

# **Critical Thinking**

Advanced GCE **A2 H450**

Advanced Subsidiary GCE **AS H050**

## **Report on the Units**

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**June 2007**

**H050/H450/MS/R/07**

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Reports should be read in conjunction with the published question papers and mark schemes for the Examination.

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### Advanced Subsidiary GCE Critical Thinking (H050)

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## **Chief Examiner Report for June 2007**

It is a pleasure to report on another successful session. We have seen significant growth in the entries at A level whilst entries at AS level have remained similar to last summer. All of the Principal Examiners have commented on areas of improved candidate performance reflected in higher mean marks and wider mark distributions on all 4 units, compared to last summer. Candidates and centres are clearly benefiting from the greater range of resource materials available for this subject and a growing familiarity with the structure and demands of the papers.

There are still areas where we feel candidates are not achieving as many marks as we would like. The Principal Examiners have highlighted some of these areas and give helpful advice on how candidates could improve their performance. I hope that centres will find this advice practical and useful and an aid to planning next year's teaching.

**Principal Examiner Report to Centres  
F491 Critical Thinking Unit 1 Credibility of Evidence**

**DRAFT  
May 2007**

The F491 entry approached 23,000 candidates this session, with increased entries from existing centres and new centres entering with large cohorts. It was most pleasing that a greater proportion of candidates than usual in the summer session displayed a firm grounding in Critical Thinking skills. A marked improvement in the standard of answers was evidenced across the ability range. More candidates had the necessary skills to handle questions, being able to apply relevant credibility criteria, interpret data, recognise implications and assumptions and make informed judgements. Where these skills were lacking, Centre performance was more limited.

Stronger candidates regularly achieved marks over 60, with remarkable astuteness. The majority of candidates applied the credibility criteria well, losing marks from weak assessments, rather than from errors in conceptual understanding. Marks were however restricted when an answer could not be discerned due to the weak quality of language. Candidates not focusing upon the requirements of the questions also led to fewer marks, notably in Q3 which requires an assessment of *documents* not individuals, in Q8 which requires assessment of *individual sources within the documents* and in Q8(e) requiring assessment of the *sides* of the dispute.

Candidates engaged particularly well with the topic and were able to sensitively assess the range of professional claims put before them. The documents prompted rather fuller assessment than previously, as did the questioning of the graph. Strong candidates displayed well-phrased suppositional reasoning in Section B, whilst weaker candidates gained their fullest marks from Section C with corroboration and conflict.

Timing strategies appeared effective. The strongest candidates gave considered succinct answers, focusing these directly upon the questions. Fewer questions were incomplete and fewer candidates were caught short from having written more than was necessary in earlier questions. Very few required the last page, those continuing there rarely gaining marks, their responses being typically unfocused.

**Comments on individual questions:**

**Section A**

- 1) Many candidates gained three very straightforward marks, appreciating that the question requires reference to reporting about *medical disputes in general*. Those that did not, referred to the specifics of the MMR dispute, whilst a tiny minority did not make reference to any context, giving generic answers e.g. 'They will lie in order to protect themselves, if they are to blame for things going wrong'. Candidates needed to use words that referred to the medical context e.g., '*Patients* might distort the truth to claim compensation for *medical treatment* that might have negative consequences.'
- 2) (a) Many gained both marks. Most recognised that the knowledge and diagnosis of autism had increased over this time. Many also recognised that as the figures in the graph were absolute numbers, an increase in population could give rise to an increase in the autism figures. Weaker candidates referred to a change in various practices, without relating this to autism or a rise in autism.

- 2) (b) The majority gained one mark and many gained both marks, displaying a firm grasp of trends and their possible causes. Most gave a developed explanation, whilst weaker candidates gave one or two statements.
- 3) This was more successfully answered than in the past, with the strongest candidates gaining full marks overall and many gaining full marks for the assessment of Document 3. Stronger candidates were able to find a third point of assessment for both documents, whilst weaker candidates either left this blank, or attempted to re-express a previous point, restricting their marks with duplication. The difference between bias and vested interest was not always recognised and some centres used 'reliability' as a criterion, instead of criteria that would increase or limit reliability, such as relevant expertise.

Document 2 was a good discriminator. The strongest made good use of the New Scientist assessing balanced neutrality, ability to observe in terms of studies and graphs and relevant expertise. Weaker candidates tended to assess individuals without referring to the document itself, thereby severely limiting their marks. Additionally, Andrew Wakefield's evidence provides the document's counter argument, thus identifying his possible lack of expertise in relation to autism would not weaken this document. Assessments of Document 3 tended to be more successful, since with no individual claimants, reference was almost automatically made to NIP or the government.

