



**GEOGRAPHY (PRINCIPAL)**

Paper 4 Research Topic

**9768/04**

**May/June 2016**

**1 hour 30 minutes**

Additional Materials: Answer Booklet/Paper



**READ THESE INSTRUCTIONS FIRST**

If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet.

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams or graphs.

Do not use paper clips, glue or correction fluid.

Choose Section A **or** Section B **or** Section C, according to your research topic.

Answer **three** questions, from the same section.

You are advised to spend thirty minutes on each Question.

For **Section A**, Small-scale Ecosystems, answer:

Question 1, Question 2 and **either** Question 3 **or** Question 4.

For **Section B**, Managing Rural Environments, answer:

Question 5, Question 6 and **either** Question 7 **or** Question 8.

For **Section C**, Fluvial Geomorphology, answer:

Question 9, Question 10 and **either** Question 11 **or** Question 12.

The Insert contains all the Figures referred to in the Question Paper.

At the end of the examination, fasten all your work securely together.

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

The syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 3 Pre-U Certificate.

This document consists of **7** printed pages, **1** blank page and **1** Insert.

**Section A: Small-scale Ecosystems**

Answer **three** questions:  
Question 1, Question 2  
and **either** Question 3 **or** Question 4.

- 1** Study Fig. 1, which shows the survival rates of new ash and sycamore saplings in a woodland near Thetford, England, over a 5-year period.
- (a)** Using evidence from Fig. 1, give the difference in survival rate between ash trees which have been browsed by deer and those protected from browsing in year 4. [2]
- (b)** Using Fig. 1, compare and contrast the survival rates for browsed and protected sycamore trees over the 5-year period. [4]
- (c)** Study Fig. 2, which shows the change in biomass volume of newly planted scots pine trees and sitka spruce trees at selected sites in the UK between 1995 and 2004.
- To what extent are the trends shown in Fig. 2 similar for scots pine and sitka spruce? [6]
- (d)** Evaluate the usefulness of Figs. 1 and 2 to those studying the biotic components of small-scale ecosystems. [8]

- 2 (a) Study Fig. 3, which shows the location of sand dunes at Beadnell Bay, Northumberland, England.

Using Fig. 3, suggest how the area has been managed to conserve the dune system and enable public access to it. [5]

- (b) 'The main aim of small-scale ecosystem management is to change how humans value environments.'

From your wider study of small-scale ecosystems, how far do you agree with this statement? [10]

**EITHER**

- 3 With reference to your own investigation of small-scale ecosystems, assess the relative contributions of primary and secondary data.

Begin by stating the question or hypothesis that you investigated. [15]

**OR**

- 4 With reference to your own investigation of small-scale ecosystems, assess the limitations of your study in terms of the methods used and the data collected.

Begin by stating the question or hypothesis that you investigated. [15]

**Section B: Managing Rural Environments**

Answer **three** questions:  
Question 5, Question 6  
and **either** Question 7 **or** Question 8.

- 5** Study Fig. 4, which shows the number of new housing completions in the Lake District National Park, England, from 2007 to 2012.
- (a) Giving evidence from Fig. 4, state the difference in the number of houses completed in 2011–2012 and 2007–2008. [2]
- (b) Using Fig. 4, contrast the change in the amount of completed unfettered housing with that of completed affordable housing from 2007 to 2012. [4]

Study Fig. 5, which shows information about second homes in Wales in 2011.

- (c) To what extent does there appear to be a North–South pattern to the distribution shown on Fig. 5? [6]
- (d) Assess the value of Figs. 4 and 5 to those responsible for managing housing provision in rural areas. [8]

- 6 (a) Study Fig. 6, which shows the index of rurality for selected villages along a transect leading from the edge of a large UK city into the surrounding rural area.

The index of rurality measures the urban and rural characteristics of the selected villages.

'Villages closer to large cities are less rural in character than more remote settlements.'

How far does Fig. 6 support this statement? [5]

- (b) From your wider study of managing rural environments, explain why some rural settlements are more likely to change than others. [10]

**EITHER**

- 7 With reference to your own investigation of managing rural environments, assess the relative contributions of primary and secondary data.

Begin by stating the question or hypothesis that you investigated. [15]

**OR**

- 8 With reference to your own investigation of managing rural environments, assess the limitations of your study in terms of the methods used and the data collected.

Begin by stating the question or hypothesis that you investigated. [15]

**Section C: Fluvial Geomorphology**

Answer **three** questions:  
Question 9, Question 10  
and **either** Question 11 **or** Question 12.

- 9** Study Fig. 7, which shows the sinuosity index for 10 meanders along the course of a river between 1997 and 2010.
- (a) Giving evidence from Fig. 7, state which meander showed the greatest change in sinuosity index between 1997 and 2010. [2]
- (b) Using Fig. 7, contrast the change in sinuosity index for meander 7 with the change in meander 8 from 1997 to 2010. [4]

Study Fig. 8, which shows maps of meanders 2 and 3 in 1997, 2006 and 2010.

- (c) Compare and contrast the change in form of the two meanders shown in Fig. 8. [6]
- (d) Assess the value of Figs. 7 and 8 to those studying changes in river meanders over time. [8]

- 10 (a)** Study Fig. 9, which shows the height of a river channel bed upstream of a new dam between 1950 and 2010.

The dam was completed in 1948. Heights shown are in metres above the pre-dam level of the river channel bed.

Using Fig. 9, describe how the dam has changed the level of the river channel bed from 1950 to 2010. [5]

- (b)** 'Sudden variations in the magnitude of discharge are the dominant factor in the formation of fluvial landforms.'

From your wider study of fluvial geomorphology, to what extent do you agree with this statement? [10]

**EITHER**

- 11** With reference to your own investigation of fluvial geomorphology, assess the relative contributions of primary and secondary data.

Begin by stating the question or hypothesis that you investigated. [15]

**OR**

- 12** With reference to your own investigation of fluvial geomorphology, assess the limitations of your study in terms of the methods used and the data collected.

Begin by stating the question or hypothesis that you investigated. [15]

**BLANK PAGE**

---

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at [www.cie.org.uk](http://www.cie.org.uk) after the live examination series.

Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.