

Critical Thinking

Advanced GCE A2 H450

Advanced Subsidiary GCE AS H050

Mark Schemes for the Units

June 2007

H050/H450/MS/R/07

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All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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Advanced Subsidiary GCE Critical Thinking (H050)

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INSTRUCTIONS ON MARKING SCRIPTS

Excerpts from the Instructions for Examiners booklet.

For many question papers there will also be subject or paper specific instructions which supplement these general instructions. The paper specific instructions follow these generic ones.

1 Before the Standardisation Meeting

Before the Standardisation Meeting you must mark a selection of at least 10 scripts. The selection should be drawn from several Centres. The preliminary marking should be carried out **in pencil** in strict accordance with the mark scheme. In order to help identify any marking issues which might subsequently be encountered in carrying out your duties, the marked scripts must be brought to the meeting.

2 After the standardisation meeting

- a) Scripts must be marked in **red**, including those initially marked in pencil for the Standardisation Meeting.
- b) All scripts must be marked in accordance with the version of the mark scheme agreed at the standardisation meeting.
- c) **Annotation of scripts**

The purpose of annotation is to enable examiners to indicate clearly where a mark is earned or why it has not been awarded. Annotation can, therefore, help examiners, checkers, and those remarking scripts to understand how the script has been marked.

Annotation consists of:

- the use of ticks and crosses against responses to show where marks have been earned or not earned;
- the use of specific words or phrases as agreed at standardisation and as contained in the final mark scheme either to confirm why a mark has been earned or indicate why a mark has not been earned (eg indicate an omission);
- the use of standard abbreviations eg for follow through, special case etc.

Scripts may be returned to Centres. Therefore, any comments should be kept to a minimum and should always be specifically related to the award of a mark or marks and be taken (if appropriate) from statements in the mark scheme. General comments on a candidate's work must be avoided.

Where annotations are put onto the candidates' script evidence, it should normally be recorded in the body of the answer or in the margin immediately adjacent to the point where the decision is made to award or not award the mark.

d) **Recording of marking: the scripts**

- i) Marked scripts must give a clear indication of how marks have been awarded, as instructed in the mark scheme.
- ii) All numerical marks for responses to part questions should be recorded unringed in the right-hand margin. The total for each question (or, in specified cases, for each page) should be shown as a single ringed mark in the right-hand margin at the end of each question.
- iii) The ringed totals should be transferred to the front page of the script, where they should be totalled.
- iv) Every page of a script on which the candidate has made a response should show evidence that the work has been seen.
- v) Every blank page should be crossed through to indicate that it has been seen.

e) **Handling of unexpected answers**

The standardisation meeting will include a discussion of marking issues, including:

- a full consideration of the mark scheme in the context of achieving a clear and common understanding of the range of acceptable responses and the marks appropriate to them, and comparable marking standards for optional questions;
- the handling of unexpected, yet acceptable answers.

There will be times when you may not be clear how the mark scheme should be applied to a particular response. In these circumstances, a telephone call to the Team Leader should produce a speedy resolution to the problem.

**Mark Scheme F491
June 2007**

F491 Credibility of Evidence**Question 1**

Do not credit answers that do not refer to a medical context. (Credit this in the widest sense)
Do not credit answers that refer to the specifics of this MMR dispute.

Credit any three correct **weaknesses**. (Do not credit strengths)

3x1 mark

Forward slashes indicate alternatives.

Candidates may be credited for more than one point in each section.

Examples of correct answers:

In the context of such types of medical dispute:

There may be motives/ vested interest to misrepresent the truth (interpret favourably / selectively report / falsify reports)

by the medical authorities / companies in the medical field:

to maintain public confidence in the medical procedure and NHS

to avoid costly cases of litigation.

by doctors /researchers:

to gain career enhancement.

to avoid loss of patient confidence or loss of career.

by those suffering from the consequences:

to gain greater compensation.

to raise awareness to improve services for their condition.

to identify a cause so that they can feel that they can seek a remedy.

by the media:

to raise awareness of the possible dangers.

to exaggerate the dangers to attract readers.

There may be difficulties in perceiving the truth of the events

There may be technicalities which need expert knowledge to be interpreted correctly.

The confidentiality of medical records may prevent some information from being publicised.

The specific conditions of some patients may be overlooked as contributory factors.

There may be difficulties in judging the truth of the reports

Confidentiality of patient records may prevent the ability to refute or corroborate claims.

If the dispute is in a very specialist area, there may be problems in identifying experts to give second opinions.

[AO3 3] (3)

Question 2

(a) Credit one mark for up to two correct reasons.

2 x 1 mark

The diagnostic procedures may have been improved.

The diagnostic procedures may have been increased.

There may have been changes in diagnostic definitions.

The population of California may have increased.

The population in California may have changed in composition.

There may have been a rise in other contributory conditions to autism.

- (b)** Credit two marks for a developed explanation or up to two marks for two correctly stated points. 2 marks

These figures are more significant because the graph uses rates and not numbers, which would take into account increase in population or change in composition.

The graph indicates a rise in autism even when the MMR vaccine was withdrawn demonstrating a rising trend independent of the MMR vaccination.

The graph indicates a rise in autism before the MMR vaccine was introduced, demonstrating a rising trend independent of the MMR vaccination.

The graph indicates a fall in autism during the time the MMR vaccinations were being given, demonstrating no necessary link between the two. [AO2 4] **(4)**

Question 3Credit **1 mark****a second mark****an additional mark**

for each correctly identified criterion of credibility,
 if this is used to correctly to assess the document
 if it is correctly supported from the text – *italicised below*.

For partial performance, where the candidate correctly assesses individual sources within the document that would affect its credibility, rather than the document itself, credit one mark each time. (A maximum of 6 marks)

Examples of correct answers that would gain three marks:

New Scientist	Ability to observe/primary info	The document contains research related to the period when the triple vaccine was withdrawn, so the rise without the vaccine could be clearly seen.	Graph- ' <i>Yokohama study</i> '
	Expertise	The article contains data from relevant medical fields.	<i>'Yokohama rehabilitation Centre'</i>
	Neutrality	Balanced representation of data – the graphs which had been used as evidence to support both sides of the dispute.	Use of figures and statistics <i>'California graph'</i> and <i>"Yokohama study"</i>
	Reputation/VI	Possible VI to represent the debate accurately to maintain the credibility of their magazine in cutting edge scientific reports.	<i>'New Scientist'</i>
NIP	Expertise	As a national programme, it might be expected to have access to information on the effects of the various vaccines it uses, to be able to judge the relative effects.	As indicated by its title, <i>'National Immunisation Programme'</i>
	Vested interest	Possible VI to minimise the negative consequences to encourage use of the vaccine to prevent a greater problem – the effects of a measles and mumps epidemic.	<i>'Measles outbreaks have recently occurred in the UK'</i>
	Reputation/ VI	Possible vested interest to represent the situation accurately to maintain public confidence in them as part of a government funded programme.	As indicated by their website, ' www.cdc.gov/vacsafe/concerns/autism/autism-mmr.htm '

3x3 marks as above for each of the 2 documents

[AO2 18] **(18)**

TOTAL MARKS FOR SECTION A

AO2 [22] AO3 [3] [25]

Question 4

Credit as follows:

3x1 mark

(a) Implication: The number of cases of autism after MMR injections is not greater than the natural occurrence of autism.

The occurrence of autism after the MMR injection is a coincidence.

There is no causal link between the two.

(b) Additional information:

If the number of cases of autism after the MMR injections were greater than the natural occurrence of autism.

(c) Credibility:

eg

As a statistician he might have the expertise to set the figures within a wider context.

If unconnected to both sides of the dispute he would have no motive to misrepresent these figures.

[AO1 1, AO2 2] **(3)**

Question 5

Award one mark for each correctly identified assumption and one mark for a correct alternative explanation. 4x1 mark

Assumption There was a link between her son's autism and the MMR vaccination.

Alternative explanation

The two events were subsequent but not consequent.

The autism was a natural occurrence.

The autism was only noticed after the MMR injection.

Assumption A medical trend has been identified.

That autism is something that should be prevented.

Alternative explanation

The cases are specific and cannot be generalised.

That autism is natural and in some cases beneficial as in the connection with genius.

[AO2 4] **(4)**

Question 6

Credit 1 mark

Plus 1 mark

Plus up to two marks

for a relevant claim – *italicised below*,

for correctly identifying whether this is strengthened or weakened by a relevant criterion

for stating what is supposed to be true to make this assessment.

Examples of correct answers that would gain three marks:

Andrew Wakefield	Ability to observe	s	His claim, ' <i>There is sufficient anxiety in my own mind about the safety of the MMR vaccination and I think it should be suspended in favour of the single vaccine</i> ' is strengthened by his direct involvement with the cases claiming a link	if the cases he observed are not so specific that the findings can be generalised to a national picture.
	Expertise	s	It is strengthened because it relies on prior medical assessments about the condition of the children prior to the MMR vaccination.	if this perception was correct.
	Expertise	w	It is weakened by a lack of medical expertise as a gastroenterologist and not a neurologist.	if his experience in gastroenterology cannot inform a judgement about the neural causal connections.
	Reputation/VI	s	This claim is strengthened by a possible vested interest to give realistic advice to maintain his professionalism as a gastroenterologist.	if such a reputation is more important than the possible attention from such a claim.
	Vested Interest	w	This claim is weakened by a possible vested interest to bring attention to his work	if there is possible gain from this.
Elizabeth Miller	Ability to observe	s	Her claim, ' <i>There is no epidemiological evidence to suggest a link between the two</i> ' is strengthened by her examination of the Danish medical evidence	if this is typical of the full range of studies that have been carried out examining a possible link.
	Ability to observe	w	This claim is weakened by her examination of the Danish medical evidence	if it is not typical.
	Expertise	s	This claim is strengthened by her medical expertise	if her expertise in the Health Protection Agency is suitable to judge the causal connections.
	Expertise	w	This claim is weakened by a lack of expertise	if the above expertise is not suitable to judge the causal connections.
	Reputation/VI	s	This claim is strengthened by a possible vested interest to draw a realistic conclusion to maintain the professionalism of her position in the Health Protection Agency	if this is not in conflict with a greater duty to minimize the link to avoid the greater harm of a measles or mumps epidemic.
Reputation/VI	w	This claim is weakened by a possible VI to raise awareness of the risks from measles and mumps.	if told to take this stance by the government body.	

s = strengthens **w** = weakens credibility[AO2 16] **4x4 marks (16)**

Question 7

Credit two marks for a comparison which gives an evaluation of both sides, (one mark for one side.)

