

**General Certificate of Secondary Education**

**Geography A**

Unit A671: *Extreme Environments*

**Specimen Paper**

# H

**J380**

Time: 1 hour

Candidates answer on the question paper.

**Additional materials:**  
**Resource Booklet**

Candidate  
Forename

Candidate  
Surname

Centre  
Number

|  |  |  |  |  |
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Candidate  
Number

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### INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do not write in the bar codes.
- Do not write outside the box bordering each page.
- Write your answer to each question in the space provided.

### INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this paper is **50**.
- You will be awarded marks in question 2(a), 2(b), 3(c) and 4(b) for the quality of written communication of your answer.

| FOR EXAMINER'S USE |  |
|--------------------|--|
| 1                  |  |
| 2                  |  |
| 3                  |  |
| 4                  |  |
| <b>TOTAL</b>       |  |

This document consists of **8** printed pages.

**Section A – Hot Deserts and Extreme Environments generally**

Answer **all** questions

1 (a) Explain why hot deserts are classed as extreme environments.

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.....

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..... [3]

(b) Name and describe **ONE** physical process and resulting landform that may occur in a hot desert environment.

You may draw a diagram to help you.

.....

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.....



[5]

Study **Fig. 1** and **Fig. 2** in the separate Resource Booklet.

**(c) (i)** Use **Fig. 1** to identify **TWO** features of the climatic pattern.

.....  
.....  
.....  
..... [2]

**(ii)** Explain how and why the climatic pattern leads to a desert environment as shown in **Fig. 2**.

.....  
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.....  
.....  
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.....  
..... [3]





**Section B – Your Chosen Extreme Environment**

Your answers must refer to **either** a polar environment **or** a mountain environment.

Indicate your choice of extreme environment

.....

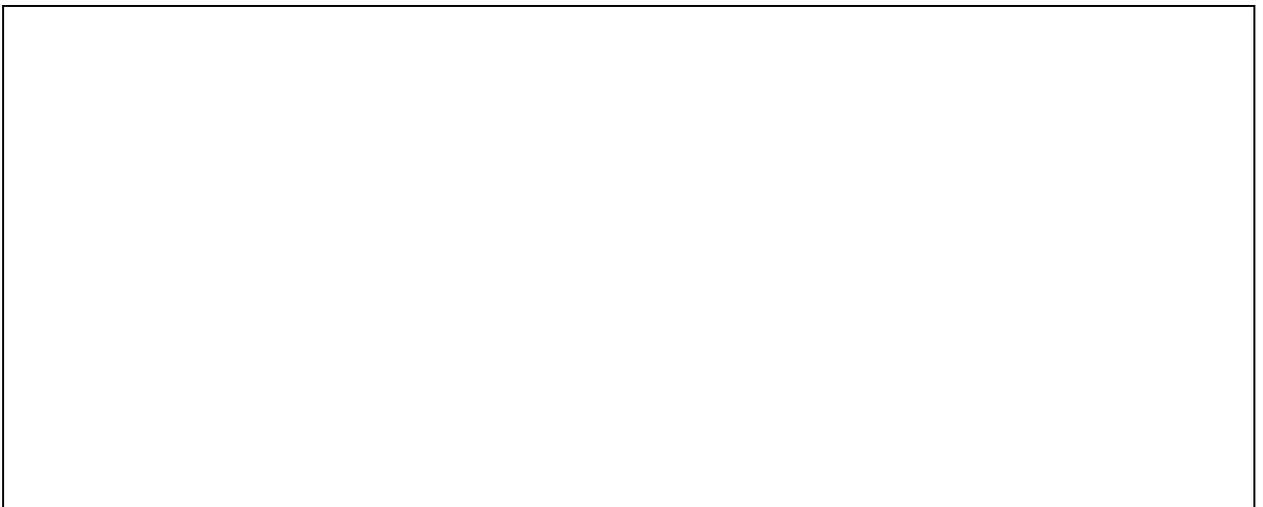
**3 (a)** Justify why your chosen extreme environment is described as ‘extreme’.

.....  
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.....  
..... [2]

**(b)** Describe and explain how physical processes have shaped the landscape of the area you have studied.

You may use a diagram to illustrate your answer.

