

**MARK SCHEME for the October/November 2011 question paper
for the guidance of teachers**

9694 THINKING SKILLS

9694/23

Paper 2 (Critical Thinking), 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.

- Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2011 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 relevant is the report in the Rajkhan Times (Source A) to public concern about the proposed incinerators?

Relevance not clear [1]. If the public is concerned about how 'green' the incinerators are then there is some evidence here that incinerators are not very green [1]. However, if the public is concerned about health effects then, apart from the headline, there is no evidence about the public health effects [1]. The report is relevant in that it informs that incinerators may be built in the area in question [1]. The article may create concern about incinerators where none existed before [1].

Because the report is based on material from the Green Alliance, as an environmental group they may have concerns about waste incinerators which are exaggerated and/or which are not shared by the public so it is not necessarily relevant to public concern as such [2 marks].

Give 1 mark per valid point. Only award judgement mark if followed by some assessment.

(b) How reliable is the information given in Source B? Justify your answer. [3]

Given that they are making such an effort to keep it secret, we can reliably conclude that the council does intend to build waste disposal incinerators [1]. However the information about the safety of these incinerators is less certain as it comes from a source with a vested interest (Global Incineration) to present them as safe [1]. The information about national legislation would seem to be reliable [1] as Devandra Singh has no motive to say this is the case if it is not even though the evidence of Source C suggests collusion with Global Incineration [1]. Reliability of information on safety increased by expertise of Global Incineration [1]. Reliability of information about safety decreased by evidence of collusion between Singh and Global Incineration [1]. Reliability increased by fact that it is an official/secret memo therefore authoritative document on council's intentions [1].

Give 1 mark per valid point, including judgements.

(c) How significant is the e-mail to David Wasim from the editor of the Green Alliance Monthly (Source E)? [3]

It is significant [1]. It is highly plausible that this e-mail refers to the confidential information that Wasim has leaked to the editor [1] and that he is the 'highly-placed source' referred to in the article [1]. However, we cannot be sure that it refers to this [1] and may refer to something completely different [1]. The e-mail is dated 01/02/2011 which is the sort of time scale consistent with Wasim receiving the confidential information on 25/01/2011 and taking time to reach a decision about leaking it [1].

Give 1 mark per valid point. Max 2 marks if only one side considered.

- (d) How likely is it that David Wasim leaked confidential information to the Green Alliance? Write a short, reasoned argument to support your conclusion, with critical reference to the evidence provided and considering plausible alternative scenarios.

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| Level 3 5–6 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 credit-worthy material. |

Indicative Content

David Wasim is clearly a committed member of the Green Alliance as evidenced by his blog which gives him a motive for leaking information about council plans to build waste incinerators. The fact that the council wants to suppress this information until national legislation allows it to be bulldozed through would give him further incentive to reveal this information before it became public knowledge. As the memo went to senior planning officers we can be sure he was included. However, we have no evidence to suggest he would have known about the possible collusion between Global Incineration, Dev Singh and Asha Akbar. Even if he had, this is not relevant to the 'green' motive. His blog suggests that he would not have risked losing his job (Source B makes clear that this will be the consequence of being found out) given his financial commitments and also that he was personally ambitious to rise further. His blog also suggests that he accepts that there are some good green arguments for incinerators even if it is not official Green Alliance policy. Looking at the issue from an informed planning position, Wasim may see objections to incinerators as popular prejudice which the Green Alliance is exploiting to get support. Source C suggests possible collusion between Singh, Akbar and Global Incineration Inc., and that they are aware of possible problems with Wasim. It is possible that Wasim is being 'stitched up' as he is regarded as a threat given his green politics and that Singh and Akbar are exploiting an opportunity to get rid of Wasim even though he is not responsible for the leak.

On balance it would appear that it is unlikely that Wasim is responsible for the leak because:

- What he has to lose if found out
- He seems ambitious to get a better job
- He may be being stitched up
- Even as a member of the Green Alliance, he may be in favour of incinerators

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2 (a) Consider Sources A and B. How likely is it that a cure for cancer will be developed?

Unlikely [1] but not impossible [1] (*but 0 if just this*).

Unlikely

Complexities of the condition.
Successful treatment will discourage further research.
Cancer may be a normal part of the ageing process.

Not impossible

A chance discovery from other research might offer a cure.
As with diabetes there may be a demand for a renewed search for a cure.
Just because it is normal does not mean it is impossible to cure.

(b) Consider Source C. "...one will enjoy better health as a result of giving up smoking." How reliable is this conclusion? [3]

Unreliable because:

- The person who had stopped smoking might have taken up equally unhealthy substitute habits e.g. eating cream buns.
- The person's mental health may have suffered either due to withdrawal symptoms or absence of beneficial effects of smoking to control nerves.
- The person's health may be already so severely damaged through smoking that this is a case of 'too little, too late'.

3 marks for any *one* of these.

2 marks if candidate refers to continuation of already existing non-smoking related habits. This is less directly related to giving up smoking and it may still be the case they would be healthier overall. Also for:

- The figures show that 90% of smokers do not get lung cancer
- There is no evidence that giving up smoking will improve your health
- Smokers may still ingest smoke passively even if they have given up smoking

1 mark if candidate refers to other causes of ill health not *necessarily* related to continuation of existing unhealthy habits, e.g. arthritis. Also, if candidate says the conclusion is reliable because of the well-known bad effects of smoking.

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- (c) "There is an increased risk of blindness." (Source D.)
How good a reason is this to suggest more resources should be put into finding a cure for diabetes?