Expertise: Candidates may wish to use the relevant expertise of either party to argue that this is pertinent to either the specific instances or the wider picture, pointing out the weakness of the other side.

TOTAL MARKS FOR SECTION B [AO2 2] 2x1 mark (2)
AO1 [1], AO2 [24] 25 marks

Question 8

Credit the following points:

a) Corroboration**2x3 marks**

Credit 1 mark for a correct but unsupported point.

Credit 2 marks for a correct point that is accurately supported with one reference to the text.

Credit 3 marks for a correct point that is accurately supported with two references to the text.

eg

Both Dr Miller and Hideo Honda claim that there is no link between the MMR vaccine and the rise in autism. (1 mark)

Miller claimed, 'There is no epidemiological evidence to suggest that there is a link between the two.' (2nd mark)

Honda claimed that the vaccine, 'cannot have caused autism in the many children with autism spectrum disorders in Japan who were born and grew up in the era when MMR was not available' (3rd mark)

Other points that could be supported:

Prof Senn challenges the numbers via statistics and Lorna Wing by personal evidence.

The mother raises a possible link and Andrew Wakefield feels sufficient anxiety about this to advise suspension of the vaccine.

(Graphs can be included as a corroborating source.)

b) Conflict**2x3 marks**

Credit 1 mark for a correct but unsupported point.

Credit 2 marks for a correct point that is accurately supported with one reference to the text.

Credit 3 marks for a correct point that is accurately supported with two references to the text.

eg There is conflict as to whether there is a rise, (1 mark)

Dr Wing claims, 'In my experience I haven't seen any increase' (2nd mark)

The mother claims, 'We are facing an autism epidemic' (3rd mark)

Other conflicting interpretations that could be supported:

NIP denies long term effects, whereas Andrew Wakefield has sufficient anxiety to advise suspension of the vaccine.

(Graphs can be included as a conflicting source.)

c) Balance of evidence**4 marks**

Credit as follows:

- A statement of what each **side believes** (1 mark)
A link between the MMR vaccine and the rising figures for of autism v no link in the rise

- A **thorough** assessment with no **inaccuracy** (2 marks)
(A **limited** assessment with **inaccuracies** 1 mark)

The mother Dr Elizabeth Miller

Andrew Wakefield Hideo Honda

California graph v Yokohama study/graph

NIP

(accept Stephen Senn and Lorna Wing)

- An **explanation** of one source that **does not fit on either side** (1 mark)
Prof Stephen Senn simply explains about statistics and causal connections.
Lorna Wing comments on her experience of no rise.
Narrator gives both sides.

d) Weight of evidence **2 marks**

Numerically the weight of evidence lies with **claims – that there is no link in the rise** (1 mark)

with 4 to 6 sources leading to this conclusion and 3 (but accept 2) sources directly opposing this. (1 mark)

d) Quality of evidence on each side of the dispute **2x3 marks**

Award 1 mark for each correct assessment, up to 3 marks for each side, where the assessment is linked to a side of the dispute.

eg There is greater ability to observe (quality of data) on the side that claims there is no link:

limited data and ambiguous figures

wider range of data which is less ambiguous in terms of interpretation

eg 40 specific cases rather than numbers

v eg Danish national statistics using rates

Numbers from California

Yokohama city statistics based on rise without MMR

(1 mark)

(1 mark)

For partial performance where assessment is not linked to a side of the dispute:

award a maximum of two marks(2 x 1 mark) if there is a correct assessment of a source that would relate to one or both sides of the dispute.

- e) **Reasoned judgement** – greater likelihood that Award the judgement mark only if it links with the evidence given. **1 mark**

TOTAL MARKS FOR SECTION C [25] AO3 [25]

Quality of Written Communication Credit as follows across all answers **5 marks**

Level	Errors in spelling punctuation and grammar	Use of specialist vocabulary	Expression	Marks
1	errors are intrusive	little use of specialist vocabulary	order and expression impede understanding	(1-2)
2	errors are occasional	occasional use of specialist vocabulary	points exhibit some order	(3)
3	errors are few, if any	specialist vocabulary used where appropriate	well ordered and fluent	(4-5)

MARK GRID FOR PAPER

Question	Assessment objective
Section A	
1	AO3 3
2a	AO2 2
2b	AO2 2
3	AO2 18
Section B	
4a	AO1 1
4b	AO2 1
4c	AO2 1
5	AO2 4
6	AO2 16
7	AO2 2
Section C	
8a	AO3 6
8b	AO3 6
8c	AO3 4
8d	AO3 2
8e	AO3 6
8f	AO3 1
QWC	AO3 5
Total marks 80	AO1 1 AO2 46 AO3 33

AO1 [1], AO2 [46], AO3 [33] Total [80]

Mark Scheme F492
June 2007

F492 Assessing and developing Argument

Section A – Multiple choice

1	D	AO1 [1]
2	D	AO1 [1]
3	A	AO1 [1]
4	B	AO1 [1]
5	B	AO1 [1]
6	C	AO1 [1]
7	A	AO1 [1]
8	C	AO1 [1]
9	B	AO1 [1]
10	D	AO1 [1]
11	B	AO1 [1]
12	D	AO1 [1]
13	B	AO1 [1]
14	A	AO1 [1]
15	A	AO1 [1]
16	C	AO1 [1]
17	D	AO1 [1]
18	C	AO1 [1]
19	A	AO1 [1]
20	C	AO1 [1]

1 mark for each correct answer. Total mark to be doubled.

Total marks for Section A [40]

AO1 [40]

Section B

21 We should stop building new roads. AO1 [1]

22 For each precisely identified reason or equivalent paraphrase. **2 marks**
Where individual reasons have been correctly identified but the expression is less specific
or includes a minor reference to supporting evidence. **1 mark**

The reasons given to support the conclusion are:

- 1 (It is easy to see how) we can stop/reduce the congestion caused by lorries without building new roads.
- 2 The arguments in favour of new roads (based on traffic growth) can be easily dismissed.
- 3 It may be possible to reduce the amount of traffic in the future.
- 4 Building new roads does not make economic sense.
- 5 New roads (building) can have a negative social impact.
- 6 [Accept: either of the intermediate conclusions given below, but not if they appear as answers to Q23.] Any four AO1 4x2 **[8]**

Examples of 1 mark answers

- 1 We can reduce congestion caused by lorries by making better use of trains.
- 2 Those in favour of building new roads are wrong.
- 3 Congestion charging shows that it may be possible to reduce the amount of traffic.
- 4 New roads do not benefit the economy/lead to redundancy.
- 5 New roads can have a negative impact because they lead to a decline in freedom of choice.

The distinction between a 1 mark answer and 2 is accuracy. For 2 marks the wording needs to be close to the original/only minor variations. For 1 the wording may be different/change important words/add additional evidence etc.

23

- 1 Building new roads is against the public interest.
- 2 Building new roads can be shown to be unnecessary or positively harmful
or Building new roads can be shown to be unnecessary
or Building new roads can be shown to be positively harmful.
- 3 [accept Building new roads does not make economic sense but not if they have used it as a reason in Q22.] Any one AO1 **[2]**

1 mark versions may be of the form:

Building roads is not a good thing for the public/not supported by the public.

24

- 1 There has been a 700% increase in vehicles since 1950.
- 2 Between 2003 and 2004 the distance travelled by traffic on our roads has increased by 5.2 billion miles. Either AO1 **[1]**

25

Accept any reasonable answer here. Below are just examples:

- 1 It is cheaper to move goods by road.
- 2 It is more convenient to move goods by road.
- 3 The businesses are not near a rail terminal.
- 4 The destination of the goods is not near a rail terminal. Any two AO3 **[2]**

26(a)

If we want to reduce the congestion caused by lorries/**this** congestion, we need to persuade more companies to send their goods by rail.

AO1 [2]

Examples for 1 mark:

If we want to reduce congestion, we need to send more goods by rail.

If we want to reduce congestion, we need to persuade more companies to send their goods by rail.

26(b)

n.b. the answer to part b is not dependent on the answer to part a. A candidate who gets part a wrong can still get full marks on part b.

- Well supported
The ratio of 1:50 is very strong and only a few trains would make a significant difference to the amount of lorries, and hence congestion (could be in economic terms), on our roads.
- Poorly supported
Although the ratio is favourable, there is no evidence that this is a practical solution and therefore the take up may be so low that there is no significant impact.

Any one AO2 [2]

Examples of answers for 1 mark:

Well supported

There is evidence that it would work by taking so many lorries off the road.

50 lorries is quite a lot/1 train can carry the load of a lot of lorries.

Poorly supported

The author does not show that it will work/there is no proof that it will work/no evidence to support.

n.b do not credit answers that simply repeat the text without any analysis.

27

Candidates could achieve two marks by an accurate general description of the problem:

- 1 Although we are told how much space the new roads take up or extra miles of motorway, this gives little indication of how much new road building there is in terms of proportional increase.
- 2 The pro lobby gives very precise figures whilst the author resorts to an appeal to emotion and in the process attempts to hide the true scale of the road building.

Or (more likely) by giving an explanation of the weakness in the individual figures:

- 1 The area of Nottingham might not be very much as a % increase of roads and therefore is not an adequate response to the increase in traffic. Students may talk about lack of comparison to make sense of the area mentioned.
- 2 The figure of 2000 extra miles of motorway means little if we do not know how much we have already and might only represent a very small increase in motorway miles.
- 3 Although we are being told about the area of road building, we are not about where these roads have been built/how effective they were at reducing congestion.

Any one AO2 [2]

Example of answer for 1 mark:

It's an appeal to emotion; we do not know how big Nottingham is in roads/don't know how big Nottingham is.

28**a**

Basically it's a straw man but we could also accept reductio ad absurdum as it is rather an extreme view. **N.B. Ad Hominem is incorrect.**

AO2 [1]

b

It is a straw man because it is such an extreme view that it would be easy to argue against and win – even the most ardent road builder is unlikely to want to build a motorway through the lake district. Therefore, the author has deliberately set up a weak argument just to dismiss it. (By parodying the opposition, the author fails to address the main argument.)

