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**THINKING SKILLS**

**9694/22**

Paper 2 Critical Thinking

**May/June 2019**

MARK SCHEME

Maximum Mark: 45

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**Published**

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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

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This document consists of **10** printed pages.

**Generic Marking Principles**

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

**GENERIC MARKING PRINCIPLE 1:**

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

**GENERIC MARKING PRINCIPLE 2:**

Marks awarded are always **whole marks** (not half marks, or other fractions).

**GENERIC MARKING PRINCIPLE 3:**

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

**GENERIC MARKING PRINCIPLE 4:**

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

**GENERIC MARKING PRINCIPLE 5:**

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

**GENERIC MARKING PRINCIPLE 6:**

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Question	Answer	Marks
1(a)	<p>There is no support for the claim that the university in question is ‘dubious’ [1]. There is nothing inherently suspicious about on-line courses [1], nor about offering a range of courses at different levels of study [1]. Higher-level courses of study tend to carry higher costs so might be expected to cost more [1]. The example of Leicester Square offers a plausible alternative explanation [1], but does not constitute a disproof [1] and is only one example, while presumably there are many ‘strong energy’ places around the world [1]. So, while the evidence could be consistent with the claim, it is not conclusive [1].</p> <p><i>Judgment needed for full marks.</i></p>	<b>3</b>
1(b)	<p>It suggests Kitty owes his success, at least partly, to this inheritance [1]. This undermines the claim in his book that his success is due to gaianomics [1]. However, even if the inheritance is a necessary condition for his success [1] it might still be true that gaianomics had a crucial role [1]. It may also support a suspicion that the money enabled Kitty to purchase a ‘dodgy degree’ from the dubious university mentioned in Source B [1].</p>	<b>3</b>
1(c)	<p>It rather contradicts the message in the book [1] by suggesting gaianomics resulted in the <i>rejection</i> of unrealistic goals rather than their achievement [1]. The experience of one individual does not constitute an effective defence; it could simply be a coincidence that this person both read the book and improved their life [1]. It seems likely that anyone writing to this magazine has ‘bought in’ to the mythology of gaianomics and so their evidence might lack reliability / objectivity [1].</p>	<b>3</b>

Question	Answer		Marks
1(d)	<b>Level 3</b> 5–6 marks	A strong answer, which provides a reasoned argument including thorough evaluation of all or most of the evidence to support an acceptable conclusion in terms of probability and evaluates the plausibility of at least one alternative conclusion.	<b>6</b>
	<b>Level 2</b> 3–4 marks	An answer which evaluates some of the evidence, draws an acceptable conclusion in terms of probability and may mention the plausibility of at least one alternative conclusion.	
	<b>Level 1</b> 1–2 marks	A weak answer, which refers to some of the evidence, possibly including a simple evaluative comment. The conclusion may be unstated or over-stated.	
	<b>Level 0</b> 0 marks	No credit-worthy material.	
	<p><b>Indicative content</b></p> <p>The possible conclusions are:</p> <ul style="list-style-type: none"> <li>• Kitty is a con-man who knows gaianomics has no scientific basis and that his book is of no value.</li> <li>• Kitty genuinely believes in gaianomics and that it is based in science.</li> <li>• Kitty believes in the psychological effects of positive thinking and believes his book has value even though ‘gaianomics’ is nonsense.</li> </ul> <p>We do not have sufficient evidence to reliably draw the first conclusion even though there are some dubious aspects surrounding Kitty and his claims. The likelihood is that the third conclusion is correct and that Kitty sees the book as having a psychological ‘placebo’ effect.</p> <p><b>Notes for the guidance of markers</b></p> <p>Simple supported conclusion 1 (if no conclusion cap at Level 2)</p> <p>+ simple consideration of alternative +1 AND reasoned rejection of alternative +1</p> <p>+ explicit use of some (3 or fewer) sources of evidence +1 OR explicit use of all or most (4 or more) sources of evidence +2</p> <p>+ critical evaluation of evidence +1 or (more than one case) +2 + good inferential reasoning +1 or (more than one case) +2</p>		

