

Geography A

General Certificate of Secondary Education

Unit **A674/01**: Issues in our Fast Changing World (Foundation Tier)

Mark Scheme for June 2013

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.














All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

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











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Annotations

| Annotation | Meaning |
|---|--|
|  | Correct Response (use only to credit in point marked questions). |
|  | Incorrect Response (use only to indicate incorrect in point marked questions). |
|  | Information omitted. |
|  | Unclear. |
|  | Irrelevant. |
|  | Development. |
|  | Two statements are linked. |
|  | To indicate the full extent of a statement which is credited. |
|  | Level one. |
|  | Level two. |
|  | Level three. |
|  | Point has been seen and noted. |
|  | Benefit of doubt given. |

All answers and pages with a response must have at least one annotation to show that they have been seen.

| Question | | | Answer | Marks | Guidance | |
|----------|-----|------|---|-------|--|--------------------|
| | | | | | Content | Levels of response |
| 1 | (a) | (i) | <p>The Earth's climate is getting warmer B</p> <p>Levels of emissions are increasing around the world A</p> <p>The amount of polar ice is decreasing E</p> | 3 | <p>Credit each correct answer with a  and an incorrect answer with a .</p> <p>Point mark 3 x 1.</p> <p>If a candidate gives two responses (even if one of these responses is correct), then no mark should be awarded for that part of the question.</p> | |
| | | (ii) | <p>Ideas such as:</p> <p>There will be an increase in the amount of greenhouse gases created .</p> <p>There will be an increase in the number of cars/ factories/ power stations being used .</p> <p>Countries like China and India will grow their economies  which means greenhouse gas emissions will continue .</p> <p>Increased burning of fossil fuels  will mean that more carbon dioxide is released into the atmosphere .</p> | 2 | <p>Credit each reason with a .</p> <p>Credit a developed point with a .</p> <p>Point mark 1 + 1 development.</p> <p>The idea of economies/ sources of emissions continuing to grow is clearly stated in the text and can earn 1 mark.</p> <p>For the development mark candidates need to make the connection to continued emissions.</p> <p>The development mark may be stated before the point is made.</p> <p>No credit should be given for reference to the ozone layer.</p> | |


| Question | | Answer | Marks | Guidance | |
|----------|------|---|-------|--|--------------------|
| | | | | Content | Levels of response |
| (b) | (i) | From left to right across the diagram the correct answers are 5, 4 and 1 . | 3 | <p>Credit each correct answer with a ✓ and an incorrect answer with a ✗.</p> <p>Point mark 3 x 1.</p> <p>If a candidate gives two responses (even if one of these responses is correct), then no mark should be awarded for that part of the question.</p> | |
| | (ii) | <p>The answer is looking for the candidate to show an understanding of the physical processes that underpin global warming.</p> <p>1 mark is for the idea of solar radiation/ heat being trapped/ not escaping/ being reflected back to Earth.</p> <p>1 mark for either an increase in greenhouse gases or an increase in temperature/warming.</p> <p>Ideas such as: More greenhouse gases (✓) would mean that more heat is trapped by the atmosphere ✓.</p> <p>The lack of heat escaping ✓ into space means that there is an increase in the global temperature ✓.</p> | 2 | <p>Credit each correct answer with a ✓.</p> <p>Point mark 2 x 1.</p> <p>Do not credit answers that suggest that an increase in greenhouse gases will cause more holes in the atmosphere that let in heat which becomes trapped.</p> <p>No credit should be given for reference to the ozone layer.</p> | |



| Question | | Answer | Marks | Guidance | |
|----------|-----|---|-------|--|--------------------|
| | | | | Content | Levels of response |
| 2 | (a) | <p>The greenhouse effect was first described in 1827.</p> <p>The first World Climate Conference discussed whether global warming was happening.</p> <p>The main evidence to suggest that global warming is happening is higher temperatures.</p> | 3 | <p>Credit each correct answer with a  and an incorrect answer with a .</p> <p>Point mark 3 x 1.</p> <p>Ignore answers that are clearly crossed out.</p> <p>If a candidate gives two responses (even if one of these responses is correct), then no mark should be awarded for that part of the question.</p> | |