## Section B

- 4) (a) A significant minority did not understand the term 'implied', as they quoted or paraphrased Professor Senn's claim from the text.
- (b) Few candidates gained a mark, many citing irrelevant evidence from the text.
- (c) Many candidates gained this mark referring to expertise in interpreting statistics. However weaker responses felt that Dr Senn's expertise was not in medicine, missing the nature of the claim made.
- 5) The strongest candidates identified both assumptions relating to the link and the trend. Being able to identify assumptions is a fundamental Critical Thinking skill, so the classic errors of *quoting* from the text, here the mother's claims, or giving *absolute answers* such as 'all', 'no' or 'only' were disappointing. Alternative explanations were largely successful, especially those referring to a condition that showed symptoms some time after birth.
- 6) Most candidates correctly identified claims made, but a significant minority risked losing an easy mark by offering paraphrases that were insufficiently accurate. Weaker candidates tended to name criteria rather than apply them, whilst others routinely used 'because they.....' following the criterion which prompted assessment. The criterion of reputation was often used in weaker responses without an explanation of what the reputation was for, or without a reference to a vested interest to maintain this.

It was encouraging that more candidates appeared to be familiar with suppositional reasoning which raised the performance on this question, although there was a marked variation between centres. The strongest candidates correctly stated what must be supposed, whilst weaker candidates related this to evidence in the text, such as the validity of the Danish studies in relation to Dr Miller's claim. The weakest candidates did not attempt this.

- 7) Having to compare two professionals avoided superficial assessments requiring assessment of the background of the two sources. On the whole this was done sensitively. However only the strongest candidates gained two marks by explicitly assessing both sources. Weaker candidates assessed one source, implying that the other was less credible without any explanation. Typically, 'Dr ..... had the ability to see because.....whilst Dr ....did not.'

### Section C

- 8) (a) In some Centres candidates could only access half the marks for 8a and 8b because they evidenced only one point of corroboration and conflict, each supported by two quotes. The majority of candidates evidenced corroboration in a businesslike manner, firstly stating who agreed about what and then quoting the two claims made, often gaining full marks for both parts (a) and (b). Weaker candidates left out the statement, which sometimes made it difficult to see what the claims had in common e.g. Dr Wing's claim that she had not seen an increase..... and Prof Senn's claim relating to the natural association, appeared to be unrelated unless joined by a common implication.
- 8) (b) The vast majority chose points of conflict that were relevant to the dispute. However some candidates limited their marks, as at times a statement of the point of conflict was missing, as in 'Dr ... claimed '....', whereas Dr... claimed '....'. The point of conflict needs to be explicitly stated.
- 8) (c) The best answers often appeared in the form of a grid with sources allocated to either side and their belief at the top of each column. However the latter was often inaccurate, referring to MMR causing autism, rather than the more subtle dispute related to the link between MMR and the rising figures of autism. Candidates were more successful than in previous sessions at assigning the sources to each side. The vast majority followed the rubric referring to *individual* sources, with very few referring to the documents. Many named the neutral sources but did not explain why they were so, thus denying themselves access to that mark.
- 8) (d) Stronger candidates gained both marks, whilst the weaker simply referred to the side with the greatest weight, without making a numerical assessment.
- 8) (e) It was pleasing that the majority of candidates assessed the quality of evidence *on each side of the dispute* as indicated in the question. However marks were severely restricted where weaker responses discussed each source in turn without organising them into sides, or credibility criteria were listed next to a source without brief justification.
- 8) (f) The vast majority of candidates made a judgement that challenged the link. However many inaccurately paraphrased the dispute, despite the wording of the judgement being repeated in this part of the question.

**Quality of Written Communication** As the majority applied specialist terms correctly, these gained four or five marks. Specialist vocabulary was used appropriately, even if self evidently without application to the context or source. Key terms were at times misspelled or misrepresented by the weakest who talked about 'casual' relationships instead of causal relationships; used 'biastedly' for biased; 'vested income' for vested interest and 'coinserdence' for coincidence. A glossary of key terms such as that in the specification or in the Unit 1 textbook might be useful for such candidates.

*Report on the Units taken in June 2007*

The responses this session were widely perceived as demonstrating a firmer grasp of the key concepts. Candidates applied the criteria correctly and consistently as well as targeting the marks available with relevant and focused answers. The performance was pleasing throughout. For centres wishing to target the marks, the mark schemes are available on the OCR website [ocr.org.uk](http://ocr.org.uk) and examples of good answers with guidance are available in the Heinemann Unit 1 textbook.