AO2 [3]

The 3 marks are to be awarded as follows:

3 marks for an accurate explanation of the flaw with reference to the information in the passage.

2 marks for a simple explanation of the flaw with some reference to the information in the passage or a very accurate explanation of the flaw without reference to the text..

1 mark for an attempt to explain the flaw.

The answer to part b does not depend upon the answer to part a.

29

- 1 We would need to know that the amount of traffic **did not** return to the same or nearly the same level that existed **before** the bridge was closed.
- 2 The amount of traffic after the bridge re-opened was **lower** than it had been **before** the bridge was closed.
- 3 That the lower traffic levels when the bridge was closed were sustained to some extent when it re-opened.

Either AO3 [2]

Examples for 1 mark:

We would need to know that the traffic had not gone up again.

There weren't congestion problems after re-opening.

30

We would need to assume that the number of jobs created in the large businesses was **less/significantly less** than the number of jobs lost in the small local business.

Or the other way around: we would need to assume that the number of jobs lost in the small local business is **more** than/significantly **more** than the number of jobs made in the large business.

AO2 [2]

Examples for 1 mark:

There were less jobs created/big businesses did not make more jobs.

Comments which imply that the jobs lost could be equal to those gained (not greater/not exceed)

31

The issue here is that it is not clear that the reference to hospitals is an economic argument.

- 1 It is possible that building hospitals makes more economic sense than building roads, but as presented it is an emotional argument that has no foundation in economics/finance.
- 2 The evidence given might support a conclusion that there are better ways to spend the money looking at it from a social/health perspective, but does not support a view that road building does not make economic sense. It is reasoning that would support a different conclusion.
- 3 It does not support the reasoning because it is not about economic or financial factors, which is what the rest of the paragraph is about.
- 4 The money could be coming from different budgets so that money spent on roads is in no way reducing hospital building.
- 5 It does not support the argument because the author has not shown that the long term economic benefits of building a hospital are greater than those of building a new motorway.

Any one AO2 [2]

Examples for 1 mark

Hospitals have nothing to do with the economy/Hospitals do completely different things or similar.

Comparing costs does not show long term benefits.

Its and appeal to emotion./Hospitals have nothing to do with employment.

32(a)

The dangers/problems of giving/building roads to/for car addicts is compared to the dangers/problems of giving alcohol to an alcoholic

AO1 [2]

Examples for 1 mark

Giving roads to car addicts is compared to giving alcohol to alcoholics.

32(b)

Dissimilarity

- 1 A dissimilarity that weakens the analogy is the difference between alcohol and roads. Alcohol is the cause of the addiction whereas roads are not the cause of our addiction to cars – car use is!
[Amplification of this point. Candidates may well express this point as pointing out the direct link between alcohol and addiction/ill-health versus the indirect link with cars. For instance driving a car is not dangerous until something goes wrong. Alcohol is potentially always harmful. Others may comment that alcohol may be physically addictive in a way that addiction to cars cannot be.]
- 2 There is also a dissimilarity in the 'giving'. Giving alcohol to an alcoholic has immediate impact on that person. More roads may not be able to be used by our car addict.
- 3 There is a difference in the level of temptation or danger/problem. From what I understand, most alcoholics seek to avoid the temptation, but there are roads everywhere, so the impact of giving alcohol to an alcoholic may be far greater.
- 4 You can give alcohol to a single alcoholic but you cannot give a road to a single car driver. There is a pronounced difference in the giving.
- 5 There is a difference in the consequences/nature of the addiction as cars are needed by many people for work etc whereas being addicted to alcohol could never be considered a good thing.

Similarity

- The analogy may work in the sense that there is considerable evidence to suggest that these addictions are both bad for us – directly and indirectly. The author may be able to support the idea that we should not encourage (even indirectly) something harmful.

Any one

AO2 [2]

Examples for 1 mark:

You can't give a road to a car addict like you can give alcohol to an alcoholic.

Alcohol cause health problems whereas cars do not.

Alcoholics cannot resist alcohol but car owners can resist using their car.

33

- 1 The author must assume that the majority/ significant majority/very large number of shops and services mentioned are located in areas or positions that make it very difficult/impossible for people without cars to access them/get to them.
- 2 The author must assume that new road building has caused the majority/ significant majority/very large number of shops and services to move to areas accessed only by the new roads, and hence by cars, and not accessible by any other means.
- 3 The author must assume that the majority/ significant majority/very large number of shops are not located in places that people can get to by foot or public transport.
- 4 The author must assume that majority/ significant majority/very large number of shops and services in a particular areas have re-located after a new road has been built.
- 5 The author must assume that the majority/ significant majority/very large number of households that do not own a car have no access to a car (relatives/hire etc.).
- 6 The author must assume that the new roads have cut off/made inaccessible the majority/significant majority/very large number shops from people.

Any one AO2 [2]

Examples for 1 mark

It is only possible to get to shops by cars.

They all moved when the new road was built.

No-one can get to shops without a car.

34

- 1 We should not support our addictions/we should help people to overcome their addictions.
- 2 Planning should be based on the needs of everyone, rather than a car owning majority.
- 3 Planning/social policy should be based on equal opportunities/provide equal opportunities.
- 4 We/Governments should make social issues have priority of other issues.
- 5 Government/policy/ we should act to reduce harmful behaviour.
- 6 People should have freedom of choice in accessing services/shops.
- 7 We should not do things that lead to a negative social impact.

Any one AO3 [2]

Examples for 1 mark:

Addictions are bad

Addictions should be stopped.

We shouldn't favour people with cars.

Freedom of choice is a good thing.

Questions based on cycling away from congestion

35

The author makes a very strong conclusion that not only will cycling solve the problems of congestion, it is a fantastic way to do it. The author needs to support this with some pretty strong reasons. They are:

- 1 It would be easy to replace a **very significant** amount of all journeys made by car with journeys by bicycle, suggesting that lots of cars would be taken off the road. [The figures are difficult – and for two marks the students need to see what they mean without exaggeration.]
- 2 Not only would it solve congestion, it would also make us much healthier, (for instance, leading to improved mental and physical health and possibly, greater life expectancy.)
- 3 Not only would it solve congestion, it would also reduce journey times.

4 AO2 [2+2]

Examples for 1 mark:

Cycling would replace all/lots/some car journeys.

Any direct quote of evidence from the passage related to cycling replacing car journeys taken from:

62% of all journeys between 1 and 2 miles are made by car (even if rest of sentence is included)

41% of all journeys made in Britain are under 2 miles in length.

It would be easy to replace car journeys by bicycle.

But only credit one of them as they are all the same point.

Answers mentioning ONLY the greater speed of cycling or ONLY the health benefits of cycling are not to be credited

Candidates must make two separate points.

36

- 1 The author cannot generalise from short journeys in the specific example of central London to all journeys.
- 2 The weakness is that the conditions and times of journeys in central London may well not apply in other areas of the country/other towns (any relevant example to illustrate this will do).
- 3 The journey time is not the only issue – cyclists may have to change etc. first so that overall journey time is still more than that of a car journey.

Any one AO2 [2]

Examples for 1 mark:

London is not like everywhere else.

The author uses one example only.

The journeys might be quicker by car elsewhere.

37

There are lots of possible answers here. **Accept any reasonable point related to roads**, road conditions (including the weather), safety and social trends. For instance:

- The ease of use of the roads for cycling would need to be the same (just as flat or just as hilly or just as many cycle lanes.....).
- The amount of other traffic on the roads used by cyclists would have to be the same or very similar.
- The risks associated with cycling/the safety of cycling is the same or very similar.
- The incentive to use bicycles (through congestion charging, poor public transport...) is similar.

Any one AO3 [2]

Examples for 1 mark

The roads would have to be the same.

The weather would have to be the same.

The number of drivers would have to be the same.

Other road users would have to have the same mentality.

n.b two marks is the quality of the answer not an accumulation of points.

38**a**

This is a tu quoque or you also or two wrongs do not make a right flaw

AO2 [1]

b

- 1 The dangers of cycling cannot be justified or reasoned away just because the alternative activity of car driving is also dangerous.
- 2 The author cannot argue that the dangers of one activity – in this case cycling – are justified by using the dangers of another activity – sitting in a traffic jam in a car. Their argument is flawed on this basis.
- 3 The author cannot argue that we should put up with the dangers of cycling just because car driving is also dangerous.

Any one AO2[3]

The 3 marks can be awarded as follows:

3 marks for an accurate explanation of the flaw with reference to the information in the passage.

2 marks for an simple explanation of the flaw with some reference to the information in the passage or a very accurate explanation of the flaw without reference to the text..

1 mark for an attempt to explain the flaw.

n.b the answer to part b does not depend upon the answer to part a.

Total marks for Section B [50]**AO1[16]****AO2[26]****AO3[8]**

Section C**39**

Award 5 marks for a developed answer with relevant examples.

Award 4 marks for a developed answer with a relevant example.

Award 3 marks for a simple answer with examples.

Award 2 marks for an attempted answer with some reference to an example.

Award 1 mark for any relevant basic comment.

We need to look for an understanding of the comparison between London and other areas of the country. The examples given below support the idea that it would not have the same impact. However, a candidate who does show similarities is perfectly correct.

- 1 The example of London might well be relevant to other crowded cities such as Birmingham or Bristol but is clearly not relevant to motorways or rural areas. And even in London the congestion charging is only in central London, not even the whole city. Candidates could use the example of the M6 toll road which is under-used to show that people will avoid charges when they can, so the system may only work in areas where motorists cannot avoid the charges – as in a town centre. Outside of towns there is usually another route.
- 2 There is a problem of how it is charged – in London it is a one-off fee, but not per mile travelled. Would it be possible to replicate this across the country? There may be technological problems in doing this on motorways where traffic is travelling far faster and there is more of it.

AO3 [5]

N.B. Many candidates have answered this question by writing a little argument that shows that congestion charging will/will not work, but have missed the point of the comparison with the scheme in London.

Answers that make no reference to the scheme in London are to be capped at 2. So a really good answer that shows why congestion charging will/will not work gets 2.

Performance description for questions 40 and 41**Performance descriptions for 7-10 marks:**

Candidates present their own relevant further argument with a clear structure that includes at least two reasons supporting an intermediate conclusion. The argument is persuasive and relies only on one or two reasonable assumptions. The argument will also contain a further reason or reasons/examples/evidence/counter-examples that support the argument. The final conclusion is precisely stated.