Question	Answer	Marks
2(a)	<p>1 mark for a clearly-expressed version of each of the following:</p> <ul style="list-style-type: none"> <li>• The action might not be effective / might have only a temporary effect.</li> <li>• The cost might be disproportionate to the assets being saved.</li> <li>• The money could be better spent on other things e.g. health.</li> <li>• Protecting property owned by individuals might not be a government responsibility.</li> <li>• The government might have a policy of not interfering with natural environmental processes.</li> <li>• Since it is unlikely that all property could be protected, there would be difficulties and costs associated with trying to decide which properties to protect and which not to.</li> <li>• The action could have undesirable side effects, e.g. damage to the environment / unsightly or inconvenient to people etc.</li> </ul>	3
2(b)	<p>Coastal erosion is an immediate problem requiring an immediate solution [1]. Any effect of a policy on global warming would take too long to change the weather patterns that are causing extreme weather [1]. Such action will only decrease the pace of global warming [1]. This might not have any affect on already existing extreme weather patterns [1]. There are other causes of coastal erosion (as outlined in Source C) [1]. These would still have an impact [1]. It is possible that climate change sceptics are right [1] and that increased storm severity is not caused by climate change [1].</p>	4
2(c)	<p>If most of these people live in areas not susceptible to significant coastal erosion [1] (because the coast in those places is resilient / the coast is already protected in places with large populations / the forces of erosion are weak in those places / they live far enough back from the shore) [1], then it could not be considered a major threat [1]. <i>May be expressed as 'One would have to assume that...' [1]</i></p> <p>If people living in coastal areas suffering from erosion do not live in permanent structures and/or have a nomadic life style [1] they would be able to move as the coast eroded [1] so it could not be considered a major threat [1].</p> <p>It's a slow process so it is unlikely that many people would be killed as a result of coastal erosion [1].</p>	2

Question	Answer		Marks
2(d)	<b>Level 3</b> 5–6 marks	A reasoned argument, which uses and evaluates all or most of the evidence provided.	<b>6</b>
	<b>Level 2</b> 3–4 marks	A simple argument, which uses and/or evaluates evidence.	
	<b>Level 1</b> 1–2 marks	A weak answer, which makes some correct reference to evidence but consists of opinion and/or assertion rather than argument <b>or</b> a weak argument which makes no reference to evidence.	
	<b>Level 0</b> 0 marks	No credit-worthy material.	
	<p><b>Indicative content</b></p> <ul style="list-style-type: none"> <li>• Source A suggests a new threat has emerged of sudden coastal erosion and it is unwise to try to protect affected properties.</li> <li>• However, we cannot conclude that this would apply to all cliff top situations. e.g. where the rock is hard like granite.</li> <li>• The article does not outline what action could be taken so it is difficult to assess the legitimacy of the conclusion.</li> <li>• Source B relates increased storm activity to global warming.</li> <li>• This is, in principle, something that action can be taken about.</li> <li>• However, action difficult in practice and too slow to have relevance to coastal erosion.</li> <li>• Source C suggests interference with natural littoral movement leaves cliffs unprotected.</li> <li>• This suggests severity of storms might not matter if natural littoral movement protection could be restored.</li> <li>• However, the man-made activities that interfere with littoral movement may be essential to economic activity in an area, e.g. dredging.</li> <li>• Source D suggests two broad approaches to coastal erosion</li> <li>• but both approaches are problematic.</li> </ul> <p>There is convincing evidence that little can be done in practice to save properties in the cliff top situations. However, not all cliffs erode in this way and we have not got sufficient information to judge the measures which could be taken to protect vulnerable properties. As such the conclusion is too sweeping.</p>		

Question	Answer	Marks
2(d)	<p><b>Notes for the guidance of markers</b></p> <p>Simple supported conclusion 1 or nuanced conclusion 2</p> <p>+ <u>use</u> of 1 or 2 sources +1 or <u>use</u> of all or most (3 or more) sources of evidence +2 <i>not just mentioning or summarising or comprehension</i></p> <p>+ critical evaluation of evidence +1 or (more than one case) +2</p> <p>+ good inferential reasoning +1 or (more than one case) +2 <i>not speculation</i></p> <p>+ personal thinking +1</p>	

