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**THINKING SKILLS**

**9694/22**

Paper 2 Critical Thinking

**May/June 2017**

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.

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Question	Answer	Marks
1(a)	<p>It is reliable as it is a case of ‘reverse vested interest’ [1]. We would not expect Mr Jones to criticise his own work, but he does [1]. However, it is not significant as this criticism refers to cosmetic appearance rather than the quality of construction [1].</p> <p>However, rushing to finish the job may have meant Jones ‘cut corners’ on the actual construction [1]; although he denies this, he has a vested interest to do so [1].</p>	<b>3</b>
1(b)	<p>As an inexperienced driver, she may have hit the garage wall when trying to get into the garage [1]. The building inspector says that buildings already damaged were likely to be affected by the earth tremor [1]. The wall being knocked by a car may have been sufficient damage for the wall to fall down as a result of the earth tremor [1]. Therefore it is possible that it is highly relevant in identifying an important contributory factor to the wall falling down [1].</p>	<b>3</b>
1(c)	<p>Not significant [1]. It merely means he is typical of most builders [1]. The Grade C mortar is guaranteed for 10 years so would not fail after a short time [1]. Therefore the use of this grade of building materials does not explain why the wall fell down [1].</p>	<b>3</b>

Question	Answer	Marks								
1(d)	<table border="1" data-bbox="304 282 1331 808"> <tr> <td data-bbox="304 282 475 450"><b>Level 3</b> 5–6 marks</td> <td data-bbox="475 282 1331 450">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.</td> </tr> <tr> <td data-bbox="304 450 475 577"><b>Level 2</b> 3–4 marks</td> <td data-bbox="475 450 1331 577">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.</td> </tr> <tr> <td data-bbox="304 577 475 712"><b>Level 1</b> 1–2 marks</td> <td data-bbox="475 577 1331 712">A weak answer, which refers to some of the evidence, possibly including a simple evaluative comment. The conclusion may be unstated or over-stated.</td> </tr> <tr> <td data-bbox="304 712 475 808"><b>Level 0</b> 0 marks</td> <td data-bbox="475 712 1331 808">No credit-worthy material.</td> </tr> </table> <p data-bbox="304 846 560 875"><b>Indicative content</b></p> <p data-bbox="304 913 695 943">The possible conclusions are:</p> <ul data-bbox="360 965 1257 1099" style="list-style-type: none"> <li>• Jones' 'cut corners' because he was rushing to complete the job</li> <li>• The earthquake caused the wall to collapse</li> <li>• The earthquake and previous damage to the wall caused it to collapse.</li> </ul> <p data-bbox="304 1137 1331 1406">Jones admits being pressured to finish the job and the work not being as good as he would have hoped. However, he is clearly an experienced builder and has done many jobs for Smith before. It seems unlikely that he mixed the mortar too thinly (Source E) and laid the bricks too quickly but it is possible. The earthquake was unusual but sound buildings seem not to have been damaged. This suggests the wall collapsed because it had been damaged and the inexperienced driving of the daughter would offer an explanation of how the damage occurred.</p> <p data-bbox="304 1442 783 1471"><b>Notes for the guidance of markers</b></p> <p data-bbox="304 1509 1129 1538">Simple supported conclusion 1 (if no conclusion cap at Level 2)</p> <p data-bbox="304 1576 836 1637">+ simple consideration of alternative +1 AND reasoned rejection of alternative +1</p> <p data-bbox="304 1675 1145 1736">+ 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 data-bbox="304 1774 1123 1843">+ critical evaluation of evidence +1 or (more than one case) +2 + good inferential reasoning +1 or (more than one case) +2</p> <p data-bbox="304 1877 389 1906"><b>Max 6</b></p>	<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>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.	<b>6</b>
<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.									
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Question	Answer	Marks
2(a)(i)	If the music does not contain such notes this shortcoming will not be relevant [1].	1
2(a)(ii)	Not at all. This is a point about the care needed to <i>maintain</i> the sound quality [1], not about the <i>capacity</i> to produce a purer sound quality [1].  <i>Alternatively</i> Significantly. In practice, most records will not enjoy this degree of care [1] and so the sound quality they produce is likely to be poorer [1].	2
2(b)	Effective [1]. It does suggest that people still want to view films on a big screen [1]. This undermines the inference that people are not concerned with quality of film reproduction [1]. People are now more selective about watching films at the cinema; some prefer to go only to see those which make the most of the big-screen experience [1]. On the other hand, this increase in numbers going to the cinema may be for other reasons, e.g. meeting friends rather than the quality of the viewing experience [1].	3
2(c)	1 mark for each plausible factor, for example: <ul style="list-style-type: none"> <li>• The listener's hearing may be impaired in some way</li> <li>• The acoustics of the room they were listening in</li> <li>• The quality of the equipment used to play the music</li> <li>• The quality of the equipment used to record the music</li> <li>• Whether there are other things distracting the listener's concentration on the music</li> <li>• The quality of the performance recorded</li> </ul>	3