**Report for publication to centres by the Principal Examiner for F492**

**General comments**

This is the fourth paper in the current specification and it is clear that an increasing number of candidates are familiar with both the types of questions set and the types of answers that receive credit. Answers to 'assumption' questions continue to be strong and there has been a noticeable improvement in the quality of the responses to the longer argument questions at the end of the paper. Overall performance displayed an improvement on previous sessions. However, it is still the case that many candidates are not familiar with basic concepts and terms used in Critical Thinking. The performance of many candidates was, therefore, very restricted.

**Comments on individual questions.**

**1 – 20 Multiple choice**

Candidate performance on the multiple choice questions continues to be impressively strong. It is particularly pleasing to see a significant number of candidates achieving very high scores and an increase in the number of candidates getting all 20 questions correct.

Closer analysis of the performance on each question reveals that questions 3 and 4 were found to be the easiest questions (94% of candidates had the correct answer for question 3) whilst question 18 was found to be very demanding. The questions successfully differentiated between candidates.

**21**

The vast majority of candidates were correctly able to identify the main conclusion.

**22**

Whilst many candidates scored 8 on this question, a very large number of candidates did not appear to know what they were looking for, often quoting long sections of text or the evidence that supported the required reason. Others ignored the explicit instruction 'to use the author's exact wording' and produced paraphrased answers that lost some/all of the original meaning.

**23**

The term 'intermediate conclusion' is clearly not well-understood by many candidates. Common, incorrect answers included the reasons from question 22.

**24**

Most candidates found this question straightforward and gave one of the two pieces of evidence. Those who did not receive credit missed out important information (such as the dates) or gave the evidence that supported the author's argument rather than the counter argument.

**25**

Most candidates gave the obvious answers of cheaper/easier/faster.

**26a**

Amongst the candidates who knew what they were looking for, marks were sometimes lost by saying 'congestion' rather than referring to the 'congestion caused by lorries'. Many candidates seem unfamiliar with the 'if .....then' format of hypothetical reasoning.

**26b**

Many candidates understood that there was a relationship between the reasoning and the other information, but struggled to express the idea that a 1:50 relationship would make a *significant/large* difference to the congestion caused by lorries. Similarly, whilst many candidates understood that there was no evidence to show that companies would be willing to use the rail network, few were able to go onto say that this could mean that there would only be a very limited improvement in congestion.

**27**

Many candidates focused on the evidence relating to the increase in traffic volume and mileage rather than the author's evidence about road building. Many candidates understood that '3 times the size of Nottingham' was too vague to be useful, but very few were able to place this into a comparison with the extent of the existing road network.

**28a**

The most common incorrect answer to this question was *ad hominem* (which was then often well explained in 28b) meaning that only a minority of candidates were able to spot the straw man.

**28b**

It is not an easy task to explain the reason why this particular section of the reasoning is flawed. Whilst candidates were often able to get the sense of the deliberately exaggerated or extreme view of the opposition argument, only the very best understood that this extreme version was set up deliberately in order to 'knock down' the whole opposition argument. The majority of the weak or incorrect answers focused on merely disagreeing with the author (national parks are protected/it is not possible to build roads in national parks) and completely missed the idea that a flaw is in the pattern of the reasoning, rather than an issue about the truth (or otherwise) of the reasons/evidence.

**29**

It was pleasing to see so many candidates work out this tricky question and produce accurate and succinct answers. Many candidates gave a set of possible options for traffic levels after re-opening and did not appear to have understood that their answer had to support the author's reasoning.

**30**

The majority of candidates had a clear sense of the comparison at work in this question and gave short, accurate answers. Unfortunately, some candidates commented on the type or pay of the new jobs or suggested that the number of jobs at the larger business had to be *more* than that lost at the small businesses.

**31**

Certainly a more demanding question, but one that goes to the heart of assessing an argument. Candidates need to be able to show why a reason or evidence does or does not support a particular strand of argument. The best candidates understood that the argument was about economic factors not supported by reasons and evidence that were clearly relevant to a social/health argument. Weaker candidates were unsure how to approach this answer, with many arguing that hospital made more economic sense because they employ so many people – in essence arguing that the introduction of hospitals into the argument did support the rest of the reasoning in the paragraph.

**32a**

There was a definite improvement in understanding of the components of an analogy, and many candidates were able to accurately identify these components and the sense of the outcome being negative. 'Car addicts' was often swapped for 'car users' or even just 'cars' which lost some of the needed precision. Some answers also lost the sense of 'giving' which is a key part of the analogy.

**32b**

Far more candidates are able to tackle this type of question and there were far less answers that merely repeated the analogy (32a) or suggested differences of no consequence. Most answers focused on the medical/physical addiction vs. a social addiction or the direct consequences of drinking alcohol vs. the indirect consequences of driving a car. A few candidates correctly mentioned that there could be benefits in driving a car for a car addict (driving for work etc) in comparison to the almost totally negative outcome of an alcoholic drinking alcohol.