Performance description for 4-6 marks:

Candidates present an argument that contains several reasons and there is an attempt to form an intermediate conclusion. The argument may be persuasive but relies more heavily on assumptions so that the link between reasons and conclusion is less clear. The argument may contain an example/evidence that has less relevance to the overall argument. The main conclusion is clearly stated.

Performance description for 1-3 marks

Candidates present an argument that contains one or more reasons of limited relevance to the main conclusion. There is no intermediate conclusion and use of examples is limited. The argument is unlikely to be persuasive without including several assumptions and the use of examples is very limited. Conclusions are imprecise and unclear.

40

The are several possible approaches here:

The easiest is to steal the ideas from the second passage and argue that cars cause pollution and stop us exercising.

Candidates could also attack car culture: our little safety bubble which lulls us into a false sense of security and then comment on the terrible death toll on our roads.

Car ownership leading to social fragmentation/break down of communities.

Use of resources and lack of recycling in car manufacture.

eg

R: Car engines produce pollution.

EV: The greenhouse gases carbon dioxide and other toxins such as carbon monoxide.

R: There are millions of cars in this country.

R: We use them for even the shortest of journeys when they produce the most pollution.

EV: 62% of all journeys between 1 and 2 miles are made by cars.

IC: Therefore cars are one of the biggest threats to our environment

IC: and therefore are a threat to our well being.

R: Travelling by car prevents us from taking much needed exercise to maintain a healthy heart and reduce obesity.

EV: Recent increase in obesity figures.

C: Cars are bad for us.

AO3 [10]

41

There are several arguments left over here that students could tackle. The most obvious ones are the environmental impact of new roads, either in the loss of SSSIs or farm land, or in terms of greater traffic and even more pollution. On the other side, figures about the damage that congestion does to the economy and the environment are persuasive – cars in traffic jams make more pollution than when going along normally.

For the conclusion:

Destruction of sites of natural beauty. Noise.

Extra roads seem to make more traffic and don't solve the problem.

Against the conclusion:

Alleviating the problems of small villages by building by-passes. Reducing the financial cost of congestion. Attracting tourists to a large cities. Job creation in the construction industry.

N.B. A candidate who gets the conclusion wrong in Q21 is *not* to be penalised twice. Mark question 41 on the basis of the conclusion given in Q21 – how well does the argument given in 41 support the conclusion given in 21?

eg An argument that supports the author's conclusion:

CA: Although new roads may relieve congestion

R: they take up vast amounts of space.

EX: The M6 toll road or any new motorway

R: And because this is such a small country/space is so short

IC: it is inevitable that some will go through valuable farmland, or worse beautiful countryside/SSSIs etc

EX: The M3 extension, the Newbury by-pass.

IC: Therefore new road building destroys vast areas of irreplaceable countryside.

R: The new roads may cut across existing by-ways, minor roads and footpaths

IC: making it difficult for walkers and cyclists etc to access the countryside.

C: Therefore, we should stop building new roads.

AO3 [10]

eg An argument that challenges the author's conclusion:

CA: Although new roads may in some cases damage the countryside

R: they can help remove heavy lorries from our picturesque and ancient villages by re-routing them onto by-passes

R: and because this will remove the damage caused by the pollution and vibrations to the foundations

IC: New road building will help preserve village buildings.

EX: Any little village in the Cotswolds or peak district.

R: People will be able to cross village roads in safety.

EV: Figures relating to the number of accidents on village roads.

R: And because village life will be more peaceful and tranquil

IC therefore new road building will improve village life.

C: Therefore we should build new roads.

AO3 [10]

Total marks for section C [25]

AO3[25]

Quality of Written Communication

Credit, where written communication is found, as follows across Section B and C answers:

	Errors in punctuation and grammar	Use of specialist vocabulary	Expression	Marks
Level 1	Errors are intrusive	Little use of specialist vocabulary	Points tersely expressed	1 – 2
Level 2	Errors are occasional	Occasional use of specialist vocabulary	Points exhibit some order	3
Level 3	Errors are few, if any	Specialist vocabulary used where appropriate	Well ordered and fluent	4 – 5

Section A total marks [40]

Section B total marks [50]

Section C total marks [25]

Quality of written communication [5]

Paper total [120]

Assessment objectives breakdown

Question	AO1	AO2	AO3	Total
Section A				
1 – 20	40			40
Section B				
21	1			1
22	8			8
23	2			2
24	1			1
25			2	2
26a	2			2
26b		2		2
27		2		2
28		4		4
29			2	2
30		2		2
31		2		2
32a	2			2
32b		2		2
33		2		2
34			2	2
35		4		4
36		2		2
37			2	2
38		4		4
Total for section B	16	26	8	50
Section C				
39			5	5
40			10	10
41			10	10
Total for section C			25	25
Quality of written communication			5	5
Total	56	26	38	120
%	46	22	32	100

**Mark Scheme F493
June 2007**

F493 Resolution of Dilemmas**Preamble:**

The Unit 3 Paper sets out to assess the candidate's critical thinking skills in the context of decision-making. To be successful, in general terms candidates need to be able to demonstrate the ability to handle key terms and concepts such as choice, criteria and dilemma and to come to judgements in the context of situations determined by a set of resources. The term dilemma is to be understood here in a fairly broad sense as involving some kind of difficult choice to be made between two different actions. This in turn will lead to a consideration of the consequences of doing X and not doing Y.

The Assessment Objectives [AOs] and the allocation of marks.

The total mark for the paper is 80, allocated as follows:

- AO1 – **Analysis** of the use of different kinds of reasoning: 10 marks
- AO2 – **Evaluation** of different kinds of reasoning: 30 marks
- AO3 – **Communication** of developed arguments: 40 marks

This weighting is reflected in the different types of questions asked and in the application of the mark scheme.

Quality of written communication

The assessment of written communication is subsumed into AO3. Precision and accuracy of communication is essential to critical thinking and credit may be restricted if communication is unclear.

In particular, examiners should look to give credit where the candidate's work provides evidence of the following qualities:

- Clarity of expression: text is legible and spelling, grammar and punctuation are accurate so that meaning is clear;
- The selection and use of a form of writing appropriate to purpose and to complex subject matter;
- Clear and coherently organised information, using specialised vocabulary where and when appropriate.

Question 1: Problems of definition [6 marks: AO1 = 2; AO2 = 2; AO3 = 2]

The candidate is referred to Documents 1 and 2 and asked to explain some problems of definition that might arise from the term 'designer baby'. Although it might be expected that candidates will attempt to explain more than one problem, an excellent in-depth treatment of one problem could be credited with maximum marks.

- **1-2 marks:** where up to two relevant problem of definition are identified/explained in only a very general or vague manner with no clear reference to documents 1 and 2; **or** some relevant explanation of one problem that is limited but contains some relevant/specific reference to the documents/issue or definition.
- **3-4 marks:** at least two problems are adequately explained with some clear reference to the documents/issues raised in using the term 'designer baby'; **or** one problem is clearly explained with some evidence of discrimination used when referring to the documents.

- **5-6 marks:** a good treatment of at least two relevant problems with evidence of some skilful use of the documents; **or** a very good in-depth treatment of one problem involving skilful use of the documents and some discussion/indication of the difficulties that a problem(s) of definition might lead to in terms of decision/policy making.

Relevant problems might arise from issues connected with:

- Ambiguity/conflation in the use of language, expression and meaning: document 1 refers to 'designer babies' in the same sentence as 'cloning'; does this mean that two similar processes are being referred to here, or are they meant to be seen as very different? Such a distinction will have to be made very clear to the public/potential opponents of 'designer babies'.
- Similarly, problems of definition might well arise from the context in which terms are being used; words/phrases might convey different meanings/messages depending upon social/political/cultural contexts. 'Religious leaders' are referred to in document 1, as are politicians. The context in document 1 revolves around a discussion of the potential medical benefits of 'designer babies'. While document 2 discusses the technological and ethical 'challenges' involved. Definitions/explanations about what is meant when the term 'designer baby' is used may well be different in these different contexts. In document 2 scientists and ethicists might well mean different things when referring to issues/possibilities thrown up by what might be loosely referred to as 'designer babies'.

Question 2: Identify and explain three factors [6 marks: AO1 = 2; AO3 = 4]

Candidates are referred to Document 3

1 mark: identify a relevant factor;

2 marks: clearly identify and explain a relevant factor.

3x2 = 6 marks.

Relevant factors might include:

- Attitudes as to what constitutes a 'natural' process; doc 3 refers to gene-replacement as being no less 'natural' than transplantation.
- Economic: the costs to families of 'genetic' diseases: doc 3 refers to the 'financial strain' on parents of bringing up a child with certain genetic diseases.
- Political/historical:
 - people might be wary of the power genetic technology might give to 'any government authority' – 'we are made nervous';
 - and/or: awareness of the dangers of 'eugenics' as practised by some governments in the first half of the twentieth Century – 'eliminating undesirables'.
- Discrimination: people's views might be affected by fears that those born with disabilities might be more likely to be discriminated against as being seen as 'genetically inferior'.
- Social/political: the doc refers to 'major social concerns' resulting from breeding 'a race of superhumans' and of a sort of genetic 'lower class'.

Question 3: Using selected views [4 marks: AO1 = 2; AO2 = 2]

The candidate is referred to Document 4 and asked to explain some problems in using views of church leaders when deciding upon a policy about 'designer babies'. Although it might be expected that the better responses will be those that explain at least two relevant problems however, a very good in-depth treatment of one problem could gain maximum marks.

- **1-2 marks:** where relevant problems are merely identified/explained in a very generalised/vague manner (with no reference to doc 4, for instance); credit only up to two such problems identified; **or** one relevant problem explained with some reference to the doc/issue under discussion;
- **3-4 marks:** problem(s) clearly identified and explained with clear and discriminating reference to views expressed in doc 4 in relation to deciding upon policies on 'designer babies'. An adequate treatment of two or more problems should be credited with 4 marks; a very good treatment of one problem can be credited with 4 marks.

Candidates might be expected to explain/discuss some of the following points:

- The views of church leaders, as is likely to be the case with any head of an organisation/institution, might well have to be treated with caution as liable to be partial/one-sided. For instance Butler refers to the 'Christian perspective';
- Such views might prove to be untypical of a largely secular-minded population;
- Religious views as to what constitutes the 'welfare of the child' and on the 'sanctity of life' might be somewhat different from views based upon other factors such as medical, social, economic. The view that the child is 'a gift from God' might make it very difficult to decide upon any form of genetic interference even on humanitarian grounds;
- Butler seems to dismiss parental choice as a factor to be taken into consideration; in a modern democratic society that places strong evidence on freedom of choice any policy which ignores parental choice might be very difficult to impose.