Question	Answer	Marks								
2(d)	<table border="1" data-bbox="304 282 1331 741"> <tr> <td data-bbox="304 282 475 376"><b>Level 3</b> 5–6 marks</td> <td data-bbox="475 282 1331 376">A reasoned argument, which uses and evaluates all or most of the evidence provided.</td> </tr> <tr> <td data-bbox="304 376 475 477"><b>Level 2</b> 3–4 marks</td> <td data-bbox="475 376 1331 477">A simple argument, which uses and/or evaluates evidence.</td> </tr> <tr> <td data-bbox="304 477 475 645"><b>Level 1</b> 1–2 marks</td> <td data-bbox="475 477 1331 645">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.</td> </tr> <tr> <td data-bbox="304 645 475 741"><b>Level 0</b> 0 marks</td> <td data-bbox="475 645 1331 741">No credit-worthy material.</td> </tr> </table> <p data-bbox="304 779 560 808"><b>Indicative content</b></p> <ul data-bbox="360 846 1321 1402" style="list-style-type: none"> <li>• Source A offers an explanation of why analogue sound is superior</li> <li>• It also suggests digital recording has been adopted because of computers</li> <li>• However it also suggests the care needed to maintain analogue sound quality is difficult for people to sustain.</li> <li>• Source B strongly supports the claim suggesting these critics may be influenced by outdated evidence.</li> <li>• However, the title of publication suggests it may be biased/have a vested interest towards digital recordings.</li> <li>• Source C suggests these critics are over-bothered about sound quality anyway</li> <li>• but does not necessarily deny that analogue recordings are superior.</li> <li>• Source D offers survey evidence that suggests people cannot tell the difference. This would support the claim.</li> <li>• Source D suggests that digital/analogue is not the most important determinant of sound quality. This would also support the claim.</li> </ul> <p data-bbox="304 1435 783 1464"><b>Notes for the guidance of markers</b></p> <p data-bbox="304 1503 703 1532">Simple supported conclusion 1</p> <p data-bbox="304 1536 644 1565">OR nuanced conclusion 2</p> <p data-bbox="304 1603 644 1632">+ <u>use</u> of 1 or 2 sources +1</p> <p data-bbox="304 1637 1050 1666">OR <u>use</u> of all or most (3 or more) sources of evidence +2</p> <p data-bbox="304 1671 1007 1700"><i>not just mentioning or summarising or comprehension</i></p> <p data-bbox="304 1738 1123 1767">+ critical evaluation of evidence +1 or (more than one case) +2</p> <p data-bbox="304 1805 1075 1834">+ good inferential reasoning +1 or (more than one case) +2</p> <p data-bbox="304 1839 504 1868"><i>not speculation</i></p> <p data-bbox="304 1906 592 1935">+ personal thinking +1</p> <p data-bbox="304 1973 384 2002"><b>Max 6</b></p>	<b>Level 3</b> 5–6 marks	A reasoned argument, which uses and evaluates all or most of the evidence provided.	<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.	<b>6</b>
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Question	Answer	Marks
3(a)	<p><i>2 marks:</i> We should not try to combat the effects of global warming.  <i>1 mark:</i> However, this is an unworkable strategy and we should not try to combat the effects of global warming.</p>	<b>2</b>
3(b)	<p><i>1 mark for each of the following, to a maximum of 3 marks:</i></p> <ul style="list-style-type: none"> <li>• (However,) this is an unworkable strategy</li> <li>• Global warming is a well-established trend that cannot be reversed.</li> <li>• The negative effects of global warming have been exaggerated.</li> <li>• Supporting the efforts to tackle global warming simply encourages this sort of scam.</li> <li>• The way forward for humanity is to colonise other planets.</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>	<b>3</b>