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[5]





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*Copyright Acknowledgements:*

**Fig.3:** From *Overcoming One of the Greatest Environmental Challenges of Our Times: Re-Thinking Policies to cope with Desertification*. ISBN 92-808-6004-6. With Kind Permission of © The United Nations University, 2007

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Unit A671: *Extreme Environments*

*Higher*

**Specimen Mark Scheme**

The maximum mark for this paper is 50.

| Section A – Hot Deserts and Extreme Environments generally |  |          |
|--|--|----------|
| Question Number  | Answer   | Max Mark |
| 1(a)   | <p><b>Explain why hot deserts are classed as extreme environments.</b></p> <p>Point marking.</p> <p>High daytime temperatures ✓ low night time temperatures ✓ lack of rainfall ✓ isolation idea ✓ lack of resources idea ✓</p> <p>Credit recognition of contrast with less extreme environments ✓</p>  | [3]      |
| 1(b)   | <p><b>Name and describe <u>ONE</u> physical process and resulting landform that may occur in a hot desert environment. You may draw a diagram to help you.</b></p> <p>Insolation weathering ✓ exfoliation ✓ granular disintegration ✓ onion skin ✓ freeze thaw ✓ chemical weathering ✓</p> <p>Process name ✓, accurate description of process ✓ and feature ✓ +1 for development and how process creates landform ✓ [1+1+1] either using annotated and accurate diagram or written text</p>  | [5]      |
| 1(c)(i)  | <p><b>Study Fig. 1 and Fig. 2 in the separate Resource Booklet. Use Fig. 1 to identify TWO features of the climatic pattern.</b></p> <p>Any two valid, descriptive points.</p> <p>E.g. Some months have no precipitation ✓ any NAMED reference to temperature ✓ correlation between temperature and precipitation ✓</p>  | [2]      |
| 1(c)(ii)   | <p><b>Explain how and why the climatic pattern leads to a desert environment as shown in Fig. 2.</b></p> <p>Credit relevant links between climate and landscape.</p> <p>E.g. High temperatures allied with no precipitation ✓ means very little vegetation can grow ✓ and sand encroaches ✓</p> <p>E.g. No rainfall leads to little vegetation ✓ so soil is not bonded and can erode ✓ and sand encroaches ✓</p> <p>One mark for basic idea – further marks for development or further ideas</p>   | [3]      |
| 2(a)   | <p><b>Outline how and why desertification occurs.</b></p> <p><b>0 marks</b> No evidence submitted or response does not address the question.</p> <p><b>Level 1 [1-2 marks]</b> Demonstrates limited understanding by using simple, brief statements attempting to explain how desertification occurs (eg deserts spread, there is less rainfall in areas close to deserts, land is made bare/less plants grow etc). Written work contains mistakes in spelling, grammar and punctuation, which sometimes hinder communication.</p> <p><b>Level 2 [3-4 marks]</b> Demonstrates sound understanding by using developed statements which attempt to explain how and why desertification occurs (eg deserts spread because climate change causes less rain to fall in areas close to deserts, overcultivation causes land to become bare etc). Written work is legible and spelling, grammar and punctuation are mostly accurate. Meaning is communicated clearly.</p> |          |

| Section A – Hot Deserts and Extreme Environments generally |  |            |
|--|--|------------|
| Question Number  | Answer   | Max Mark   |
|  | <p><b>Level 3 [5-6 marks]</b> Demonstrates thorough understanding by using developed statements which explain comprehensively how and why desertification occurs (eg deserts extend into nearby savanna areas because global warming is resulting in longer periods of drought in these areas, high population growth rates cause overcultivation of marginal lands and thus soils are more easily eroded, deforestation caused by increased demand for wood for cooking results in less transpiration and lower rainfall totals etc). Written work is legible and spelling, grammar and punctuation are accurate. Meaning is communicated very clearly.</p> <p><b>Indicative content</b></p> <p>Overcultivation, population growth</p> <p>High birth rates, more food needed increases pressure on land through over cultivation</p> <p>Migration idea</p> <p>Overgrazing, nomadic farmers allow grazing on marginal land</p> <p>Deforestation, vegetation felled – wood for fuel needed</p> <p>Increased population means increasing demand for wood</p> <p>Climate change/global warming</p> <p>Climate becoming drier/ Less rainfall</p> <p>Fires, started from ash then becoming out of control</p> <p>Migration, refugees from civil wars/droughts/persecution</p> | <b>[6]</b> |