Question 4. 24 marks [AO1 = 4; AO2 = 12; AO3 = 8]

The candidate is required to select **one** of the choices provided and to evaluate it – that is, to discuss and come to a judgement on the validity/relevance/acceptability/effectiveness of this choice using some of the criteria given. There is no requirement that the candidate has use all of the criteria, though it is expected that an effective response will be one that refers to a number of the criteria provided. The candidate is also required to refer closely to the documents in the resources booklet; it should be expected that a really effective use of the documents will involve some critical assessment of the evidence provided.

Marking will by levels of response, as indicated in the table below.

Levels	Qualities assessed		
LEVEL	Application and evaluation of selected criteria to choices	Use and critical assessment of evidence provided and in the Resource Booklet	Communication and development of argument
L4: 19-24	Sustained treatment of a number of criteria to the selected choice; criteria clearly and explicitly applied; explicit reference to usefulness/relevance/importance of each criteria as applied to choice	Explicit, appropriate and accurate use of evidence; material critically assessed in terms of utility, credibility, authority, and flaws and assumptions, where appropriate; it might be expected that at least 3 or 4 of the documents are referred to	Very effective, accurate and clearly expressed explanation and reasoning; clear evidence of structured argument/ discussion, with conclusions about each criteria reached and stated in a cogent manner
L3: 13-18	Criteria are clearly applied; assessment/ evaluation/importance of each criteria referred to is at least strongly implicit. Application of only one criteria to one choice	Relevant and appropriate use of evidence provided; some indications that the evidence has been approached/used in a critical sense; generally, at least 2 or three of the documents referred to	Effective and accurate, and on the whole clearly organised and expressed explanation, with some evidence of structured argument/discussion about the criteria/choice
L2: 7-12	Criteria applied, though treatment tends to be lacking in depth overall; some limited indication of an awareness of relevance etc, though criteria generally applied with little or no direct comment as to its importance/usefulness in helping us to make decisions	Limited reference to the evidence, which tends to be used in an uncritical way to provide a few examples which do not add a great deal to the application of the criteria	The overall level of communication is more limited; relevant points may be reasonably well explained but remain on the whole unrelated; evidence of coherent and well organised explanation/argument is patchy
L1: 1-6	Criteria are described/referred to in an unconvincing way; few, if any, indications of an attempt to apply the criteria	Little or no use/reference made to the documents; bits of the evidence might merely be copied out	Little or no indication of an attempt to organise information/analysis; answer is cursory or descriptive showing little awareness of the demands of the task; communication overall not fit for complex purpose

Question 5a. [4 Marks: AO2 = 2; AO3 = 2]

The candidate needs to identify one dilemma.

- **1 mark:** identify an issue/problem connected to the topic but without showing any real evidence of attempting to frame it as a dilemma; eg students who merely state something like *we should do x or not* should be credited with only one mark.
- **2 marks:** identify a relevant problem/issue and show some limited awareness of what is meant by a dilemma;
- **3 marks:** clearly identify and explain a relevant dilemma:
- **4 marks:** clearly and convincingly identify and explain a relevant dilemma, which involves a choice between alternatives that will both involve some unfavourable consequences. Note that such consequences result from having to forego an action from which benefits might accrue.

Question 5b. 36 Marks: [AO2 = 12; AO3 = 24]

In attempting to resolve the dilemma the candidate is required to:

- Identify some relevant principles, which may be ethical/moral principles;
- Assess the extent to which these principles are helpful in trying to resolve the dilemma;
- Use the evidence in the Resources Booklet to support their argument where relevant.

Marking will be by levels of response, as indicated in the table below:

Levels	Qualities to be assessed			
LEVEL	Treatment of a relevant dilemma	Identification, explanation and application of relevant principles	Use of evidence	Quality of argument
L4: 28-36	A sustained and very effective treatment of a clearly understood and relevant dilemma	A number of relevant principles clearly and accurately identified and explained; principles applied and discussed in a critical manner with clear regard for their relative usefulness in terms of resolving the dilemma identified	The evidence is used to support explanation and argument where appropriate and with discrimination in a very effective and telling manner	The argument – which is the attempt to resolve the dilemma – will be sustained, coherent and convincing throughout; some complex material will be handled accurately with confidence; the argument will be very well constructed, so as to enable the reader to clearly identify the reasoning presented, which should include many, if not all the following elements: reasons, explanations, supporting evidence, counter-argument, hypothetical reasoning, intermediate conclusions and a clearly stated conclusion
L3: 19-27	Consistent and effective treatment of a relevant dilemma	Relevant principles clearly identified and explained; how and to what extent these principles can helpfully be applied to a resolution of the dilemma is discussed in an effective manner	Evidence is used in a generally appropriate manner to support explanation and reasoning; some indication of discrimination in the use of the evidence	A relevant argument that is effective overall in terms of a clearly identifiable structure; generally coherent and convincing, with some clear indication of an attempt to reach some sort of a conclusion of the evidence in terms of resolving the dilemma
L2: 10-18	Overall, a patchy and limited treatment of a dilemma that may well not have been sufficiently well defined and explained	Some limited identification of relevant principles; perhaps only one principle used; some inaccuracy/misunderstanding in the application of principles; some limited assessment/discussion of the usefulness of principles in trying	Some fairly limited use of evidence, generally presented in an uncritical manner	A less well developed argument, though still with some indication of structure and overall relevance in terms of trying to resolve the dilemma; intermediate and/or main conclusions may not be made readily or clearly apparent

L1: 1-9	A weak treatment in which the dilemma is possibly undefined	Principles, if any, are ill-defined and understood, with frequent inaccuracies in explanation; little or no assessment of how principles might usefully be applied	Little or no use of evidence to support points made; sections of the documents might merely be copied out to no discernible purpose	Weakly argued; little indication of an organised or coherent argument being put forward; lacking in identifiable structure
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Assessment Objectives Grid

Question	A01	A02	A03	Total
1	2	2	2	6
2	2		4	6
3	2	2		4
4	4	12	8	24
5a		2	2	4
5b		12	24	36
Total	10	30	40	80

**Mark Scheme F494
June 2007**

F494 Critical Reasoning

Multi-choice mark scheme and justification

Q	name	type	
1	Fear	Which is argument?	D
2	Football	Diagram structure	B
3	Mobile clubbing	Effective addition?	D
4	Fixed penalty fines	Identify main conclusion	B
5		Assumption	A
6		Which would strengthen argument?	A
7	Musk ox	Identify flaw	A
8	Thai meal	What can be concluded?	D
9		Venn diagram	C
10	Valid	Which is valid	D
11	Gadgets	Flaw	B
12		Which would counter the claim?	D
13	Science	Which is argument?	A
14	Diet	Identify main conclusion	C
15		Assumption / structure	C
16		Inference	B
17	Overseas visits	Interpreting visual data	C
18	Untidiness	Identifying unstated counter argument	B
19		Problem with analogy	B
20		Flaw	D

1

Key

D

R1 It is important that all the body's natural functions are used in a healthy way.

R2 Horror films allow us to use the body's fear mechanisms in a safe situation.

C Horror films are part of a natural, healthy life.

A *Description*B *Explanation*C *Explanation*

2

Analysis

CA Many argue that football is boring because so few goals are scored.

R1 Few goals are scored.

IC1 A single goal can win the match.

IC2 The crowd becomes hopeful of victory and excited at every goal scoring opportunity.

A There are several goal scoring opportunities in most football matches.

C It is precisely because so few goals are scored in football that the game is exciting.

3

D

4, 5, 6

Context:

Under new government plans, instead of using the courts, police could impose fixed penalty fines for crimes such as drunkenness, minor theft and assaulting a police officer.

CA Improving the conviction rate for petty crime and reducing legal bureaucracy are worthy aims.

- R1 Fines, like parking tickets, do not leave an offender with a criminal record or shame them in court.
- A1 Fines do not inflict lasting suffering on the offender
- IC1 So there is nothing lasting to discourage them from offending again.
- R2 Even minor incidents can have a lasting effect on the victim.
- A2 The offender should suffer at least as much/long as the victim.
- A3 If there is no recompense for the victim, or 'pay back' for the criminal, justice has not been done
- IC3 Imposing a fine barely counts as justice at all.
- CA Immediate payment of £100 ought to deter offenders
- R3 Many people believe that fixed penalty fines do not have to be paid.
- Ev In 2005 almost half the penalty notices issued by police were ignored.
- IC4 Fixed penalty fines send the wrong message to potential offenders: not only is assaulting a police officer equivalent to parking on double yellow lines, you can get away with it.
- C The government's proposals (to increase the use of fixed penalty fines) would undermine criminal justice in the UK.

4 Which of the following best expresses the main conclusion of the argument?

- B
- A *This is the context.*
- C *This summarises the first strand of argument from R1*
- D *This paraphrases part of IC4*

5 Which of the following is an underlying assumption in the argument about criminal justice?

- A The justice system should make an offender suffer if their victim suffers.
This combines A2 and A3
- B *I don't think you have to assume that it is wrong to punish these offences in the same way; the assumption would be that it is wrong to treat them as equally trivial.*
- C *This would be something which could be drawn as a conclusion from the evidence about unpaid fines. It is not a missing step in this argument.*
- D *The argument at least implies that the criminal justice system should impose penalties which prevent further or new offences. It is not necessary for this argument that it is the 'most important' aspect.*

6 Which of the following would strengthen the argument about criminal justice?

Key

- A i) only
- i) shows a further way in which the imposition of fixed penalty crimes for relatively serious offences might further undermine the UK criminal justice system.
- ii) This argument shows a negative consequence of fines rather than how their use might undermine the criminal justice system. So, although it would strengthen a more general argument about fixed penalty fines being a bad thing, it does not strengthen this precise argument.

7

- R1 The Tibetan antelope and the guanaco, a wild relative of the camel, have resisted domestication and have both been hunted almost to extinction by people wanting their soft underfur for wool.
- R2 The musk ox, vicuna, alpaca and other domestic wool-producing animals, such as the cashmere-producing goat and angora-producing rabbit, are plentiful.
- C This contrast shows that domestication ensures the survival of a species, whereas remaining wild is a one-way ticket to extinction.

