



**GCE AS/A level**

1201/01

**GEOGRAPHY G1**

**CHANGING PHYSICAL ENVIRONMENTS**

A.M. FRIDAY, 15 January 2010

1½ hours

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**ADDITIONAL MATERIALS**

In addition to this examination paper, you will need one 12 page answer book.

**INSTRUCTIONS TO CANDIDATES**

Answer **all** questions.

Write your answers in the separate answer book provided.

Write your name, centre number and candidate number in the spaces at the top of the answer book.

**INFORMATION FOR CANDIDATES**

Each question carries **25** marks.

The number of marks is given in brackets at the end of each question or part-question.

You are reminded that assessment will take into account the quality of written communication used in your answers.

**THIS PAPER REQUIRES THAT YOU MAKE THE FULLEST POSSIBLE USE OF APPROPRIATE EXAMPLES IN SUPPORT OF YOUR ANSWERS. SKETCH-MAPS AND DIAGRAMS SHOULD BE INCLUDED WHERE RELEVANT.**

## G1 - CHANGING PHYSICAL ENVIRONMENTS

Answer **all** questions

Make the fullest possible use of examples in support of your answers.

### Figure 1: Changing distribution of the Mountain Ringlet butterfly

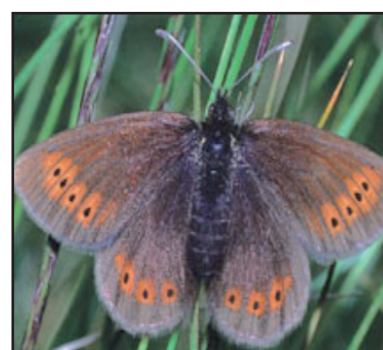
## Extinction fear for butterflies

**The UK's only mountain dwelling species of butterfly, the Mountain Ringlet, could be wiped out in Scotland because of climate change, experts have warned.** Warmer temperatures are driving the Mountain Ringlet higher up hillsides in the search for cooler conditions.

Paul Kirkland, BCS director, said the Mountain Ringlet faced a very real threat. He said: "This butterfly is retreating higher up the hillsides as the warmer weather makes lower habitats unsuitable. The fear is that as climate change continues, this rare species will run out of mountain, and become extinct in Scotland."

The flip side of global warming has seen species which have died out in the south surviving in Scotland.

Mr Kirkland said: "There are already parts of Scotland harbouring butterflies that have become extinct in England, and the largely unspoilt landscape found in the uplands is an increasingly important habitat."



Butterfly Conservation Scotland (BCS) has appealed to the public to report sightings of the Mountain Ringlet

Source: <http://news.bbc.co.uk>

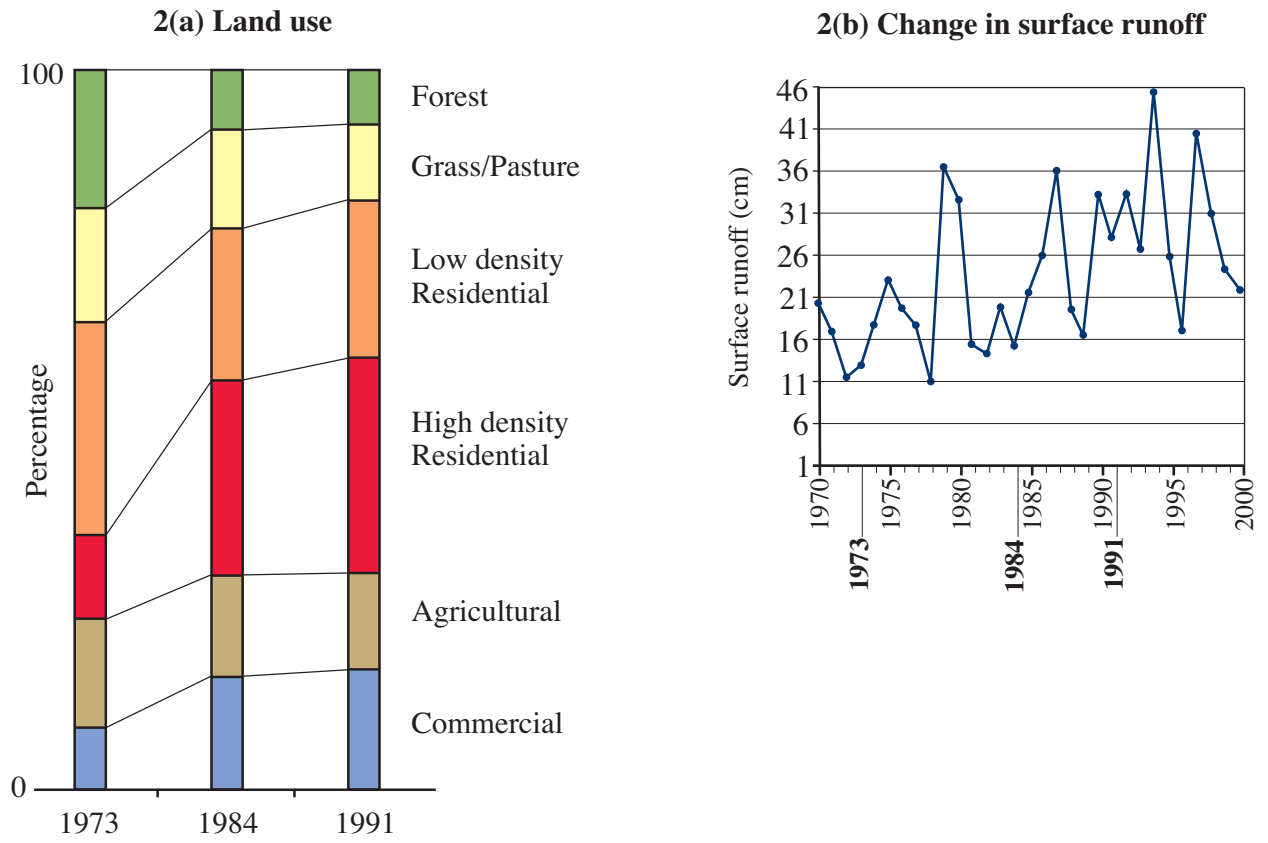
Changes in grazing pressure on mountain grasslands and planting woodland will affect the structure and species composition of the mat grass grasslands. These are the Mountain Ringlet's main habitat and this will affect population sizes.

Source: <http://www.stirling.gov.uk>



1. (a) Use **Figure 1** to describe the influence of climate change on the changing distribution of the Mountain Ringlet butterfly. [5]
- (b) Describe and explain **one** example of short-term climate change. [10]
- (c) Discuss the potential impacts of rising sea level on people. [10]

**Figure 2: Long Eagle Creek drainage basin, Indiana, USA**



Source: <http://www.urisa.org>

2. (a) Use **Figures 2(a)** and **2(b)** to describe the links between changes in land use and surface runoff in Long Eagle Creek drainage basin. [5]
- (b) Explain how **two** of the physical characteristics of a drainage basin can increase the risk of flooding. [10]
- (c) Discuss the effectiveness of management strategies used to overcome the impacts of flooding. [10]

Figure 3: Before and after the tsunami of 26<sup>th</sup> December 2004, Khao Lak, Thailand



Source <http://www.stormcenter.com>

3. (a) Describe the changes resulting from the 2004 tsunami on the area shown in **Figure 3**. [7]
- (b) Examine the value of photographs and field sketches in the investigation of changing physical environments. [8]
- (c) Discuss the strengths and weaknesses of the methods of presenting data used in your own investigation into a changing physical environment. [10]  
*You should state clearly the question that you have investigated.*