

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**Pre-U Certificate**

**MARK SCHEME for the October/November 2013 series**

**9777 GLOBAL PERSPECTIVES AND INDEPENDENT  
RESEARCH**

**9777/01**

Paper 1 (Written Paper), maximum raw mark 30

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 will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2013 series for most IGCSE, Pre-U, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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### Assessment Objectives

<p><b>AO1 Deconstruction</b></p> <p>Analyse and evaluate conclusions, argument, reasoning or claims</p>	<ul style="list-style-type: none"> <li>• critically compare <b>different perspectives</b></li> <li>• analyse the <b>structure</b> of arguments, reasoning or claims and identify the <b>key components</b></li> <li>• evaluate the <b>implications</b> of the conclusions, arguments, reasoning or claims</li> <li>• analyse and evaluate the <b>strengths</b> and <b>weaknesses</b> of arguments, reasoning or claims</li> <li>• evaluate the <b>validity</b> of the conclusions, arguments, reasoning or claims</li> </ul>
<p><b>AO1 Reconstruction</b></p> <p>Analyse the evidence for conclusions, arguments, reasoning or claims</p>	<ul style="list-style-type: none"> <li>• research and analyse <b>evidence</b> to support conclusions, arguments, reasoning or claims</li> <li>• evaluate <b>sources</b> used to support conclusions, arguments, reasoning or claims</li> <li>• research and analyse <b>alternative perspectives</b> and <b>conclusions</b> against the supporting evidence</li> <li>• identify and analyse the <b>context</b> upon which arguments have been based</li> <li>• evaluate the <b>reliability</b> and <b>credibility</b> of sources</li> </ul>

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**1 (a) Identify four dangers that Document 1 suggests may result from the development of synthetic biology. [4]**

Examiners should note that this question carries only four marks and therefore candidates are not expected to write in great detail. The question asks candidates to summarise and therefore they should not be overly rewarded for copying out or quoting large amounts of text. Candidates are required to put the author's argument into their own words. However, examiners should ensure that the dangers are taken from the Document, rather than own knowledge. Examiners should award one mark for each accurate point made.

Candidates might mention some of the following:

- Lack of regulation
- Bio-weapons
- Anyone can construct genes from scratch
- Creation of devices not found in the natural world
- Virulent pathogens
- Bio-error
- Domination of multinationals
- Threat to genetic conservation and biodiversity
- Human rights

**(b) How strong is the evidence used in Document 1 to support its claims about the dangers? [6]**

Examiners should note that this question is worth only six marks and therefore they should not expect candidates to cover every point, what matters is the quality of the evaluation. However, to achieve 5 or 6 marks candidates must cover some strengths and weaknesses of the **evidence used**. If they cover only the strengths **or** the weaknesses the maximum mark that can be awarded is 4. Examiners should award a maximum of 2 marks where candidates only describe the evidence used.

Strengths:

- Only supporting evidence given is the open letter which shows some do have concerns
- It is written by ETC, not strictly evidence, but might claim a reputable body (open to debate)

Weaknesses

- Most of the article relies on assertion
- No evidence to support claims such as 'building from scratch', 'without debate', the dangers listed, 'just about anyone' can build these new forms, 'wild west' and 'artificial life.'
- Much of the argument relies on 'could' or 'might' be concentrated in the hands of a multinational firms

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**2 Evaluate the strengths and weaknesses of the reasoning in Document 1. [8]**

Responses should focus on the strengths **and** weaknesses of the evidence and reasoning offered in Document 1. Candidates who focus on only the strengths or weaknesses can still achieve any mark within Level 2 depending upon the quality of the evaluation.

- At Level 3 candidates must consider both the strengths and weaknesses and should reach a judgement
- At Level 2 there is likely to be imbalance, with most of the answer focusing on the weakness of the arguments, although some answers may focus largely on the strengths
- At Level 1 it is likely that candidates will consider only either the strengths or weaknesses. At this level candidates' answers are likely to be descriptive in approach, particularly at the lower end, if there is evaluation it may be very generalised

<p><b>Level 3</b> <b>7-8 marks</b></p>	<p>Sustained evaluation of strengths and weaknesses of reasoning and evidence, critical assessment with explicit reference to how flaws and counter argument support the reasoning in Document 1.</p> <p>Highly effective, accurate and clearly expressed explanation and reasoning; clear evidence of structured argument/discussion, with conclusions reached/explicitly stated in a cogent and convincing manner.</p>
<p><b>Level 2</b> <b>4-6 marks</b></p>	<p>Some evaluation of strengths and weaknesses of reasoning and evidence, but evaluation may focus on one aspect; assessment of flaws etc. may not link clearly to the reasoning in Document 1.</p> <p>Effective and generally accurate explanation and reasoning; some evidence of structured argument/discussion; conclusions may not be explicitly stated or link directly to the analysis.</p>
<p><b>Level 1</b> <b>1-3 marks</b></p>	<p>Little or no evaluation of strengths and weaknesses, although flaws etc. may be identified.</p> <p>Level of communication is limited, response may be cursory or descriptive; communication does not deal with complex subject matter.</p>

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### Indicative content

No set answer is expected and examiners should be flexible in their approach. There is no requirement to use technical terms to access any level and candidates will NOT be rewarded for their use unless they link them directly to the demands of the question.