| Question | | Answer | Marks | Guidance | |
|----------|-----|---|-------|--|--------------------|
| | | | | Content | Levels of response |
| | (b) | <p>Ideas such as:</p> <p>Sunspot activity Solar flares intensify the sun’s heat ✓ and increase global temperatures [D-V].</p> <p>The sun gets hotter ✓ and causes the Earth to heat up [D-V].</p> <p>The uneven temperature on the surface of the sun ✗ causes the Earth to heat up ✗.</p> <p>Volcanic eruptions Ash blocks the sun’s energy and heat ✓ causing temperatures to fall [D-V].</p> <p>Volcanic eruptions can produce a large amount of carbon dioxide ✓ which can cause an increase in the global temperature [D-V].</p> <p>Choice 1: Volcanic eruptions produce carbon dioxide and ash clouds ✓. The ash clouds block the Sun’s heat causing the temperature to fall [D-V].</p> | 4 | <p>Credit each reason with a ✓ and then credit a developed point with a [D-V]. No [D-V] can be awarded if there is not a ✓.</p> <p>Point mark 2 x 2. Award 1 mark for outlining the cause and the second mark for describing the effect this has on climate within the same choice.</p> <p>If more than one example is provided in each section then only mark the first answer. Use [D-V] to indicate that this part of the answer is not being credited.</p> <p>Do not credit periods of warming and cooling – be specific.</p> <p>Credit any ideas about changes volcanic eruptions can have on the climate as long as they are included in the same “choice” section of the answer paper. If the candidate chooses to write about carbon dioxide as Choice 1 and ash clouds as Choice 2 then only credit the answer in Choice 1.</p> | |




| Question | | | Answer | Marks | Guidance | |
|----------|-----|--|--|--|----------|--------------------|
| | | | | | Content | Levels of response |
| | | | <p>Changes in the Earth's orbit Changes in the Earth's orbit occur (✓).</p> <p>If the Earth orbits closer to the Sun ✓ this can make the temperature warmer DEV.</p> | | | |
| | (c) | <p>The three correct statements are:</p> <p>China produces more carbon dioxide than any other country,</p> <p>USA is the second largest contributor to global carbon dioxide,</p> <p>South Korea produces 2% of the global carbon dioxide emissions.</p> | 3 | <p>Credit each correct answer with a ✓ and an incorrect answer with a ✗.</p> <p>Point mark 3 x 1.</p> <p>If the candidate ticks all 5 answers then they score 0. If the candidate ticks 4 answers then score 1 mark.</p> <p>Ignore any answers that have been crossed out.</p> | | |


| Question | | Answer | Marks | Guidance | |
|----------|-----|--------|-------|--|--------------------|
| | | | | Content | Levels of response |
| | (d) | (i) | 4 | <p>Credit each reason with a ✓.</p> <p>Point mark 4 x 1.</p> <p>Mark the first four answers that the candidate provides. Mark left to right and top to bottom. If two answers appear on the same line mark both.</p> <p>Use the resource booklet to help you decide what counts as one impact such as “Longer term changes in temperatures, wind, pressure, precipitation and humidity” from Resource 7.</p> <p>Do not credit an impact that contains both correct and incorrect elements.</p> <p>Do not award a mark if the candidate refers to human impacts in the same sentence.</p> | |

