fell into in this question was to offer a string of positive proposals for solving the threat of air travel, without taking the opportunity to consider any downsides/opposing viewpoints.

A few candidates strayed from the set task, and considered more general ecological problems (for instance, whether global warming was a phenomenon at all).

Overall the performance of candidates was better than the first examination session (in June 2007). Many more candidates made credible attempts at the problem-solving questions, and organised their time better overall. The analysis question was dealt with more effectively than the previous exam session, in general, but often the attempts at evaluation were worse.