Key

A

It's generalising and assuming that what is the case in these few examples does hold true in other cases.

B The argument does not falsely restrict the options to being wild or being domestic.

C

Some candidates might pick this as indicating that being domesticated involves being killed. However, it is not a flaw, and farmers generally do not farm their stock to extinction.

D

This is a disagreement with a statement the passage does not make and therefore not a flaw. The passage probably does make assumptions about people's tendencies to hunt unsustainably, but it does not need to assume that people CANNOT hunt sustainably, just that they DO not.

8

D Neither

- i) Only people with glasses had camera phones but we do not know that all of them had a camera phone. So the one person with glasses who did not take photos may not have had a camera phone.
- ii) Although two people must have taken pictures with a gadget which was not a mobile phone, because no one borrowed a (camera) phone from anyone else, we cannot be sure that these two people did not share a digital camera or that they did not use traditional, film-based cameras and scan the photos into the website.

9 C

10

D Only in D does the conclusion have to be true if the reasons are true.

A is a reasonable argument, but not valid, because the conclusion does not have to be true – it allows the possibility that Anjuli may become the sort of scientist who works in the field or elsewhere.

B Kafi could be a scientist other than a biochemist.

C Tom may be one of the people who work in a lab who are not scientists – technicians etc.

11, 12

R1 The choices and technicalities involved in buying and using gadgets are confusing.

IC1 It can be frustrating trying to make your new gadget work.

Ex If you want to buy most MP3 players, for example, you need to choose a manufacturer, choose the right software, and surf a multiplicity of online music stores.

CA This may give the consumer choice.

Ex (RCA) However, many consumers are choosing to buy the iPod which is tied to iTunes software and the iTunes online music store, instead of assembling a package from different manufacturers.

R2 Furthermore, consumers buy products, but often don't buy the content and accessories they need to fully use their new gadgets.

Ex For example, half the US consumers with high-definition TV sets don't subscribe to HDTV programming.

IC2 It is clear that digital industries need to sell fully integrated end-to-end experiences such as the iPod rather than standalone devices.

C Consumers should welcome Microsoft's development of the Zune as a full digital experience to rival the iPod.

11

Key B

*The argument appears to restrict the options to either selling standalone devices or integrated experiences. The reasoning does support the idea that there is a greater need for simple solutions for computer/gadget-phobes; it does not support the conclusion that digital industries need to sell fully integrated end-to-end experiences such as the iPod **rather** than standalone devices.*

A

This should take candidates in the direction of a straw person argument which I don't think exists.

C

No, it uses two examples to support a general point. That's different.

D

Should make weaker candidates wonder whether there is an ad hominem attack (re American purchasers of HDTV).

12

Key

D *This provides a reason why consumers should not welcome the Zune; if Microsoft, which currently defends choice, joins Apple in limiting choice, both companies will be able to charge highly for their services.*

A

This refers to the breakdown of previous integrated, end to end systems. This may imply that new integrated services could disintegrate as IBM did, but does not give consumers a reason not to welcome the Zune now.

B

This is a reason for these consumers to welcome Microsoft's movement into the market for integrated end to end digital experiences.

C

The possible beliefs of some consumers are not a reason to counter the claim that 'consumers' in general, should welcome the development of the Zune.

13

Key A

R1 Science has a linear logic

R2 Poetry has spherical logic.

R3 Science and poetry deal in likeness and similarity.

R4 Science seeks perfection through understanding.

R5 Poetry seeks perfection through sensation.

C Science and poetry share similar aims and methods.

(Extracted from a New Scientist article by Simon Armitage 26 August 2006 p20)

B Primary school children should soon have the opportunity to learn about Shakespeare's plays.

Fact about what will soon happen.

The government believes that knowing Shakespeare is an important part of being British.

Expression of the Government's opinion. At most it explains why primary school children will have the opportunity to learn about S.

Shakespeare's comedies have a bawdy humour.

Unrelated comment about S. Could be used as a reason either for or against working on S's comedies with children but is not used as such here.

C

Rant. None of these sentences gives us any reason to believe any of the others.

D *Report.*

UNIT 4 CRITICAL REASONING June 07 Mark Scheme

Section B

Coverage of Assessment Objectives

AO1 – analysis of reasoning:	17
AO2 – evaluation of reasoning:	30
AO3 – development of reasoning:	18

Quality of Language	5
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In all cases performance descriptors refer to candidates performing at the top of the band. Any candidate performing above the descriptor enters the bottom of the next band.

Annotations.

The marks for each part of a question should be written in the margin.

The marks for a whole question should be written in the margin and circled.

Where levels of response descriptors are used, the level should be written in the margin by the mark, eg Q25, L4, 17.

Ticks should be avoided, especially where they do not add up to the number of marks given.

Analysis Questions

It is helpful to put the following abbreviations in the left hand margin:

R where reason is precisely and accurately identified.

IC where intermediate conclusion is precisely and accurately identified.

Ex where example is precisely and accurately identified.

St where accurate indication of structure is given.

Evaluation Questions:

In evaluation questions, it is helpful to put the following abbreviations in the left hand margin:

S where strength is identified.

W where weakness is identified.

E where evaluative comment is made.

I where the impact of strength or weakness is considered.

A where assumption is identified.

Development of Reasoning Questions:

R Reason

SR Strand of Reasoning

A Argument depends on (glaring) assumption

IC Intermediate Conclusion

Ex Example

Ev Evidence

CC Counter claim presented

CA Counter argument presented

RCA Response to counter argument or counter claim

P Use of argument based on principle

Ag Use of argument based on analogy

HR Use of Hypothetical Reasoning

21) Identify and briefly explain the function of the following elements in the structure of Ashley's argument:

In each case, one mark for the name, one for an appropriate explanation. The explanation can be credited even where the name is wrong.

- a) **This is not just the obvious ageing person's whinge because my kids can sort out computer or digital camera problems that baffle me. It is more about the way that they absorb information and entertainment.** (paragraph 2) [2]
Response to (anticipated) counter argument. 2 marks
Argues against/ dismisses (1 mark) the idea that author is only whingeing because they are baffled by technology and doesn't have good reasons (1 mark).

Accept:

Counter argument 1 mark

- b) **There are the icons of the iPod or Windows.** (paragraph 3) [2]
Example (1 mark) of pictures we use / point and click images (1 mark).

- c) **A recent survey of 8 – 18 year olds suggests that they are spending 6.5 hours every day using electronic media and multi-tasking is rocketing.** (paragraph 7) [2]
Evidence (1 mark) used to provoke the question whether technology could be having an impact on thinking and learning (1mark)

Evidence (1 mark) used to support the claim, 'she asks whether technology could be having an impact on thinking and learning' (1 mark)

Evidence to support the claim that technology is having an impact on thinking and learning (1 mark – because it is not used to support the claim that technology IS having an impact but ask the question WHETHER it is.)

Evidence (1 mark).

- d) **Is this perhaps the source of the hyperactivity and attention deficit disorders now being treated with industrial quantities of prescription drugs to help sustain attention in the classroom.** (paragraph 10) [2]
Rhetorical question (1 mark) no real function in the structure of the argument (1) / linking it to Greenfield's idea about technology having an impact on the brain (1)
Trying to use this as evidence to support the claim that technology is having an effect on the brain (2)
Rhetorical question used as evidence (2)

Accept:

Evidence (1)

22) Analyse in detail the structure of the argument in paragraph 11 by identifying reasons, intermediate conclusions etc

Analysis of Reasoning AO1

In all cases performance descriptors refer to candidates performing at the top of the band. Any candidate performing above the descriptor enters the bottom of the next band.

Candidates should demonstrate understanding of argument structure.

Candidates should identify elements of subtle and complex arguments using appropriate terminology.

	Performance descriptors
Level 4 7 – 9	Candidates demonstrate thorough understanding of argument structure, including some complexity. Candidates are able to identify elements of complex reasoning accurately using appropriate terminology. Mistakes are rare and not serious.
Level 3 5 – 6	Candidates demonstrate a clear understanding of argument structure. Candidates are able to identify most elements of reasoning accurately using appropriate terminology. They may make mistakes, occasionally serious ones.
Level 2 3 – 4	Candidates demonstrate basic understanding of argument structure. Candidates are able to identify some elements of reasoning accurately using appropriate terminology. They may mix this with gist and misunderstanding.
Level 1 1 – 2	Candidates demonstrate limited understanding of argument structure. Candidates may provide poor paraphrases of isolated elements of arguments or give overall gist.

R1 Parliamentary democracy has depended on a citizenry prepared to think logically about policies and to follow arguments

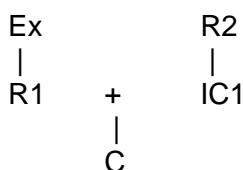
Ex a politician’s justification for charging higher university fees.

R2 Greenfield’s feared world without context will lead to unthinking citizens

IC1 it will also be a world more prone to political illogic and fad.

IC2 Politicians should be seriously concerned about these changes in the way we think.

Good candidates will identify that R1 supports IC1, which, together with R2, supports IC2.



- 23) **'In just a couple of decades, we have slipped away from a culture based essentially on words to one based essentially on images, or pictures.'**
(paragraph 1) Evaluate the support given to this claim by the reasoning in paragraphs 1 – 5

[15]

Performance descriptors refer to candidates performing at the top of the band. Any candidate performing above the descriptor enters the bottom of the next band.