| Section A – Hot Deserts and Extreme Environments generally |   |             |
|--|---|-------------|
| Question Number  | Answer  | Max Mark    |
| 2(b)   | <p><b>Study Fig. 3 above which suggests that desertification is a major global challenge.</b></p> <p><b>Explain why it creates problems for the environment <u>and</u> people.</b></p> <p><b>0 marks</b> No evidence submitted or response does not address the question.</p> <p><b>Level 1 [1-2 marks]</b> Demonstrates limited understanding of evidence with an attempt at explanation. Basic description of the problems caused by desertification. Written work contains mistakes in spelling, grammar and punctuation, which sometimes hinder communication.</p> <p><b>Level 2 [3-4 marks]</b> Demonstrates sound understanding of the evidence with clear explanation of the problems caused by desertification or may include developed explanation of environment <u>or</u> people, or a basic explanation of both. Written work is legible and spelling, grammar and punctuation are mostly accurate. Meaning is communicated clearly.</p> <p><b>Level 3 [5-6 marks]</b> Demonstrates thorough understanding of the evidence with accurate and developed explanation of the problems caused by desertification to include both environment and people. Written work is legible and spelling, grammar and punctuation are accurate. Meaning is communicated very clearly.</p> <p><b>Indicative content</b></p> <p><b>Problems on environment</b></p> <p>Land exhausted of nutrients</p> <p>Soil is lost through wind erosion</p> <p>Overgrazing means land stripped bare making soil more vulnerable to erosion</p> <p>Protective vegetation disappears making soil more vulnerable to erosion</p> <p>Crops no longer grow</p> <p><b>Problems for people</b></p> <p>Poorer grazing</p> <p>Lower crop production</p> <p>Underground water reserves used up so less water for crop production/irrigation</p> <p>Puts pressure on food/water resources</p> <p>Starvation (if qualified)</p> <p>People forced to migrate</p> | [6]         |
| <b>Section A Total</b>                                     |   | <b>[25]</b> |

| Section B– Your Chosen Extreme Environment |  |          |
|--|--|----------|
| Question Number                            | Answer   | Max Mark |
| 3  | <p>Your answers must refer to <u>either</u> a polar environment <u>or</u> a mountain environment.</p> <p>Indicate your choice of extreme environment.</p>  |          |
| 3(a)                                       | <p>Justify why your chosen extreme environment is described as 'extreme'.</p> <p>Allow any TWO <b>specific</b> references to temperature, aridity/precipitation, relief/topography, isolation, altitude, danger.</p>   | [2]      |
| 3(b)                                       | <p>Describe and explain how physical processes have shaped the landscape of the area you have studied. You may use a diagram to illustrate your answer.</p> <p>NB Area chosen should be a polar or mountain environment.</p> <p>Point marking to be used, crediting development of description and explanation.</p> <p>The processes described and explained are most likely to be glacial processes and weathering processes such as freeze thaw. However be prepared to award credit for acceptable alternative answers, providing the physical processes occur within polar or mountain environment. Credit to be awarded for written text or labels on diagram.</p> <p>eg in the Himalayas the landscape has been shaped by glacial erosion (✓) as temperatures are either below freezing point or fluctuate around zero for much of the year (✓) .</p> <p>Pyramidal peaks/arêtes/corries are formed (✓) as hollows in mountain sides are increased in size by plucking/abrasion of ice (✓) and sharp knife edged ridges/aretes are left in between adjacent corries (✓). Freeze/thaw weathering occurs on exposed rock faces (✓) and results in build up of scree slopes at their base (✓)</p> <p>5 @ 1 mark or development</p> | [5]      |
| 3(c)                                       | <p>Explain why your chosen extreme environment is challenging for different groups of people.</p> <p><b>0 marks</b> No evidence submitted or response does not address the question.</p> <p><b>Level 1 [1-2 marks]</b> Demonstrates limited understanding of challenges with an attempt at explanation. Challenge is identified and described in basic terms. ONE group mentioned. Challenge is related to group. Written work contains mistakes in spelling, grammar and punctuation which sometimes hinder communication.</p>  |          |

| Section B– Your Chosen Extreme Environment |  |          |
|--|--|----------|
| Question Number                            | Answer   | Max Mark |
|  | <p><b>Level 2 [3-4 marks]</b> Demonstrates sound understanding of challenges with clear and detailed explanations. Challenges are identified and described with some basic detail, together with some explanation.</p> <p>TWO groups mentioned. Challenges relate to more than ONE group. Written work is legible and spelling, grammar and punctuation are mostly accurate. Meaning is communicated clearly.</p> <p><b>Level 3 [5-6 marks]</b> Demonstrates thorough understanding of the challenges with accurate and developed explanations with specific examples given.</p> <p>At least TWO groups mentioned. Challenges relate to more than ONE group. Written work is legible and spelling, grammar and punctuation are accurate. Meaning is communicated very clearly.</p> <p><b>Indicative content</b></p> <p>Ideas such as harsh living environment, struggle for survival, possible lack of income, negative impacts of tourism, notion of danger, physical challenge, climatic challenges, clothing/equipment choice.</p>  | [6]      |
| 3(d)                                       | <p><b>You have been asked to organise an expedition to your chosen extreme environment. Identify and justify <u>ONE</u> essential survival item that you would take.</b></p>   |          |
|  | <p>Items may relate to clothing, food or survival and must relate to chosen extreme environment. Developed justification for extra mark with each item</p> <p>E.g.</p> <p>Warm clothing ✓ to avoid chill/frostbite/aid survival in sub-zero temperatures ✓</p> <p>Many layers ✓ to trap air to increase insulation such clothing would allow movement outdoors in chosen extreme environment ✓</p> <p>Sun glasses ✓ to protect eyes from glare ✓</p> <p>Dried food ✓ light to carry/relatively easy to cook essential if food source scarce in environment ✓</p> <p>Energy food ✓ to provide body with energy to cope with physical challenge extra energy needed in extreme conditions ✓</p> <p>Walking boots ✓ for rough terrain ✓</p> <p>Gun/knife ✓ for protection from animals or for hunting for food ✓</p> <p>GPS ✓ for accurate location/tracking of position when settlements/shelter can be significant distances apart ✓</p> <p>Radio ✓ to keep in contact in case of emergency remoteness means communication of position at any given time could be crucial ✓</p> <p>(Mobile phone mark only if well argued)</p> <p>Point marking – two marks for any chosen appropriate item and associated developed justification.</p> | [2]      |