Question	Answer	Marks
3(c)	<p><i>Marks for each evaluative point as follows, up to a maximum of 5 marks:</i></p> <p><i>2 marks: Valid evaluative point, clearly expressed.</i></p> <p><i>1 mark: Weak attempt at a valid evaluative point.</i></p> <p><i>Paragraph 2</i></p> <ul style="list-style-type: none"> <li>• Assumption (between IC of para 2 and MC) that nothing can be done to slow down or mitigate an irreversible trend.</li> <li>• Flaw: straw man. People who think humans can tackle global warming are not committed to the idea that science can create a paradise on earth.</li> </ul> <p><i>Paragraph 3</i></p> <ul style="list-style-type: none"> <li>• Assumption: the new areas for agriculture will be at least the same size/productivity as those they are replacing.</li> <li>• Assumption: effects of global warming are consistent throughout world. Some areas may get colder.</li> <li>• Flaw: selective use of evidence. Air-conditioning homes in areas that have become hot may well outweigh reduced heating bills in presently cold areas that have become warmer.</li> <li>• Flaw: inconsistency between the reasoning in this paragraph and the idea in Paragraph 5 that the planet is not worth saving.</li> </ul> <p><i>Paragraph 4</i></p> <ul style="list-style-type: none"> <li>• Irrelevance: exploitation of renewable energy schemes is not relevant to an assessment of the need to tackle global warming.</li> <li>• One can deal with negative side-effects, without rejecting the thing that produces them/negative side effects not a sufficient condition for rejecting something.</li> </ul> <p><i>Paragraph 5</i></p> <ul style="list-style-type: none"> <li>• Assumption: support for something means it is worthwhile/feasible.</li> <li>• Assumption: 2024 is sufficiently early for this to be a viable strategy to respond to global warming.</li> <li>• Inconsistency: between sceptical view of science/ability of humans to solve problems in Para 2 with over-optimistic view here.</li> <li>• Inconsistency: if humans have made a mess of life on Earth, it seems unlikely that colonising other planets is the way forward without a change in human nature.</li> </ul>	<b>5</b>

Question	Answer	Marks								
3(d)	<table border="1" data-bbox="304 282 1331 779"> <tr> <td data-bbox="304 282 475 483"><b>Level 3</b> 4–5 marks</td> <td data-bbox="475 282 1331 483">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="304 483 475 584"><b>Level 2</b> 2–3 marks</td> <td data-bbox="475 483 1331 584">A simple argument. One reason + conclusion – 2 marks. Two or more separate reasons + conclusion – 3 marks.</td> </tr> <tr> <td data-bbox="304 584 475 685"><b>Level 1</b> 1 mark</td> <td data-bbox="475 584 1331 685">Some relevant comment.</td> </tr> <tr> <td data-bbox="304 685 475 779"><b>Level 0</b> 0 marks</td> <td data-bbox="475 685 1331 779">No relevant comment.</td> </tr> </table> <p data-bbox="304 813 1262 875"><i>Maximum 3 marks for wrong conclusion or if conclusion is implied but not stated.</i></p> <p data-bbox="304 880 1075 913"><i>No credit for material merely reproduced from the passage.</i></p> <p data-bbox="304 947 671 981"><b>Specimen level 3 answers</b></p> <p data-bbox="304 1014 572 1048"><i>Support (141 words)</i></p> <p data-bbox="304 1066 1331 1464">Whilst nations pretend to be acting for the good of all at international conferences, such as those aiming to tackle climate change, in reality they are all looking to protect their own interests. Large industrial producers such as the United States are not likely to reduce their carbon emissions to the extent that they reduce their economic output or harm their economy. Newer industrial countries such as India, which are often the main contributors to global carbon emissions, resent being told to adopt costly ‘green’ technologies by older industrial nations. It is the legacy of 150–200 years of pollution by such nations that the newer industrial nations regard as at the root of the problem. So there are irreconcilable differences between the world’s nations on tackling climate change. Therefore it is not possible to achieve global agreements to tackle climate change.</p> <p data-bbox="304 1503 603 1536"><i>Challenge (132 words)</i></p> <p data-bbox="304 1554 1331 1883">Whilst it is difficult to get nations to agree on a common policy, the problem of global warming is an obvious threat to all. Global action on environmental issues has been achieved in the past. For example, the world-wide ban on the use of CFCs has reversed the threat to the ozone layer that they once posed. The effects of global warming are already obvious with low lying areas already threatened by rising sea levels. Some of the most famous cities, such as New York, are threatened in this way. This means that nations will no longer be able to ignore global warming and its effects. Equally, it will be obvious to them that only joint action will counteract these effects. Therefore it is possible to achieve global agreements on climate change.</p>	<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.	5
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