Gives some grounds for this as clearly the condition has serious consequences for the individual even if controlled. However, it is possible a more effective route would be finding some way of combating side effects such as these. Also, there is the question of how to distribute scarce resources in funding health care – would money spent on finding a cure for diabetes be at the expense of research into more life-threatening conditions? We also need to know the degree of risk of going blind – it might be quite low.

1 mark for any 1 of the above points, 2 marks for 1 point if well-developed.

(d) **Should scientists continue to search for a cure for cancer?**

Write a short, reasoned argument to support your conclusion, using and evaluating the information provided in Sources A–E.

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| 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 or an argument which makes no reference to evidence. |
| Level 0 0 marks | No credit-worthy material. |

Indicative content

Sources A and B strongly suggest that the search for a cure is something of a search for the 'Holy Grail'. Candidates who develop this line of reasoning should refer to the fact that 'cancer' is actually 200 different conditions / cancers develop differently in individuals therefore any cure likely to be only appropriate to them – this could be developed along DNA lines / cancer is an inevitable part of the ageing process.

Sources D and E, however, show the unsatisfactory nature of merely treating chronic conditions such as diabetes and how a search for a cure has continued and looks likely to be successful. Genuine cures in the case of cancer and diabetes would clearly considerably increase the life expectancy of individuals with these conditions.

Source C hints at a rather different line of reasoning along the lines of the extent to which cancer is self-inflicted through lifestyle choices and is therefore better *prevented* rather than cured.

The problem with concluding that the diabetes model is appropriate to cancer (i.e. research for a cure should continue) is that cancer seems more inherently incurable than diabetes for a variety of reasons. It seems to be a more complex condition to do with mutation of cells etc. rather than mere bodily malfunction as in the case of diabetes. It would be difficult to see how something like an 'artificial pancreas' would be appropriate to cancer. In any case this could be seen as a sophisticated treatment rather than a cure. Also, the side effects of treating cancer as a chronic condition might not be as serious as in the case of diabetes.

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3 (a) Using the exact words from the passage as far as possible, identify conclusion

The era of the mass or 'public' library will have been very short [2].

If this is the case one can conclude that the era of the mass or 'public' library will have been very short perhaps as little as 100 years [1].

(b) "So the end of the book also signals the end of the library."

Using the exact words from the passage as far as possible, identify three reasons used to support this claim. [3]

- Future generations will be quite happy reading text on a screen
- Some Internet companies are already anticipating a future in which books will only exist 'on-line'
- The vast majority of people will be able to access text on the internet, (via their phones or personal computers)
- They will not need a building physically containing texts in book form
- People without access to the Internet do not need a library to gain such access
- If this vision of the future is correct we will see the end of the library

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- (c) Evaluate the reasoning in the argument. In your answer you should comment on the strengths, weaknesses, flaws and unstated assumptions.

Use the grid below. Refer to indicative content below.

| | |
|-----------------------------|--|
| Level 3 4–5 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 2–3 marks | Relevant extended counter-argument (3 marks). Specific counter-assertions/agreements (2 marks). Single point of evaluation only (2 or 3 marks). |
| Level 1 1 mark | Discussion of the topic without specific reference to the passage or general counter-assertion/agreement or weak attempt at evaluation. |
| Level 0 0 marks | No relevant comments. Summary/paraphrase of passage. |

Assumptions

To be *happy* about reading text online means one never *needs* or *prefers* a hard copy of a text.

The preference for a book is purely cultural and not built into more universal aspects of human biology such as perception.

The transition to generations happy to read text online will be very rapid.

The transition will have the same time-scale throughout the world.

Assumes libraries have no other functions than accessing books.

Flaws

Contradiction between 'books will only exist online' and 'people will still want to own books as physical objects'.

Conflation between 'being happy about reading online text' and 'only needing online text'.

Slippery slope in moving from texts being on-line to the end of the book.

Other points about reasoning

The point that 'online' text does not need a building to contain these texts seems a valid one as does the point about internet cafes etc. being all one needs to access these texts if one does not have access to or own a computer. So this is quite strong reasoning.

There may be a number of reasons why some Internet companies want to put all existing texts online – it does not follow that it must mean that they anticipate the end of the book as we know it.

Being privately owned does not necessarily support the statement 'only accessible to a small elite'. These privately-owned libraries may have been owned by people who wanted ordinary people to access them.

If people want to *own* books as physical objects they might also want to *borrow* them for the same reason. An analogy here might be with hiring a classic car.

The analogy with shops selling vinyl doesn't really work as there is a case that vinyl records are actually functionally better in producing sound. The analogy would only work if people purchased vinyl just to own it as an object as opposed to use it to produce music.

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- (d) 'It is important to own books and not just to read them'. Write your own argument to support or challenge this claim. The conclusion of your argument must be stated.

Use grid below. Refer to indicative content below.

| | |
|-----------------------------|---|
| 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. |

Cap on Level 2 if conclusion is implied but not stated. No credit for material merely reproduced from the passage. Wrong conclusion cap on Level 2.

Indicative content

For

Books are attractive objects that enhance the appearance of a room.
 Many books are for reference and it is convenient if one has them to hand.
 Some books may become valuable in the future and be an investment.
 Many complex novels re-pay re-reading and if one owns them this can be done easily.

Against

Books take up a great deal of space.
 It is wrong to treat books as a form of decoration – this is not their true purpose.
 Most books are only worth reading once – people rarely return to them once they have been read.
 Reference can be now done on the Internet – one does not need books to look things up in any more.