| Question | | Answer | Marks | Guidance | |
|----------|------|--|-------|--|---|
| | | | | Content | Levels of response |
| | (ii) | <p>Indicative content</p> <p>A Level 3 answer is likely to consider the impact of climate change in detail. The answer will seek to go beyond statements, for instance, about cities being flooded and includes ideas on the effect of, for instance, a flooded city on education, families, the local economy or healthcare.</p> <p>A Level 2 answer is likely to focus on the effect on one idea, for instance, cities being flooded but not develop the impact of the city being flooded.</p> <p>A Level 1 answer is likely to make basic statements that do not deal with the impacts of global warming on people. Maximum of 1 mark should be awarded for relevant material that is lifted from the resource booklet without interpretation.</p> <p>Use the resource booklet to help you decide what counts as one impact such as, “Food”, “Water” or “Ecosystems” from Resource 8 or “Longer, more severe droughts and outbreaks of pests and diseases” from Resource 7.</p> <p>Avoid double crediting, particularly the effects of flooding and the effects of sea level rise.</p> | 6 | <p>Use DEV in the text of the answer to show where a developed statement has been made. Place a DEV, DE or EV symbol at the end of the answer.</p> <p>Do not use a  in this style of question.</p> <p>If more than one impact is provided in each section then only mark the first answer. Use IRRU to indicate that this part of the answer is not being credited.</p> <p>There is a variety of information in the Resource Booklet for candidates to use to answer this question, especially from Resource 7 and 8. To move up the levels candidates need to link the chosen impact clearly to people.</p> | <p>Level 3 (5–6 marks) A description of two impacts. At least one impact must be well detailed and clearly linked to the effect on people. The answer may be well supported by information from the resource booklet. Written work is legible and spelling, grammar and punctuation are accurate. Meaning is communicated very clearly.</p> <p>Level 2 (3–4 marks) At least one impact that describes in some detail the link between global warming and the effect that it has on people. Some supporting information from the Resource Booklet may be used. Written work is legible and spelling, grammar and punctuation are mostly accurate. Meaning is communicated clearly.</p> <p>Level 1 (1–2 marks) One or two brief points about one or two impacts. Written work contains mistakes in spelling, grammar and punctuation, which sometimes hinders communication.</p> <p>0 marks No evidence submitted or response does not address the question.</p> |

| Question | | | Answer | Marks | Guidance | | | | | | | | | | | | | |
|-------------------------|-----------------------------|-----|---|-------|----------|--------------------|----------------------|----------------|---------------|-------------------------|-----------------------------|---------------|--|----------------------|--|---|---|--|
| | | | | | Content | Levels of response | | | | | | | | | | | | |
| 3 | (a) | (i) | <table border="1"> <thead> <tr> <th>Adapt</th> <th>Mitigate</th> </tr> </thead> <tbody> <tr> <td>Grain storage</td> <td>Insulating buildings</td> </tr> <tr> <td>Flood defences</td> <td>Afforestation</td> </tr> <tr> <td>Weather advice services</td> <td>Greater use of solar panels</td> </tr> <tr> <td>Afforestation</td> <td></td> </tr> <tr> <td>Insulating buildings</td> <td></td> </tr> </tbody> </table> | Adapt | Mitigate | Grain storage | Insulating buildings | Flood defences | Afforestation | Weather advice services | Greater use of solar panels | Afforestation | | Insulating buildings | | 4 | <p>Credit each correct answer with a  and an incorrect answer with a .</p> <p>Point mark 4 x 1.</p> <p>If more than one answer is provided in each space then mark left to right and top to bottom.</p> | |
| Adapt | Mitigate | | | | | | | | | | | | | | | | | |
| Grain storage | Insulating buildings | | | | | | | | | | | | | | | | | |
| Flood defences | Afforestation | | | | | | | | | | | | | | | | | |
| Weather advice services | Greater use of solar panels | | | | | | | | | | | | | | | | | |
| Afforestation | | | | | | | | | | | | | | | | | | |
| Insulating buildings | | | | | | | | | | | | | | | | | | |