#### Strengths

- Dangers of the development, bioweapons, virulent pathogens
- Appeals to emotion – we are denied the chance to debate the developments, threat it might cause to genetic conservation and international negotiations on biodiversity
- Appears to consider the counter-argument about the possible benefits such as biofuels, cure for malaria, climate change
- On surface the reasoning is powerful because of the very dangers and lack of regulation, but these are assertions

#### Weaknesses

- Appeals to emotion and emotive language ‘wild west’, ‘bio terror’ and ‘bio-error’
- Lack of evidence to support the claims
- Appeal to authority at end, just because 38 scientists have written an open letter does it mean they are right
- Civil society wants regulation, but no evidence provided for this

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**3 To what extent is the view in Document 2 about the application of genetic research more convincing than the view in Document 1? [12]**

Candidates may adopt a variety of approaches to answering this question. Candidates might consider issues such as reasoning, the evidence used and the credibility of the passages. If candidates do approach it in this way, examiners should **not** expect equal weight to be given to each element, what matters is the quality of the evaluation.

Responses should focus on key reasons, evidence and credibility in both documents in order to compare alternative perspectives and synthesise them in order to reach a reasoned judgement. In order to assess whether Document 1 or 2 is more convincing in their views about the application of genetic research candidates should consider not only the content of the Documents, but critically assess the arguments put forward through a consideration of issues such as the nature of the passages, purpose and language.

- At Level 3 candidates will reach a sustained judgement about which view is more convincing. In order to do this they will have covered a significant range of issues, and evaluated them clearly
- At Level 2 there will be some evaluation and comparison, but it will be either poorly developed or limited in the areas covered
- At Level 1 there will be very little comparison of the passages or evaluation and candidates may simply describe the documents or identify areas of similarity and difference, with little link to the question

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<p><b>Level 3</b> <b>9-12 marks</b></p>	<p>Answers at this level will demonstrate a sustained judgement about whether the passages support the view in the question. There will be sustained evaluation of alternative perspectives; critical assessment with explicit reference to key issues raised in the passages leading to a reasoned and sustained judgement.</p> <p>Highly effective, accurate and clearly expressed explanation and reasoning; clear evidence of structured argument/discussion, with conclusions reached/explicitly stated in a cogent and convincing manner.</p>
<p><b>Level 2</b> <b>5-8 marks</b></p>	<p>Answers at this level will be more than just a comparison of the two documents; there will be some evaluation, but this will not be sustained and may focus on one perspective; assessment may not link key reasons and evidence clearly to the perspective or to the reasoned judgement.</p> <p>Effective and generally accurate explanation and reasoning; some evidence of structured argument/discussion; conclusions may not be explicitly stated or link directly to analysis.</p>
<p><b>Level 1</b> <b>1-4 marks</b></p>	<p>Answers at this level will describe a few points and there will be little or no evaluation of perspectives, although some relevant evidence or reasons may be identified. If there is any judgement it will be unsupported or superficial.</p> <p>Level of communication is limited; response may be cursory or descriptive; communication does not deal with complex subject matter.</p>

### **Indicative content**

It is likely that candidates will disagree with the proposition, but to achieve the top level they cannot ignore the claim and must evaluate the evidence put forward to support it, which is found in Document 1. No set answer is expected and examiners should be flexible in their approach. Indicative points include:

Candidates may consider some of the following:

- The appeal to emotion and pity in both Documents. In Document 1 use of bio-terror and bio-error, danger to negotiations on biodiversity, crosses unacceptable ethical boundaries. Meanwhile Document 2 argues that it could prevent death, use of words such as ‘fatal’
- The lack of evidence to support the claims made in both Documents
- Document 2 takes a very narrow ethical view on the developments, whereas Document 1 takes a much wider perspective
- Document 1 goes beyond gene manipulation for ‘sibling saviour’ and looks at wider implications in terms of creating synthetic life forms or biological parts that do not exist naturally

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- Both arguments appear reasonable, but at times rely on extremes – having a baby to eat it or torture it
- Both appear to consider the counter-arguments. In Document 1 over biofuels, malaria, climate change. In Document 2 over not creating a child for itself
- Document 2 makes an appeal to authority, using Kant
- Both Documents appear to pursue reasonable arguments. Document 2 compares using someone’s blood or having a child to provide a complete family with ‘saviour sibling’, whilst Document 1 argues that the prevention of the development is important to ensure biodiversity and genetic conservation and that the development will cross unacceptable ethical boundaries
- The origin of the sources
- The structure of the arguments