**33**

The overwhelming majority of candidates scored 1 mark on this question. The second mark was awarded when candidates showed an awareness that the author does not need to assume that *all* the shops/services have moved (to places inaccessible to those without a car). This has become a common type of question.

**34**

It was disappointing to see how few candidates know what a general principle is. As a result, the majority of the answers given were incorrect. A number of candidates were able to say that 'freedom of choice is a good thing', (or similar), but only the very best candidates were able to put the general principle in the context of the paragraph by saying that 'freedom of choice in shops and services is a good thing.'

**35**

In some ways this question is similar to question 31 in that it is asking candidates to look at the support given to a particular strand of argument. Many candidates were able to access some marks by commenting on how easy it would be to replace car journeys with cycle journeys or by repeating the statistics about the number of very short journeys that could be done by bicycle. However, very few got to the idea that this would have a significant effect on congestion. The author's conclusion is very strong – a fantastic way to solve congestion – and for 2 marks candidates needed to show that the author does give us evidence and reasons that suggest that cycling would make a very significant impact or that, in addition to reducing congestion, there would be other important benefits.

**36**

Whilst most candidates understood that there was a generalisation at work here, the accuracy of their phrasing did not always allow them to access the second mark. The best answers showed why London was not representative (the most congested/busiest) or tackled the issue that what is true for short journeys in heavily congested London is unlikely to be so for journeys in more rural/less congested areas.

**37**

There have often been similar questions in the past that have given candidates the opportunity to point out relevant differences between cities or countries. Asking for similarities seemed to pose slightly more problems for candidates and only very few went for the easy options of cycle lanes/cycle facilities/number of very short journeys. However, most candidates scored at least one mark, understanding that the issue they picked had to be in some way relevant to cycling. Common 1 mark answers thus referred to the weather, landscape or average journey to work.

**38a**

More candidates appeared familiar with 'tu quoque' than 'straw man' in 28a. There were some very good explanations, showing how the dangers of one activity could not be used to diminish or take away the dangers of some other activity. Weaker answers were more descriptive, repeating the author's wording to some extent. A significant number of candidate continue to give counter arguments, commenting that cycling is in fact more dangerous than driving a car or that the author had overestimated the dangers of driving a car. Answers like these do not receive credit.

**39**

Many candidates wanted to turn this question into an argument about congestion charging and missed the instruction in the question that asks them to base their answer on the successful scheme in London. Many made no mention of the London scheme at all and these answers were only awarded partial performance marks. However, we saw many good answers that made use of differences in public transport, availability of alternative routes, necessity of journeys etc. between London and the rest of the country to show that the scheme would or would not work nationwide. Both in this question and the similar one in January 2007, candidates have demonstrated the ability to manage complex comparisons.

**40 and 41**

There is no doubt that we are seeing more succinct and structured answers to these questions. The content of the answers was perhaps unsurprising – pollution/environmental issues/accidents etc – but the way some candidates were able to turn this into persuasive and flowing answers was particularly pleasing. Better candidates also ably demonstrated the way that evidence and example can improve and extend an answer. Many candidates have also understood the need for clearly and accurately stated conclusions (intermediate and main). Far fewer arguments headed towards the wrong conclusion.

However, it was somewhat disappointing to see so many candidates writing what amounted to a list of ideas without any obvious structure or development. The ability to use and form intermediate conclusions is part of the mark scheme and candidates must demonstrate this skill to access the higher marks. Some candidates made up absurd evidence and reasons to try and make their argument work. This is not helpful and candidates would be well advised to avoid this strategy.

**F493 June 2007: Principal Examiner's Report:**

The response of candidates to this paper continues to be positive overall. The issues raised by 'designer babies' appeared to be well enough appreciated as to produce some interesting and penetrating responses. Those candidates who achieved grades A or B were those who best demonstrated very good argumentative and reasoning skills. They were also those candidates who understood most clearly the importance of using the evidence provided in the Resources Booklet. Centres must continue to direct their candidates to the instructions in each question which refer them either to specific documents or to the evidence as a whole.

There is evidence that some candidates are approaching this paper in too generalist a manner. Some evidently able candidates produced well written and even quite engaging essays in response to question 5 that, unfortunately, could not be credited with the sort of marks the candidate probably expected. Again, the instructions given for questions 4 and 5 are quite explicit. Candidates do need to ensure that they focus on what they are asked to do rather than merely expounding their own opinions about the topic covered in the resources booklet.

