

**MARK SCHEME for the May/June 2010 question paper
for the guidance of teachers**

9694 THINKING SKILLS

9694/22

Paper 22 (Critical Reasoning), maximum raw mark 45

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

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CIE is publishing the mark schemes for the May/June 2010 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

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1 (a) How reliable is the police statement? Justify your answer.

- 3 marks: Strong support given to candidate's conclusion grounded in solid understanding and evaluation of credibility issues.
- 2 marks: Reasonable support given to candidate's conclusion based on acceptable understanding/evaluation of credibility issues.
- 1 mark: Some support given to the candidate's conclusion based on comments with some connection to credibility.

Indicative content:

[Rather] unreliable. VI to defend own actions but also to be seen as truthful, change of story according to WWR which seems quite objective, but plausible story partly corroborated by boyfriend's comments re fear of crowds and photographer's comments about friend dying in a race. Reliability undermined by VI and video. [Max 3]

Guidelines

Give 1 mark for each valid point (e.g. judgment, reason, explanation).

(b) Whose evidence is more useful, the anonymous graphic designer's or Misha Singh's? Justify your answer. [4]

- 4 marks: Strong support given to candidate's conclusion grounded in solid understanding and evaluation of what is relevant and useful with thoughtful reference to both people.
- 3 marks: Reasonable support given to candidate's conclusion based on acceptable understanding/evaluation of what is relevant/useful with some reference to both people.
- 2 marks: Some support given to the candidate's conclusion based on some understanding/evaluation of what is relevant/useful OR reasonable assessment of just one person given in support of a conclusion.
- 1 mark: Inconclusive point or points about the usefulness of some of the evidence.

Indicative content

Anonymous graphic designer's is useful to the extent that it gives the story about friend dying in race and shows the police story to be plausible. It is also useful in showing the general circumstances of police violence, but it doesn't comment on this specific case.

Misha Singh's account would be useful only if we knew that the person seen was in fact Jenufa Chang. The details contradict other accounts, especially the cellphone video, so all this really shows is that a woman may have been attacked by the police and it doesn't help us to decide what happened to Jenufa. [Max 4]

Guidelines

Give 1 mark for each valid point (e.g. reason, explanation). No mark for judgment, because any judgment could be correct.

Maximum 2 marks if only one side considered.

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(c) How much weight should be given to the cellphone video shown by NNN? Give your answer.

- 3 marks: Candidate's conclusion strongly justified by reasoning with some subtlety of 'how much' – so consideration of extent.
- 2 marks: Reasonable support for candidate's conclusion (perhaps less subtle).
- 1 mark: Candidate provides some comments which might support conclusion.

Indicative content:

Anonymity of person an issue – how can we trust someone who doesn't reveal their ID? However, there may be good reasons (if this is another policeman or a banker who doesn't want their boss to know they were there). Manipulation? So this makes us perhaps give less weight.

Quality of recording an issue – shaky and taken on cellphone, so queries about whether it shows JC? Face can clearly be seen, so it ought to be possible to identify or not. So we can give some weight to this.

The tape could have been edited, in order to convey a false impression, especially as there was a delay of three days before the existence of the tape was announced. But as NNN are giving it credence, and as it is taken up by WWR, and as it leads to a change of story by the police, it seems worth assigning some weight to it.

Overall we should take it seriously, giving it reasonable weight, but not treat it as a certain record of events. [Max 3]

Guidelines

Give 1 mark for each valid point (e.g. judgment, reason, explanation).
Maximum 2 marks if only one side considered.

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- (d) How likely is it that the police were to blame for Jenufa Chang's death? Write a reasoned argument to support your conclusion, using the evidence provided, considering plausible alternatives.

Indicative content:

Key point – we need evidence about the cause of death from an independent expert. We need to know for certain whether she was the woman in the video.

It is possible and plausible that the police attacked Jenufa, but also possible and plausible that she was caught up in a crowd that she found frightening after leaving the building following her presentation to ministers. Either of these could have triggered a heart attack if she did indeed have a weak heart. Query also head injuries following a fall?

The police change of story does seem to indicate that they have a guilty conscience.

Note: "Blame" may legitimately be interpreted as meaning cause and/or culpability.