	Performance Descriptors
Level 4 12 – 15	Candidates demonstrate sound, thorough and perceptive evaluation of strength and weakness in the support given to the claim that, 'In just a couple of decades, we have slipped away from a culture based essentially on words to one based essentially on images, or pictures.' They provide consistent evaluation of the impact of this strength and weakness on the overall support given by the reasoning to this claim. Candidates select key points to evaluate. Inappropriate forms of evaluation are rare and not serious. Candidates have evaluated the support for Ashley's claim, making some relevant points to support their evaluation.
Level 3 8 – 11	Candidates demonstrate a clear understanding of weakness in the support given to the claim that, 'In just a couple of decades, we have slipped away from a culture based essentially on words to one based essentially on images, or pictures.' They evaluate the impact of this on the overall support given by the reasoning to this claim. Candidates begin to evaluate strength more clearly. Candidates select points to evaluate, but not always key points. Inappropriate forms of evaluation (disagreement, counterargument, false attribution of weakness) may occur. Candidates have made a mixture of relevant evaluation and irrelevant or inappropriate points in an attempt to evaluate the support for Ashley's claim.
Level 2 4 – 7	Candidates demonstrate basic awareness of strength and weakness in the support given to the claim that, 'In just a couple of decades, we have slipped away from a culture based essentially on words to one based essentially on images, or pictures.' Valid points may be isolated, but candidates begin to evaluate the impact of weakness on the overall support given by the reasoning to this claim. Candidates may attribute weakness inappropriately and occasionally disagree with the reasoning or provide counterarguments rather than evaluating it. Candidates make the odd relevant evaluative point amidst description and irrelevance.
Level 1 1 – 3	Candidates demonstrate limited awareness of strength and weakness in the support given to the claim that, 'In just a couple of decades, we have slipped away from a culture based essentially on words to one based essentially on images, or pictures.' They attribute weakness inappropriately and have little awareness of the impact of weakness on the overall support given by the reasoning to this claim. Candidates tend to disagree with the reasoning rather than evaluate it. Candidates' responses are overwhelmingly irrelevant, descriptive or wrong.

Q23 cont

The following instruction is given in the rubric of the question:

‘Support your evaluation by **selectively** referring to:
 Flaws in the reasoning and their impact on the strength of the reasoning.
 Assumptions which must be made and their impact on the reasoning.
 The effectiveness of the use of evidence and examples.’

This rubric is intended to give support to candidates rather than to provide a straitjacket which limits answers. Marks are allocated on the basis of a holistic assessment of the quality of the candidate’s answer. Candidates do not need to refer to all three bullet points to gain good marks. A candidate who writes an answer which indicates good or perceptive understanding of key flaws and how they affect the support for the claim, but who does not refer to assumptions or the use of evidence can still access high marks. Quality not quantity!

Indicative content**Key points:**

The claim that we have slipped from a culture based essentially on words to one based essentially on pictures is a strong claim which is extremely weakly supported. There is almost no structure of reasoning, but a number of assertions, often inconsistent, which are illustrated rather than supported by contradictory and inconsistent examples. Many challengeable assumptions must be made, including that the answer to Greenfield’s question about whether technology is changing our brains is, ‘yes’. There is some support for the increase in importance of images, although this is based on the dubious assumption that images were not previously an important part of our culture. There is, however, no support at all for the claim that our culture is now based **essentially** on images. The first part of this article is a rhetorical, fear-driven response to a scientist’s question.

Caution

Some candidates are likely to provide counter argument rather than discussing weakness in the reasoning. There is much that can be disagreed with, but to access reasonable marks, candidates must do more than disagree.

Flaws

Para	Flaw	Evaluation / Impact
1 – 5	<p>Inconsistency (accept contradiction)</p> <p>It is inconsistent to say that culture is based on images and that the main change to culture is that sentences are surrounded by pictures.</p> <p>It is inconsistent to use examples of young people using written language to demonstrate that culture is based on pictures.</p> <p>It is also inconsistent to say that this change is most striking when young people are absorbing information and entertainment, yet claim that the main change is when these young people are texting or emailing, which is productive rather than absorptive.</p>	<p>So Ashley has used reasoning which would support alternative claims, and her own claim is not supported by this inconsistent reasoning.</p>

Q23 cont	Unfounded / unsupported reasons	Candidates should not provide counter assertions or simply disagree with these unfounded claims, but should evaluate their impact on the reasoning.
1	'We have slipped away from a culture based essentially on words...'	Ashley offers no support to the claim that our culture has been based essentially on words, but takes it for granted. We are literate, we do use words – but this is not the same as our culture being based on words. This makes the claim vulnerable to attack through the suggestion that we haven't slipped, our culture was always based on images, and mass literacy is a recent phenomenon. If so, then Ashley's claim that we have 'slipped' (to a worse state of affairs) is significantly weakened.
1	'This is probably one of the greatest shifts in the story of modern humanity....'	Ashley offers no support for the claim that this shift is one of the greatest in modern humanity. This claim is probably an exaggeration; depending on when 'modern' starts, industrialisation, urbanisation, travel and widespread literacy are probably greater shifts in the story of modern humanity. This exaggeration affects only the scaremongering, rhetorical value of the piece, rather than the 'reasoning' itself.
2	'It is most striking when you watch children and young adults... It is more about the way they absorb information and entertainment.' (Also begging the question)	There is no attempt to substantiate this claim. It may well be true that young people interact more comfortably with modern technology than old. There is, however, no support for the claim that they absorb entertainment and information differently. Here Ashley assumes that the answer to Greenfield's question whether technology is changing the human brain is 'yes', without giving any real support. As this paragraph contains the only ideas which might have supported the claim about slipping to a culture based on pictures, the weakness in it means that the claim about culture is not supported.
4	'There can be little doubt that the structures, never mind the surface form, of the English language, are changing fast.' (accept slippery slope)	This is supported only by the use of txtspk, and total nonsense about 'post-grammar, post spelling shorthand.' Txtspk has very clear rules governing its grammar and spelling, otherwise it would be incomprehensible. They may be obscure to those who do not know them (like any other language we do not know) but this does not mean they do not exist. The changes in one form of English usage certainly do not mean that the structures of a whole language are changing. And even if it does, the changes are not necessarily bad, and do not mean that our culture is now based on pictures.

Q23 cont	Definition	Ashley uses 'words' to mean only written words. However, words are also, and fundamentally, spoken.
	Rhetoric This whole passage is highly emotive and emotional, persuading through association, exaggeration and fear rather than through sound reasoning.	This leaves the claim about our culture slipping to being based on words effectively unsupported.

Assumptions

1	Our culture has not previously depended to any great extent on pictures.	This can easily be challenged. Visual representation has a long history in the west (from cave pictures through modern art and religious icons to about 100 years of moving pictures and advertising. Thus the claim that our culture has slipped <i>from</i> being based essentially on words is significantly weakened.
1	A culture based on (written) words is superior to one based on pictures	We have to accept this, otherwise the word, 'slipped' and the general scare mongering would be inappropriate. It may be that skill with (written) words allows people to use reason more effectively. This may be superior. However, engineers, architects, IT specialists and others express complex trains of thought or complex processes visually and find that this form of representation is more appropriate than using words. Challenging this assumption would affect the scare mongering rhetoric, but would have little impact on the factual truth of the question whether our culture is word or picture based.
Whole article	The answer to Baroness Greenfield's question about technology changing the brain is 'yes'.	This is particularly worrying and seriously weakens the whole piece. Greenfield suggests that research should be undertaken. Ashley jumps to a conclusion. Even if our brains are changing in response to new technology, this need not be worrying.
4	Changes in the structures of the English language have some bearing on whether our culture is based on words or pictures.	This is clearly rubbish, but the assumption has to be made for paragraph 4 to have any relevance at all.
5	Surrounding words with pictures equates to basing our culture on pictures.	This is an untenable link, far too weak for the work it has to do to make Ashley's rant make sense as reasoning.

Evidence and examples

As a general point, Ashley points to her examples, 'there are the...' but does not use them or draw conclusions from them. Paragraph three in particular reads like an almost hysterical recital of everything which is frightening, without really considering whether it is relevant or not.

Para	Evidence / example	Evaluation / Impact
	Icons of iPod or Windows	These images tend to come with words. Icons are a very old way of representing things. So this example does not show that pictures are more important in our culture than words, or that there has been a change.
	Chinese Ideograms	Chinese ideograms represent words, rather than being built up in alphabetical fashion. They have also been used for rather longer than western culture's alphabetical writing. So this example does not support Ashley's claim about the shift in our culture.
	Winking corporate mini-logos	Familiar 'corporate' logos pre-date mass literacy, as can be seen from tins, posters, pictures and textual references to popular brands from, for example, the early nineteenth century. The difference is that there are fewer, more powerful corporations now, so the same few logos are familiar to greater numbers, and they are electronic so they can wink. This does not show a functional change in their use, or a shift in our culture.
	National flags	A particularly poor choice of example to illustrate the old, 'word-based' culture, as flags are a visual form of icon or logo.
	Famous authors	Famous authors, as people, or iconic images of our past culture, are not good examples of the old 'word-based' culture. Their works would have been a better example. Furthermore, young people are aware of the names and even the works of famous authors; most teenagers have heard of and read works by JK Rowling, Anthony Horowitz, Jacqueline Wilson et al.
	Teenager navigating web	The way teenagers navigate through instructions, suggestions, offers and threats illustrates fairly sophisticated literacy. Instructions etc normally come in words. The presentation is different from a book, but this does not mean that these teenagers are not essentially working with words. So this example does not support Ashley's claim either.
	Text and computer messaging	These are both written forms of communication, using words, so actively contradict Ashley's claim that our culture is now essentially based on pictures.
	Camera phones / happy slapping (appeal to fear)	This use of phones to send pictures is a better example of communication by picture. However, the use of pictures does not mean that they are more important than words. Ashley herself indicates that the pictures surround words rather than replacing them. In previous times people used to paint or take photos of places to show people on their return. Even further back, people generally did not need to describe places because their movements were limited to a very small geographical area. Long descriptive passages are very much a feature of nineteenth century prose – and are not much missed. So even this better example only illustrates that pictures are important in our communication, not that our culture has slipped from one being based on words to one based essentially on pictures.
	iPods	None of the visual activities undertaken on the iPod is without words. The difference is that the words are spoken. But this does not mean that the culture is not based on words.

- 24) **Politicians, ‘could take a valuable ten minutes to read and reflect on Baroness Greenfield’s fine speech.’ (paragraph 12) Evaluate the support given to this claim by the reasoning in paras 6 – 12. [15]**

Performance descriptors refer to candidates performing at the top of the band. Any candidate performing above the descriptor enters the bottom of the next band.