**Comments on individual questions**

**Question 1:** Most students were able to respond to this question adequately. Some students had been taught categories of vagueness, ambiguity and context and proceeded to apply these to the term 'designer babies'. These responses, albeit on the formulaic side, were nonetheless generally quite sound. The best candidates ensured that they did refer to the relevant document(s). Some candidates spent too much time and space on this question, and on questions 2 and 3, given the relative few marks allocated. Centres should remind candidates of the likely distribution of the marks across this paper.

**Question 2:** Students generally found this question very straightforward, with the majority getting all six marks. The more effective approach tended to be the one used by candidates who clearly identified a relevant factor - e.g. the health of a baby or the cost of the process - followed a brief explanation/development/reference to the relevant document.

**Question 3:** A fair number of students gave a reasonable response to this question. The better candidates were able to identify that the views of church leaders might not be representative of all Christians, let alone those outside of the religion. Some candidates usefully mentioned that church leaders might lack the specific expertise in providing decisions on this area. However, quite a few candidates simply accused church leaders of bias and left it at that. There was also a tendency here and there to some ill-informed anti-religious rant. A failure to refer to the document cost even otherwise able candidates at least one mark.

**Question 4:** This question was phrased differently from the similar question in the previous two papers, but few candidates seemed to have found this to be a major problem. Some candidates applied all of the criteria to the choice selected; others dealt with two or three criteria; few candidates used only one criterion. A small minority ignored the criteria altogether and so could gain little credit. However, a significant number of otherwise good/very good responses – i.e. who understood and applied the criteria very well to produce well argued evaluation - lost marks through not using the resources booklet sufficiently, or in some cases not at all. A response that makes no reference to the evidence provided is very unlikely to gain more than half of the marks allocated. Centres should also note that the best candidates were those who structured their responses in such a way as to enable the reader to detect that reasoning was taking place: reasons, evaluation, use of evidence, intermediate conclusions (as each criterion was applied) and some sort of overall conclusion as to the appropriateness of the choice being discussed.

**Question 5a:** The majority of candidates were unable to write down and fully explain a dilemma, and many merely stated a particular problem. Candidates should be aware that a dilemma involves a decision that needs to be made and one which will have negative/unfavourable consequences either way. There should, therefore be some indication of what these negative consequences might be. (Interestingly, quite a few candidates who did poorly on question 5a went on to produce a competent treatment of a relevant dilemma in 5b.)

**5b:** A significant number of candidates appeared to run out of time when it came to giving this question the attention it demands. Many candidates, especially those short on time, devoted lots of their answer to outlining what different principles mean in the abstract before applying them to the dilemma. Relatively few candidates seemed wholly comfortable with the principles they were using, and many had only a tentative understanding of them. The better candidates were more confident, and were able to use principles as tools to analyse the problem in a useful fashion.

A significant minority of candidates - possibly more than in the previous two papers - demonstrated some excellence in the identification and application of different ethical principles. In particular, it was good to see some candidates were able to cite Kant's principles of universalisability and not treating people as a means to an end accurately to come up with some convincing reasoning. Other candidates made excellent use of Utilitarianism in evaluating the usefulness of balancing up the needs of the individual against those of society and even balancing short and long term needs. There were even a few instances of candidates considering preference utilitarianism and balancing that against hedonic utilitarianism. While candidates are not necessarily required to go to such lengths, even in excellent responses, it is important that they do understand the ethical principles they are trying to apply, on whatever level of complexity they might be operating.

There are still quite a number of responses that apply ethical theories with some degree of inaccuracy. Candidates need to at least be aware that concepts of deontology and consequentialism are not simplistic. On the whole though, those who argued from ethical principles tended to produce better responses as they had more content to evaluate.

Centres need to note again the importance of stressing to candidates the requirement to refer to the documents in their arguments; also, the importance of being aware that what is required is a structured argument that, in the case of this question, attempts to show how the dilemma might be resolved. The importance of Assessment Objective 3 - communicating and effective and coherent argument - can hardly be overstated when it come to the examiner's assessment of this question.

## Principal's Report F494 Critical Reasoning

### General Comments

Overall, performance on this paper represents a considerable improvement from June 2006, and it is evident from many candidates' answers that they have been taught, that their teachers have attended the training OCR has offered, and that they have made use of the Unit 4 book published last October. It was particularly evident at the top end that candidates were practised in the skills tested and fluent in the language of critical thinking. However, performance at the bottom end was disappointing, with many candidates not even appearing to have reached AS level attainment, and demonstrating little familiarity with the concepts or language of critical thinking.