Level 3 5 marks	A strong answer, which provides a reasoned argument, including thorough evaluation of the evidence to support an acceptable conclusion in terms of probability, and evaluates the plausibility of at least one different possible course of events.
Level 2 3–4 marks	A reasonable answer, which evaluates the evidence, draws an acceptable conclusion in terms of probability and may mention the plausibility of at least one different course of events.
Level 1 1–2 marks	A weak answer, which refers to the evidence, possibly including a simple evaluative comment. The conclusion may be unstated or over-stated.
Level 0 0 marks	No creditworthy material.

[Max 5]

- 2 (a) Consider Source A. How reasonable is it to suggest that the surface of the Earth will look like the surface of the moon if we do not act? Explain your answer. [3]

- 3 marks: Strong explanation
- 2 marks: Reasonable explanation
- 1 mark: Comment which might explain

Indicative content:

Not very reasonable. The Earth has an atmosphere which protects it from impacts. There is no reason to suppose that the Earth will be more vulnerable in the future than in the past, and it is not currently covered in craters like the moon is. (On the other hand, the fact that an object so close to us has been hit several times might indicate that collisions are possible?)

[Max 3]

Guidelines

Give 1 mark for each valid point (e.g. judgment, reason, explanation).

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(b) 'The immediate risk of a significant impact by an asteroid is very low.' Can this be reliably concluded from the information in Source B? Explain your answer.

- 3 marks: Strong explanation
- 2 marks: Reasonable explanation
- 1 mark: Comment which might explain

Indicative content:

Yes. Of the 5968 near earth objects, the highest rating on the Torino scale is 1, which is at the very low end, and is a prediction of a miss. These objects are of all sizes – they may well be very small or not even asteroids. Impacts happen very rarely. [Max 3]

Guidelines

Give 1 mark for each valid point (e.g. judgment, reason, explanation).

(c) 'Scientists have already crashed a spacecraft into a large asteroid.' How useful is this additional information in evaluating possible responses to the threat of an asteroid colliding with the Earth? Explain your answer. [3]

- 3 marks: Strong explanation
- 2 marks: Reasonable explanation
- 1 mark: Comment which might explain

Indicative content:

This information is useful to the extent that it shows we have the technology to crash a spacecraft into a space rock, which is not self-evident. Some of the other suggestions seem less possible given our resources. However, for it to be really useful we would need to know what happened – to what extent did the large space rock change its orbit? [Max 3]

Guidelines

Give 1 mark for each valid point (e.g. judgment, reason, explanation).
Maximum 2 marks if only one side considered.

(d) How should world leaders respond to the threat of an asteroid colliding with the Earth? Write a short, reasoned argument to support your conclusion, using and evaluating the information provided in Sources A–D. [6]

Level 3 5–6 marks	A strong, reasoned argument, which uses and evaluates all or most of the evidence provided.
Level 2 3–4 marks	A reasonable, simple argument, which uses and/or evaluates evidence.
Level 1 1–2 marks	A weak answer, which makes some reference to evidence but consists of opinion and/or assertion rather than argument <i>or</i> a weak argument, which makes no reference to evidence.
Level 0 0 marks	No creditworthy material.

[Max 6]

Indicative Content

They should make some contingency plans, along the lines of at least some of the suggestions in Source C, but they should not take the threat too seriously, since it is so unlikely to occur (Sources A and B).

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3 (a) Identify the main conclusion.

So overall, we should be very glad that the world financial system has collapsed. [M

(b) Identify three reasons given to support the main conclusion. [3]

Communities are becoming closer.
 We are all becoming mentally and physically healthier now that the economic bubble has burst.
 World financial collapse has brought many benefits that did not come with high levels of borrowing and economic prosperity.
 But if we take the big picture, we can see that the benefits of the financial collapse outweigh the inconvenience to some people.
 In addition to this, of course, the financial collapse will prevent total world collapse due to global warming.

Any three – One mark each. [Max 3]

(c) Evaluate the reasoning in the argument. In your answer you could consider any strengths, weaknesses, flaws and unstated assumptions. [6]

Use grid below. Refer to indicative content.

Level 3 5–6 marks	Evaluation of strength of argument with critical reference to strength/weakness, including some of: flaws; support given by reasons to intermediate conclusions; use of evidence; inconsistency; analogies; assumptions.
Level 2 3–4 marks	Some evaluative comments referring to strength/weakness including one or more of: flaws; support given by reasons to intermediate conclusions; use of evidence; inconsistency; analogies; assumptions. Maximum 3 marks for relevant counter-argument only.
Level 1 1–2 marks	Discussion of or disagreement with the argument/reasons/evidence.
Level 0 0 marks	No relevant comments.