| Question | | | Answer | Marks | Content | Guidance |
|----------|--|------|--|-------|--|---|
| | | | | | | Levels of response |
| | | (ii) | <p>Indicative content These are two examples that show the ideas needed to reach Level 3.</p> <p>Mitigate Insulating buildings means less energy is used for heating which reduces emissions from power stations and can reduce the rate of climate change.</p> <p>Adapt Farmers can plant different crops which are more suited to the changing climate, so food supplies are maintained and people do not starve.</p> | 6 | <p>Use  in the text of the answer to show where a developed statement has been made. Place a ,  or  symbol at the end of the answer. Do not use a  in this style of question.</p> <p>Do not credit the idea that solar panels reduce electricity use.</p> <p>If more than one example is provided in each section then only mark the first answer. Use  to indicate that this part of the answer is not being credited.</p> | <p>Level 3 (5–6 marks) Two explanations, one of which needs to be well developed, which show how their chosen examples may be useful in dealing with climate change. Their answer will show that they understand how carbon dioxide is reduced (mitigation) or how people's lives are maintained or improved (adaptation). Well supported by information which may be drawn from the resource booklet. Written work is legible and spelling, grammar and punctuation are accurate. Meaning is communicated very clearly.</p> <p>Level 2 (3–4 marks) At least one explanation of how their chosen example may be useful in dealing with climate change. Some support from information which may be drawn from the resource booklet. May lack balance. Written work is legible and spelling, grammar and punctuation are mostly accurate. Meaning is communicated clearly.</p> <p>Level 1 (1–2 marks) Descriptive points about one or two of their chosen examples. Limited or no attempt to explain how they may be useful in dealing with climate change. Written work contains mistakes in spelling, grammar and punctuation, which sometimes hinders communication.</p> <p>0 marks No evidence submitted or response does not address the question.</p> |

| Question | | Answer | Marks | Guidance | |
|----------|-----|---|-------|---|--------------------|
| | | | | Content | Levels of response |
| | (b) | <p>The growth of the water hyacinth around Lake Victoria in Kenya is a major problem.</p> <p>A combination of water pollution and global warming has made the problem worse.</p> <p>The plant grows very quickly and can double in size every two weeks.</p> <p>Parts of the lake can no longer be used by people for traditional activities such as fishing.</p> | 4 | <p>Credit each correct answer with a  and an incorrect answer with a .</p> <p>Point mark 4 x 1.</p> <p>If more than one word is provided in each space then mark it wrong with a .</p> | |

| Question | | Answer | Marks | Content | Guidance |
|----------|-----|---|-------|--|--|
| | | | | | Levels of response |
| | (c) | <p>Indicative content Answers should be based on the impacts of climate change on people and not on why water hyacinth has increased or its effect on Lake Victoria.</p> <p>A Level 3 answer is likely to consider the effect of climate change on both groups (men and women). The answer will seek to go beyond statements about money and jobs and instead include ideas on education, families, the local economy, healthcare or the role of women in society.</p> <p>A Level 2 answer is likely to focus on the effect on money and the increase or decrease in jobs caused by the water hyacinth.</p> <p>A Level 1 answer is likely to make basic statements that do not deal with the impacts of the growth of water hyacinth, Maximum of 1 mark should be awarded for relevant material that is lifted from the resource booklet without interpretation.</p> | 6 | Use DEV in the text of the answer to show where a developed statement has been made. Place a 1 , 2 or 3 symbol at the end of the answer. Do not use a  in this style of question. | <p>Level 3 (5–6 marks) Explanation of both the negative views of the fishermen and the positive views of the local women. One of these explanations needs to be well developed. This may be supported by information from the resource booklet or student’s own knowledge. Written work is legible and spelling, grammar and punctuation are accurate. Meaning is communicated very clearly.</p> <p>Level 2 (3–4 marks) Some understanding of the negative views of the fishermen and/or the positive views of the local women. This may be supported by information from the resource booklet or student’s own knowledge. The answer may lack balance. Written work is legible and spelling, grammar and punctuation are mostly accurate. Meaning is communicated clearly.</p> <p>Level 1 (1–2 marks) Basic statements that show little understanding of the different views with little or no support from the resource booklet. Written work contains mistakes in spelling, grammar and punctuation, which sometimes hinders communication.</p> <p>0 marks No evidence submitted or response does not address the question.</p> |

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