### Section A

#### Multiple Choice

In general, candidates seemed able to attempt the multiple choice. Some questions were found generally easy by candidates, and others were found generally hard, but all discriminated between candidates. Questions relating to the analysis of argument and the identification of flaws or weakness in reasoning seemed more challenging than other question types, and these produced greatest discrimination between the top and bottom. It is tempting to infer from this that a significant minority were unfamiliar with the technical aspects of critical thinking, and this would be borne out by performance in the written paper.

- Q1** This was intended to be an easy starter question, and most candidates did indeed choose the right answer. It is perhaps a little worrying that 23% did not notice the argument which even included 'so' as an obvious argument indicator.
- Q2** In previous sessions structure diagram questions have been done well. In this session, however, only the best candidates identified that there was a chain of reasoning in the question and picked B.
- Q3** Most candidates picked the right answer and the question discriminated well.
- Q4** Many candidates identified an intermediate conclusion as the main conclusion. Others simply went for the content of the last line. Identifying a main conclusion is a fundamental skill in critical thinking. There is guidance on this matter in a variety of textbooks.
- Q5** Identifying assumptions can be difficult for candidates because they are looking for something which is not written down. Nevertheless, it is a core skill in critical thinking. It is also important in every day life to be able to identify the unstated claims behind the stated. Centres would do well to put more emphasis on this skill. Many candidates chose D, 'The most important aspect of justice is preventing more offences.' Although the passage mentions deterring offenders and discouraging re-offence, at no point do we have to agree with an unstated claim that, 'the *most important* aspect of justice is preventing more offences,' in order to accept the main conclusion. The conclusion would not be weakened if we thought that punishment, or fairness, for example, was more important than preventing more offences. In order to move from the strand of reasoning relating to the effect on offenders and victims, to the intermediate conclusion that, 'imposing a fixed penalty fine barely counts as justice at all,' it does have to be assumed that for justice to be done it is important that the offender suffers.

*Report on the Units taken in June 2007*

- Q6** This question was intended to be challenging, and it did indeed discriminate between the top quartile of candidates and the rest.
- Q7** This question was intended to be a relatively straightforward question with a simple passage and a simple flaw of generalisation from too small a sample. Only 42% of candidates were able to identify this, however.
- Q8** This question required logical thinking and seemed a step too far for most candidates. We cannot conclude that one person had a camera phone but did not use it for taking pictures that night, because we do not know that ALL people wearing glasses had camera phones. We cannot conclude that two people must have had digital cameras because two people may have shared one camera, which may have been digital or film (as film photos can be scanned onto a website). Drawing conclusions and logical thinking are core skills in critical thinking.
- Q9** The majority of candidates selected the correct answer.
- Q10** Most candidates got this question right, although there was clear discrimination between candidates.
- Q11** Candidates found this question tricky. The passage restricts the options, claiming that, 'digital industries need to sell fully integrated end to end experience such as the iPod rather than stand alone devices.' This clearly restricts the options; it may be that there is a need for both. The passage has supported the benefits of the fully integrated experience but not shown that there is no need for stand alone devices. Thus B is the right answer. However, half of the candidates chose C, 'it generalises from just two examples ... to the whole digital industry.' The passage does not generalise, it uses two specific examples to illustrate general claims about frustration. This is a significant difference. It is dealt with in the AS and A2 books, and candidates have previously been expected to make this distinction at AS.
- Q12** Candidates were distracted by the statement 'some consumers may not believe...', which, as well as being overly vague, is merely an expression of disagreement rather than a reason to counter the claim.
- Q13** Only half of the candidates were able to identify that A was an argument with reasons to support a conclusion. Almost half chose C, which is simply a collection of statements about Britishness which do not support the opening statement, or indeed any of the other statements contained in the passage.
- Q14** A majority of candidates were able to identify the main conclusion.
- Q15** This question was intended to test the most able, and it did that.
- Q16** By contrast, this question was intended to take the pressure off by providing an easier answer, and candidates performed well, with strong discrimination between top and bottom.
- Q17** Candidates were overwhelmingly able to choose the right answer.
- Q18** This question did challenge candidates, but just under half chose the right answer.
- Q19** The majority of candidates selected the correct answer.
- Q20** Candidates were able to answer this correctly on the whole, and it showed good discrimination.



## Section B

### General comments

In general, performance on the written part of this paper was pleasing and showed marked improvement on the June 2006 session. Most candidates attempted the right tasks so it was possible to tell that the questions did indeed discriminate between those with strong critical thinking skills and those with weaker skills. Most candidates demonstrated that their thinking skills had developed considerably from AS. There was a significant and pleasing increase in the number of candidates who produced excellent, pertinent and focused answers. There was evidence in the scripts that candidates had worked with the OCR endorsed textbook, and that teachers had passed on understanding from the training offered by OCR during the course of the year. Regrettably, there was still a significant minority of candidates, generally clustered in particular centres, who did not know how to approach the questions and showed little evidence of having practised the skills tested by the examination.