Note that candidates who quote 'assumptions' from the text have misunderstood the nature of an assumption, which must be an unstated gap in the argument. However, candidates may be credited for evaluative comments which are made about reasoning misidentified as assumptions.

Indicative content

There is some support for the IC that 'World financial collapse has brought many benefits that did not come with high levels of borrowing and economic prosperity.' But this is weak, and there is almost no support for the IC that 'if we take the big picture we can see that the benefits of the financial collapse outweigh the inconvenience to some people.' So, although there is some reason to be glad of the benefits (if you were a well off westerner), it hasn't been shown that we should be 'very' glad that the world financial system has collapsed.

NB – confusion of personal and government borrowing – first para indicates that we now have lower levels of borrowing – this is true for individuals and maybe businesses, but not true for governments, so there is an underlying problem here that candidates could reasonably evaluate.

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It is (at the time of writing!) a significant exaggeration to talk about the collapse of the financial system. It may be teetering, but it is still working. This weakens the argument, in particular the support for the conclusion, because the whole thing is about something which hasn't actually happened. Any benefits should be ascribed to financial downturn, hardship and fear of collapse rather than actual collapse.

The first paragraph is somewhat descriptive and over-generalising, but it does highlight a trend which seems to hold true in rich countries. The argument does not take the rest of the world into consideration and this is a significant weakness – it is drawing a general conclusion about the whole world from information which is valid only for part of the world. And if people are becoming friendlier and more cooperative, and if this is leading to communities becoming closer, then this is a benefit of financial downturn.

The second paragraph has some relationship to real benefits but is hugely overstated and exaggerated – wishful thinking or a positive slippery slope to an unsupported, extreme but desirable conclusion. There is some merit in the thinking that spending time with friends is mentally healthier than shopping, and that walking is healthier than driving, and that eating fresh fruit and vegetables is a healthy way to eat. However, each of these claims is overstated. In particular, it is clearly not true that 'people can no longer afford to drive.' This generalises from some people who perhaps can no longer afford to drive. There is also no evidence to indicate that people who can't afford to drive are walking – they may be catching the bus or staying at home. The author assumes that people who ate in expensive restaurants did not choose meals based on fresh fruit and veg before, and that they do now cook this. However, they may be eating pizza or burgers instead, which might well be less healthy. So the claim that we are all becoming physically healthy is only partly supported. In talking of 'people seeking inner balance and true values' and thus becoming mentally healthier, the author is ignoring the effect of stress on the well-being of people with precarious finances. This stress might lead to an overall decrease in well-being, so the author is being unduly optimistic, and the IC re improved well-being is only weakly supported.

The counter-argument and the response to the counter-argument in paragraph 3 seriously underestimate the harm and hardship caused by global financial crisis, and dismiss it as irrelevant rather than really dealing with it. The global perspective is dismissed without serious consideration. The author does nothing to weigh up the benefits and disadvantages of the global crisis, giving only one tenuous benefit (re food crisis) and asserting their claim.

It is also a significant exaggeration to claim that the global financial crisis will prevent total global collapse due to global warming. It is possible that there will be less fossil fuel burning activity for a while, which might slow down global warming, but it is also possible that funds will be withdrawn from research into cleaner technologies which might allow us to generate wealth without adding to global warming.

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- (d) 'The disadvantages of the financial collapse significantly outweigh any advantages.'
Write your own short argument to support this claim.

Use grid below. Refer to indicative content and example answer.

[Maximum 5 marks]

Level 3 4–5 marks	Developed, coherent argument. Reasons strongly support conclusion. Development may include intermediate conclusion or apt examples. Simply structured argument 4 marks. Effective use of IC 5 marks.
Level 2 2–3 marks	A simple argument. One reason + conclusion 2 marks. Two or more separate reasons + conclusion 3 marks.
Level 1 1 mark	Some relevant comment.
Level 0 0 marks	No relevant comment.

Maximum level 2 if conclusion is clearly implied but not stated.

Maximum 2 marks if a candidate challenges the statement instead of supporting it.

Further argument

Example answer

Although in wealthy countries the financial collapse has simply checked excessive spending, in poorer countries it has led to many people not having enough to eat, or not being able to look after their families. In some countries, for example Bangladesh, children have had to leave school to help to feed their families. Losing their education will have a long term negative effect on these children, and also on their children. These disadvantages are very much more serious than the advantages – after all, rich people could stop spending unnecessary money even without a recession. So the disadvantages of the financial collapse significantly outweigh any advantages.