Question	Answer	Marks
3(a)	<p>2 marks: In the modern world one needs to get real and get planning. 1 mark: <i>Recognisable paraphrase or significantly incomplete version of the above.</i></p>	2
3(b)	<p>1 mark for each of the following, to a maximum of 3 marks:</p> <ul style="list-style-type: none"> <li>• such an approach [going with the flow] leads to chaos.</li> <li>• forward planning is essential to survival in modern society.</li> <li>• if people with creative ambitions follow such advice those ambitions will be realised.</li> <li>• Forward planning will lead to a happier life.</li> </ul> <p><i>Allow one additional element or one significant omission in each case. If more than three answers are offered, mark the first four only.</i></p>	3
3(c)	<p>Marks for each evaluative point as follows, up to a maximum of 5 marks:</p> <p>2 marks: <i>Valid evaluative point, clearly expressed.</i> 1 mark: <i>Weak attempt at a valid evaluative point.</i></p> <p><i>Paragraph 1</i></p> <ul style="list-style-type: none"> <li>• <i>Conflation</i> of being flexible as regards <i>route</i> with being flexible as regards <i>destination</i>. (<i>Could be expressed as restricting the options between total flexibility and total rigidity.</i>)</li> </ul> <p><i>Paragraph 2</i></p> <ul style="list-style-type: none"> <li>• <i>Non sequitur</i>: the example of a process (Critical Path Analysis) is used to draw a conclusion about single events (e.g. meeting an appointment).</li> <li>• The reference to ‘old hippies stuck in the 1960s’ is <i>ad hominem</i>.</li> </ul> <p><i>Paragraph 3</i></p> <ul style="list-style-type: none"> <li>• <i>Assumption</i> – the works of Somerset Maugham are great literature.</li> <li>• <i>Conflation</i> of having a systematic approach with forward planning.</li> <li>• <i>Assumption</i> – the example of great literature can be generalised to other creative activities.</li> <li>• The last sentence confuses a necessary condition with a sufficient one.</li> </ul> <p><i>Paragraph 4</i></p> <ul style="list-style-type: none"> <li>• <i>Inconsistency</i>: if existence is inherently unpredictable it is difficult to see how one can plan ahead.</li> <li>• <i>Inconsistency</i>: the example is a feature of existence which is not unpredictable.</li> <li>• <i>Assumption</i> – being able to save money enables one to save enough money to enjoy old age / retirement.</li> <li>• <i>Assumption</i> – having enough money is a sufficient condition for enjoyment of old age / retirement.</li> <li>• <i>Assumption</i> – being well-organised is a sufficient condition for being able to save money.</li> </ul>	5



Question	Answer	Marks								
3(d)	<table border="1"> <tr> <td data-bbox="325 248 493 445"><b>Level 3</b> 4–5 marks</td> <td data-bbox="496 248 1313 445">Developed, coherent argument. Reasons strongly support conclusion. Development may include intermediate conclusion or apt examples. Simply structured argument – 4 marks. Effective use of IC etc. – 5 marks.</td> </tr> <tr> <td data-bbox="325 450 493 544"><b>Level 2</b> 2–3 marks</td> <td data-bbox="496 450 1313 544">A simple argument. One reason + conclusion – 2 marks. Two or more separate reasons + conclusion – 3 marks.</td> </tr> <tr> <td data-bbox="325 548 493 642"><b>Level 1</b> 1 mark</td> <td data-bbox="496 548 1313 642">Some relevant comment.</td> </tr> <tr> <td data-bbox="325 647 493 741"><b>Level 0</b> 0 marks</td> <td data-bbox="496 647 1313 741">No relevant comment.</td> </tr> </table>	<b>Level 3</b> 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 etc. – 5 marks.	<b>Level 2</b> 2–3 marks	A simple argument. One reason + conclusion – 2 marks. Two or more separate reasons + conclusion – 3 marks.	<b>Level 1</b> 1 mark	Some relevant comment.	<b>Level 0</b> 0 marks	No relevant comment.	<b>5</b>
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<p><i>Maximum 3 marks for wrong conclusion or if conclusion is implied but not stated.</i></p> <p><i>No credit for material merely reproduced from the passage.</i></p>										
<p><b>Specimen level 3 answers</b></p>										
<p><i>Support (152 words)</i></p>										
<p>For thousands of years, humans lived by the natural rhythms of nature rising with the sun and ceasing labour with the onset of night. There was no sense of a task having to be done in a certain time – the task would take as long as was necessary. With the emergence of industrial society, these natural rhythms have been disrupted and chief agent of this disruption is the clock.</p> <p>The clock has brought in the tyranny of the deadline making tasks that would have been fulfilling stressful and pressured. The natural sequences of day and night have now disappeared in a ‘24/7’ society with many people working through the night with detrimental effects on their health.</p> <p>So stress, pressure and ill health are the results of the invention of the clock and these are not the ingredients of a happy life. So we would be happier if clocks had never been invented.</p>										

Question	Answer	Marks
3(d)	<p><i>Challenge (147 words)</i></p> <p>Industrial society and the development of the clock go hand in hand. Many aspects of modern life only work if people are aware of the importance of time as measured and recorded. Shop opening hours and transport systems such as trains and buses are just two examples.</p> <p>The centrality of the clock to peoples' lives has meant that a typical day consists of constant reference to the time. This is because not paying close attention to 'the time' will mean buses being missed and late arrivals at appointments.</p> <p>So the invention of the clock is a necessary condition of the emergence of industrial society. Industrial society has brought many benefits to people in terms of higher standards of living and better health care which are important ingredients of a happy life. Therefore it is not true that we would be happier if clocks had never been invented.</p>	