### Question 21

Most candidates attempted the right task, although some candidates still focused on the meaning of the elements rather than their role in the structure. Many candidates were able to identify the name of the elements, but failed to gain the second mark by giving a generic definition rather than explaining how it functioned in the structure of this particular argument.

Disappointingly few candidates made the connection between their answers in this part of the paper and those to later questions. Question 21 is intended to help candidates by guiding their analysis, and pointing them in the direction of key, or particularly weak, parts of the structure which would assist their later evaluation.

- a) A pleasing number of candidates were able to say that this was a counter claim and dismissal of it, or that it was a response to an anticipated counter argument. A worrying number, however, said that it was the main conclusion, or just gave the gist.
- b) Most candidates were able to say that this was an example, but few were able to say that it was an example of images to support the author's claim that we have slipped from a culture based on words to one based on images. The second mark could have been accessed simply by mentioning images.
- c) Most candidates gained a mark for identifying that this element was evidence, but few gained the second. Even those who recognised that this evidence was related to Greenfield's question whether technology could be changing our brains, omitted to mention that it was a question, and turned it into a positive claim. It was felt that in the synoptic paper at A level Critical Thinking, it was not unreasonable to expect that candidates should be able to differentiate between a question and a claim for the second mark. Doing so would also have helped candidates with their evaluation in Q24.
- d) Some candidates were able to identify that this was a rhetorical question, although not as many as referred to it as such during their evaluation in Q24. A worrying number said that it was the main conclusion. I can only hope they were guessing without thinking, because if they had thought about it, and still got it that badly wrong, it would be a matter for some concern.

**Question 22**

This was generally done very well and many candidates were able to gain a mark in level 4. A significant minority gained 9/9 for this question. The most common serious error was failing to identify that the first sentence of the paragraph was the main conclusion of the paragraph, and suggesting that the final sentence was the main conclusion. Common, but less serious errors included omitting the example from the analysis, and failing to separate the reason and intermediate conclusion in the last sentence.

**Question 23**

Some of the evaluation produced by candidates in this question was of a very high standard indeed. The best candidates noticed and evaluated the key points that Ashley contradicted herself, used examples which countered her reasoning rather than supported it, made huge assumptions and used unsupported assertions and sweeping generalisations rather than providing reasons to support her claim. These candidates assessed how far these weaknesses affected the strength of the support for the claim that our culture has slipped from one based on words to one based on images, and concluded that there was little rational support for this claim, but suggested as an alternative, that Ashley had supported the weaker claim that the use of images was increasing.

The best candidates used the language of critical thinking accurately, naming flaws and considering the extent to which they strengthened or weakened the support for a claim. These candidates used 'assumption' to refer only to unstated claims which were essential for the argument to work, and talked about unsupported claim (or possibly opinion) where the author had made sweeping, unsupported assertions. However, far too few candidates had this level of technical expertise and expression. Far too many simply went through Ashley's unsupported assertions calling them assumptions, clearly unaware that an assumption in critical thinking is unstated.

There was a clear distinction between candidates who evaluated the reasoning, considering the way the elements worked together, and evaluating the examples in the context of what Ashley wanted them to do, and those candidates who disagreed with or countered the reasons, possibly identifying the use of a sweeping generalisation along the way. The occasional candidates who insulted the author as idiotic, old or unthinking tended to reveal more about their own thinking than about the author's.

Although most candidates referred to the example of logos being more familiar to children than national flags, most simply commented that this was unsupported (which it was) rather than homing in on the key point that, as flags are images, this example does nothing to support Ashley's point that we have slipped from a culture based on words to one based on images. Similarly, most candidates identified the sweeping generalisation in the claim that everyone under 30 finds textspeak normal, whilst everyone over 40 finds it menacing. Only a minority commented that textspeak is in fact a form of verbal communication rather than image-based communication, or assessed the logical leap from textspeak to the structure of the whole English language changing.

**Question 24**

Again, the best candidates produced some excellent answers, really focusing on the support for the claim that politicians should read Greenfield's speech. Very few identified that this was a weak claim which required little support, but a significant minority concluded that, despite the many weaknesses in the reasoning, there was enough to support the claim that politicians should read the speech.

Most candidates worked through the text paragraph by paragraph, rather than homing in on the significant aspects. This meant that many wasted time talking about irrelevant parts of the text.