| Section B– Your Chosen Extreme Environment |   |             |
|--|---|-------------|
| Question Number                            | Answer  | Max Mark    |
| 4(a)                                       | <p><b>Identify <u>ONE</u> source of information that you found useful when studying your extreme environment. Explain how it helped your understanding of the extreme environment.</b></p> <p>Point marking</p> <p>Identification of resource no marks – two marks for relevant and appropriate source with developed reason why it helped understanding.</p> <p>E.g. DVD had a lot of background information about how people used the environment ✓</p> <p>It gave me a lot of facts and figures ✓ and also showed the challenges faced by those that live there ✓</p> <p>E.g. DVD had images that showed key features of the climate/landscape was like ✓</p> <p>It was an up to date resource ✓ which meant that I got a current picture of the environment ✓</p>   | [2]         |
| 4(b)                                       | <p><b>In what ways do you think your chosen extreme environment may change in the future? Describe and explain the impact of these changes.</b></p> <p><b>0 marks</b> No evidence submitted or response does not address the question.</p> <p><b>Level 1 [1-2 marks]</b> Demonstrates limited understanding of changes and possible impacts with a limited attempt at explanation. Change(s) listed with little or no relevant explanation. Basic change with little or no reference to impact. Written work contains frequent mistakes in spelling, grammar and punctuation, which impedes communication of meaning.</p> <p><b>Level 2 [3-4 marks]</b> Demonstrates understanding of changes and impacts with a sound attempt at explanation. Changes are identified with some detail. Mention of impact attempted. Mention made of own views also. Written work contains mistakes in spelling, grammar and punctuation, which sometimes hinder communication.</p> <p><b>Level 3 [5-6 marks]</b> Demonstrates good understanding of the changes and impacts with clear and detailed explanations. Changes described with good attempt to give description of impact. Own views related with some supporting evidence. Written work is legible and spelling, grammar and punctuation are mostly accurate. Meaning is communicated clearly.</p> <p><b>Level 4 [7-8 marks]</b> Demonstrates excellent understanding of the changes and impacts with accurate and developed explanations. Changes are described with detailed explanation. Impact of changes on the environment are clearly given. Changes given are relevant and reasonable. Own views given with reasoning evident. Written work is legible and spelling, grammar and punctuation are accurate. Meaning is communicated very clearly and accurately.</p> <p>Changes may be physical, human, environmental or a combination of all.</p> | [8]         |
| <b>Section B Total</b>                     |   | <b>[25]</b> |
| <b>Paper Total</b>                         |   | <b>[50]</b> |

**Assessment Objectives Grid (includes QWC)**

| <b>Question</b> | <b>A01</b> | <b>A02</b> | <b>A03</b> | <b>Total</b> |
|-----------------|------------|------------|------------|--------------|
| <b>1(a)</b>     | 3          |            |            | <b>3</b>     |
| <b>1(b)</b>     | 2          | 2          | 1          | <b>5</b>     |
| <b>1(c)(i)</b>  |            | 1          | 1          | <b>2</b>     |
| <b>1(c)(ii)</b> | 1          | 1          | 1          | <b>3</b>     |
| <b>2(a)</b>     | 6          |            |            | <b>6</b>     |
| <b>2(b)</b>     | 4          | 1          | 1          | <b>6</b>     |
| <b>3(a)</b>     | 2          |            |            | <b>2</b>     |
| <b>3(b)</b>     | 3          | 1          | 1          | <b>5</b>     |
| <b>3(c)</b>     | 2          | 4          |            | <b>6</b>     |
| <b>3(d)</b>     |            | 1          | 1          | <b>2</b>     |
| <b>4(a)</b>     | 1          | 1          |            | <b>2</b>     |
| <b>4(b)</b>     | 2          | 2          | 4          | <b>8</b>     |
| <b>Totals</b>   | <b>26</b>  | <b>14</b>  | <b>10</b>  | <b>50</b>    |