	Performance Descriptors
Level 4 12 – 15	Candidates demonstrate sound, thorough and perceptive evaluation of strength and weakness in the support given to the claim that politicians, ‘could take a valuable ten minutes to read and reflect on Baroness Greenfield’s fine speech.’ They provide consistent evaluation of the impact of this strength and weakness on the overall support given by the reasoning to this claim. Candidates select key points to evaluate. Inappropriate forms of evaluation are rare and not serious. <i>Candidates have evaluated the support for this claim, and may have separated Greenfield’s reasoning from Ashley’s, and making some relevant points to support their evaluation.</i>
Level 3 8 – 11	Candidates demonstrate a clear understanding of weakness in the support given to the claim that politicians, ‘could take a valuable ten minutes to read and reflect on Baroness Greenfield’s fine speech.’ They evaluate the impact of this on the overall support given by the reasoning to this claim. Candidates begin to evaluate strength more clearly. Candidates select points to evaluate, but not always key points. Inappropriate forms of evaluation (disagreement, counterargument, false attribution of weakness) may occur. <i>Candidates have made a mixture of relevant evaluation and inappropriate or irrelevant points in an attempt to evaluate the support for this claim. They may have made some effort to separate Greenfield’s reasoning from Ashley’s.</i>
Level 2 4 – 7	Candidates demonstrate basic awareness of strength and weakness in the support given to the claim that politicians, ‘could take a valuable ten minutes to read and reflect on Baroness Greenfield’s fine speech.’ Valid points may be isolated, but candidates begin to evaluate the impact of weakness on the overall support given by the reasoning to this claim. Candidates may attribute weakness inappropriately and occasionally disagree with the reasoning rather than evaluating it. <i>Candidates make the odd relevant evaluative point amidst description and irrelevance. Little understanding of the differences between Greenfield’s reasoning and Ashley’s.</i>
Level 1 1 – 3	Candidates demonstrate limited awareness of strength and weakness in the support given to the claim that politicians, ‘could take a valuable ten minutes to read and reflect on Baroness Greenfield’s fine speech.’ They attribute weakness inappropriately and have little awareness of the impact of weakness on the overall support given by the reasoning to this claim. Candidates tend to disagree with the reasoning rather than evaluate it. <i>Candidates’ responses are overwhelmingly irrelevant, descriptive or wrong.</i>

- Politicians, ‘could take a valuable ten minutes to read and reflect on Baroness Greenfield’s fine speech.’ (paragraph 12) Evaluate the support given to this claim by the reasoning in paras 6 – 12. [15]**

Indicative content:

The claim that politicians should read and reflect on Baroness Greenfield's speech is actually a fairly weak claim, so needs little support. It requires that Greenfield should have something reasonable to say which addresses a political need. Greenfield raises the question of whether technology is changing the brain. Given her expertise, her quotation, 'the human brain is exquisitely sensitive to every event: we cannot complacently take it as an article of faith that it will remain inviolate and that consequently human nature and ways of thinking and learning will remain consistent,' and her recommendation that, 'there should be more government funding for research into the impact of the digital picture world on how children learn to think,' are enough to give support to the claim that politicians, at least those with an educational remit, should read and reflect on her report.

Ashley's contributions are considerably weaker and full of flaws, assumptions, unfounded reasons, rhetorical language and rant aimed at arousing emotions rather than giving rational support to the claim. She 'reasons' via the question whether technology is changing the brain, through the assumption that because it could be, it actually is, to the conclusion that these changes are worrying, looks at problems this might cause (in slippery slope fashion), and adds a political concern, also based on unfounded premises. Many of her dodgy claims are much stronger than is necessary to support the weak claim that politicians should read Greenfield's report.

So, there is some support for the claim, but mostly from Greenfield rather than Ashley.

Specific points candidates may make could include but need not be limited to:

Para	Comment	Evaluation / Impact
7 – 10	Appeal to Greenfield's authority	Greenfield is a neuro-biologist, so she has relevant expertise, which makes her a good authority to appeal to. Ashley also quotes her, rather than appealing to her authority to end argument. This is the main significant strength in this article. However, the quotation is very selective and is mixed with comments which may be either paraphrased or Ashley's own comments – it is unclear. This weakens the effectiveness of the appeal to authority.
7	Jumping to conclusions 'Greenfield wades straight into the dangers posed by this culture.'	At no point does Ashley quote Greenfield as saying that this culture poses dangers. It seems to be Ashley's own response to the question which Greenfield raises. This conclusion of Ashley's is unsupported. It forms the basis of her response to Greenfield and underlies the whole rhetorical article.
7	Evidence	The evidence is presumably from Greenfield but paraphrased by Ashley. It is a little imprecise; electronic media could include the television, radio, iPod etc, or could be educational online activities. Multi-tasking is also vague here; word processing and listening to gentle music would be multi-tasking, but would be less distracting than talking on a mobile and playing a computer game whilst word processing, for example. It is relevant to ask whether such activities are affecting our brains, but too strong to suggest that this culture poses dangers on the basis of this evidence. It may be that electronic multi-tasking is beneficial for our brains.

8 – 9	Selective quotation and interpretation of evidence	It is not clear from the quotation from Greenfield in paragraph 8 that she is worried. Greenfield assesses some of the benefits of traditional education. However, Greenfield perhaps limits the scope of traditional book reading to logical interconnected steps. Association, emotion and non-linear patterns all play an important role in book reading. Equally, both of these kinds of thought can be found in image-based or multi-media format. But Greenfield assumes that complex systems /complex thought cannot be expressed properly in pictorial / visual systems. Cf architects, engineers etc. So Ashley's juxtaposition of old reading with worrying new images is extreme and unreliable.
9	Rhetoric Conflation Unfounded leaps / slippery slope	Ashley limits multi-media images to those which flicker up and flash away again before connections can be made. She denies the user a role in controlling the environment and choosing how long to focus on a particular image. She also ignores the many wordy documents which can be found on the web. There is no basis for suggesting that we cannot build up a context or conceptual framework. There is little support between the sentences in this paragraph; they are leaps of faith, in something of a slippery slope of doom. Ashley may be right that people have shorter attention spans, but she only states it, she does not support it. This paragraph does not therefore give support to the IC that politicians should be concerned about these changes in the way we think. And if the IC lacks support, it does not support MC.
10	Unfounded leap / slippery slope Appeal to fear	Ashley leaps from her unsubstantiated world of flickering images and short attention spans to, 'this' being the source of ADHD to drugs as a source of worry.
10	Use of Greenfield.	Greenfield's quotation seems more measured. The sensitivity of the brain does make it sensible to investigate whether children are learning differently. This would indeed be a reason for politicians to take her ideas seriously and at least read them carefully. It does not, however, do the job that Ashley is asking for, and answer that drugs for ADHD will damage or negatively affect the brain.
11	Unfounded leap Slippery slope Begging the question	There is, therefore, little support for the claim that, 'Greenfield's feared world without context will lead to unthinking citizens.' At most there is support for the claim that citizens might think differently. It is simply asserted that parliamentary democracy has depended on a citizenry prepared to think logically about policies and follow arguments, rather than voting in line with class prejudice or self interest, for example. So the claim that the new world will be more prone to illogic and fad is unsupported. Ashley assumes that the answer to Greenfield's question about whether technology will change the brain is yes, when she talks of, 'these changes to the way we think.' There is limited support for the claim that politicians should be concerned; there is enough evidence from a reputable source to

		suggest that changes to the way we think might happen, and that this would have enough political impact (at least in education) for politicians to be concerned, and thus to read Greenfield's speech to find whether Greenfield has sufficiently supported her conclusion that there should be more funding for research in this area.
12	Attacking the arguer	Ashley is just rude about politicians (although possibly with some justification!). She also assumes that only a worried response can be an intelligent one. However, this barely weakens the argument as there is so little there to be weakened by a mere ad hominem.

25 'Technological change should be welcomed.'

Write your own argument to support or challenge this claim.

[18]

	Performance Descriptors
Level 4 13 – 18	Candidates produce cogent reasoning focussed on the claim given in the question. Most importantly, candidates' reasoning demonstrates an accomplished argument structure using strands of reasoning with examples, reasons and intermediate conclusions giving strong support to their conclusion. Candidates define complex or ambiguous terms, such as <i>technological</i> , <i>change</i> and may qualify the conclusion in response to this definition. Candidates anticipate and respond effectively to key counter arguments. Language clear, precise and capable of dealing with complexity. Blips rare.
Level 3 9 – 12	Candidates produce effective reasoning to support their conclusion. Candidates address the claim given in the question. Most importantly, arguments will have a clear structure, which may be simple and precise or attempt complexity with some blips. Examples, reasons and intermediate conclusions generally support the conclusion well with occasional irrelevance or reliance on dubious assumptions. Candidates may attempt to define complex or ambiguous terms such as <i>technological</i> , <i>change</i> and may anticipate and respond to counterargument. Language clear and developing complexity.
Level 2 5 – 8	Candidates demonstrate the ability to produce basic reasoning with reasons and examples which give some support to their conclusion but may rely on a number of dubious assumptions. Candidates' reasoning has some relevance to the claim given in the question. Clear, straightforward, perhaps simplistic. Occasionally disjointed. Language simple, clear. Candidates may include a counter argument or counter reason, but respond to it ineffectively if at all.
Level 1 1 – 4	Candidates demonstrate limited ability to reason. They tend to give examples instead of reasoning. Disjointed, incoherent. Reasons often do not support conclusion. There may not even be a stated conclusion. Language vague.

Candidates will not have time to produce thorough arguments covering all possible strands of reasoning and responding to all counter arguments. We should reward candidates who have demonstrated the ability to argue cogently, coherently and concisely. We are looking for an intelligent, thoughtful, structured response.

Quality of Language – Level Descriptors

Coherent and competent language capable of dealing with nuance and complexity. Technical terms are used accurately and appropriately.
Good use of language to communicate critical thinking points. Tends to use technical terms appropriately. May include slightly stilted note form (omitting subject, for example) providing points are made clearly. May be succinct rather than flowery.
Basically ok – grammatically sound but not especially fluent or competent. Possibly inclined to use sophisticated vocabulary in a rhetorical way with little regard to meaning. May misuse technical terms occasionally.
Plenty of basic mistakes, including in technical terms, but not so awful that it is incomprehensible. Tends to be vague – for example using 'it' without clear reference.
Incoherent, disjointed, grammatically weak and incomprehensible.

General guidelines for quality of language:

We want to credit language which means something, and which is clear, succinct and precise.

We want to credit communication of good thinking.

We do not want to over-reward flowery or waffly language which says very little.

We do not want to penalise candidates for slips of the pen caused by pressure of time.

**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
H050	300	240	210	180	150	120	0
H450	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
H050	8.2	23.0	44.7	66.7	84.8	100	24292
H450	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

Statistics are correct at the time of publication

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