Although it was possible to attain full marks without mentioning the distinction between Ashley's reasoning and Greenfield's, and many did gain 15/15, it was disappointing how few candidates even mentioned the obvious appeal to authority. A handful of candidates made good evaluative comments about the entanglement between Ashley's commentary and Greenfield's speech. Most of the candidates who did mention the appeal to authority were able to say that, as a neuro-biologist, Greenfield ought to have enough expertise to make valid comments. However, many thought that as she was not a teacher or psychologist she was not able to comment on learning, which betrayed a lack of understanding. A worrying number discredited Greenfield entirely, saying, 'it's only one woman's opinion,' or saying that an appeal to authority is a flaw.

### **Question 25**

Performance on this question was most disappointing, as in previous sessions candidates generally produced their best answers when developing their own reasoning.

The topic for this question appealed to candidates and all had something to say. Many managed to cover several pages with their opinions on the subject of technology. They would have done better to spend more time thinking before putting pen to paper to produce a smaller volume of writing more tightly focused on the specific claim that 'technological *change* should be welcomed.'

A significant minority did consider what technology actually was, and whether change should be welcomed. Some even considered the nature of change. The most successful candidates produced cogent, considered, well structured arguments, with examples illustrating reasons which supported intermediate conclusions which in turn supported the main conclusion. These candidates argued that previous technological change had, on the whole been beneficial, and that there were signs that future change may be beneficial. They generally considered the counter arguments that technological changes at the moment are pushing moral boundaries and that improvements in the technology of war are harmful. Many found ways of responding – often that welcoming technological change did not mean uncritical acceptance of everything, but an attitude of willingness to take the best and regulate the worst. These candidates were able to access high marks.

However, typically, candidates discoursed on the theme of technology and its putative benefits. Many structured their work by theme rather than by supporting claims. It was common for candidates to fill three pages with rhetorical claims, not one of which gave the reader any reason to accept any of the others. Even well-prepared candidates who had performed well in other areas, and who used words such as 'therefore' to indicate what they took to be their intermediate conclusions, often did not actually give rational, or logical support to these claims. There were many huge, unsupported leaps, often from, 'technology has been beneficial,' to, 'technological change can only be beneficial.' Many candidates conflated evolution, change and technological change. A number suggested that we should welcome technology so that we are in a position to embrace it because it is coming whether we like it or not. Such candidates were able to gain marks where their answers contained passages of reasoning, or where they had ideas and examples with relevance to the topic.

*Report on the Units taken in June 2007*

A great many candidates referred to technological advances in medicine, communications, the internet, travel and space exploration. The best gave specific examples, such as gene therapy, GM food, transplant technology and used them to support their argument. Weaker candidates tended to refer only to the technology mentioned in the stimulus passage. Many thought that email was free, and never got lost. The weakest simply disagreed with the stimulus passage or wrote far too much in an unfocused way. There was a prevalence especially among, but regrettably not limited to, the weaker candidates, of blatantly invented and often implausible evidence. This is a practice which should be discouraged.

Far too many candidates paraphrased the given claim as, 'we should welcome technological change with open arms,' or 'we should embrace / embrass / embarrass technological change with open arms.' Such use of cliché was typical of weaker candidates. Language in critical thinking should be a precision tool rather than a blunt object.

One final concern relates to candidates who have been taught that they must structure their work, and who even label reasons, intermediate conclusions and evidence. However, this sub-group of candidates seems unable to make the logical links necessary, or to produce reasons which do support conclusions, with the result that they are randomly labelling sentences in the hope that this will make them reasons or intermediate conclusions.

**Advanced GCE Critical Thinking H450/H101  
June 2007 Assessment Series**

**Unit Threshold Marks**

Unit		Maximum Mark	a	b	c	d	e	u
F491	Raw	80	57	48	40	32	24	0
	UMS	120	96	84	72	60	48	0
F492	Raw	120	73	64	55	46	39	0
	UMS	180	144	126	108	90	72	0
F493	Raw	80	56	49	43	37	31	0
	UMS	120	96	84	72	60	48	0
F494	Raw	110	72	64	56	48	40	0
	UMS	180	144	126	108	90	72	0

Specification Aggregation Results

Overall threshold marks in UMS (i.e. after conversion of raw marks to uniform marks)

	Maximum Mark	A	B	C	D	E	U
<b>H050</b>	300	240	210	180	150	120	0
<b>H450</b>	600	480	420	360	300	240	0

The cumulative percentage of candidates awarded each grade was as follows:

	A	B	C	D	E	U	Total Number of Candidates
<b>H050</b>	8.2	23.0	44.7	66.7	84.8	100	24292
<b>H450</b>	10.8	29.7	54.5	77.8	93.8	100	2196

For a description of how UMS marks are calculated see; [http://www.ocr.org.uk/exam\\_system/understand\\_ums.html](http://www.ocr.org.uk/exam_system/understand_ums.html)

Statistics are correct at the time of publication

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