Please write clearly in block capitals.

Centre number | | | | | | Candidate number | | | | |

Surname _____

Forename(s) _____

Candidate signature _____
I declare this is my own work.

A-level
GEOGRAPHY

Paper 1 Physical Geography

Time allowed: 2 hours 30 minutes

For Examiner's Use	
Section	Mark
A	
B	
C	
TOTAL	

Materials
For this paper you must have:
- the colour insert (enclosed)
- a pencil
- a rubber
- a ruler.

You may use a calculator.

Instructions
- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions in Section A.
- Answer **either** Question 2 **or** Question 3 **or** Question 4 in Section B.
- Answer **either** Question 5 **or** Question 6 in Section C.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- If you need additional extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information
- The marks for questions are shown in brackets.
- The total number of marks available for this paper is 120.

Do not write outside the box

Section A

Water and carbon cycles

Answer **all** questions in this section.

0 1 . 1 Outline the relationship between the water cycle and the carbon cycle in the atmosphere.

[4 marks]

Extra space

Do not write outside the box

Figure 1 is in the insert.

Figure 1 shows the impact of different rates of deforestation and afforestation upon land surface temperature (LST) at different latitudes. The data was collected between 2000 and 2011.

0 1 . 2 Analyse the data shown in **Figure 1**.

[6 marks]

Extra space

Question 1 continues on the next page

Do not write outside the box

Figure 2 is in the insert.

Figure 2 shows a simplified version of Europe's forest carbon cycle.

0 1 . 3 Using **Figure 2** and your own knowledge, assess the implications of the data for attempts to manage carbon transfers.

[6 marks]

Extra space

Do not write outside the box

0 1 . 4 With reference to a river catchment that you have studied, assess the potential factors which can impact upon the flood hydrograph.

[20 marks]

Do not write outside the box

Extra space

Do not write outside the box

36

End of Section A

Turn over for Section B

Do not write outside the box

Section B

Answer **one** question in this section.

Answer **either** Question 2 **or** Question 3 **or** Question 4.

Question 2 **Hot desert systems and landscapes**

0 2 . 1 Outline the role of wind in the process of transport in hot deserts.

[4 marks]

Extra space

Do not write outside the box

Figures 3a and **3b** are in the insert.

Figure 3a shows average total rainfall (1979 – 2009) between November and April measured at multiple recording stations across Saudi Arabia.

Figure 3b shows average total rainfall (1979 – 2009) between June and September measured at multiple recording stations across Saudi Arabia.

0 2 . 2 Analyse the data shown in **Figure 3a** and **Figure 3b**.

[6 marks]

Extra space

Question 2 continues on the next page

Do not write outside the box

Figure 4 shows a landscape in the Namib Desert in southern Africa.

Figure 4

Note: The landforms in this landscape are aligned approximately north-west to south-east and extend from between 16 km to 32 km in length, reaching heights between 60 metres to 240 metres. The sediment source is the Orange River, several kilometres away.

0 2 . 3 Using **Figure 4** and your own knowledge, assess the relative importance of factors leading to the development of this landscape.

[6 marks]

Do not write outside the box

Extra space

Question 2 continues on the next page

Do not write outside the box

0 2 . 4 To what extent can an understanding of feedback systems help to reduce the problem of desertification?

[20 marks]

Do not write outside the box

Extra space

Do not write outside the box

36

End of Question 2

Do not write outside the box

Question 3 Coastal systems and landscapes

0 3 . 1 Outline the role of waves in the transportation of sediments at the coast.

[4 marks]

Extra space

Question 3 continues on the next page

Do not write outside the box

Figure 5 is in the insert.

Figure 5 shows the distribution of coastal erosion and accretion (sediment build up) across selected European coastlines in 2004.

0 3 . 2 Analyse the data shown in **Figure 5**.

[6 marks]

Extra space

Do not write outside the box

Figure 6 is a photograph of a landform located in the Humber Estuary, UK.

Figure 6

Note: This landform extends about 5 km across the Humber Estuary and is only 50 metres wide at its narrowest point. The Holderness coastline to the north comprises mainly boulder clay, which is unconsolidated material deposited at the end of the last ice age.

0 3 . 3 Using **Figure 6** and your own knowledge, assess the relative importance of factors leading to the development of this landform.

[6 marks]

Do not write outside the box

Extra space

Do not write outside the box

0 3 . 4 To what extent can an understanding of feedback systems help with the management of **one or more** coastal landscapes that you have studied?

[20 marks]

Do not write outside the box

Extra space

Do not write outside the box

36

End of Question 3

Do not write outside the box

Question 4 Glacial systems and landscapes

0 4 . 1 Outline processes by which glaciers erode the landscape.

[4 marks]

Extra space

Do not write outside the box

Figure 7 is in the insert.

Figure 7 shows the surface velocity of various glaciers, including Thwaites Glacier, Antarctica.

0 4 . 2 Analyse the data shown in **Figure 7**.

[6 marks]

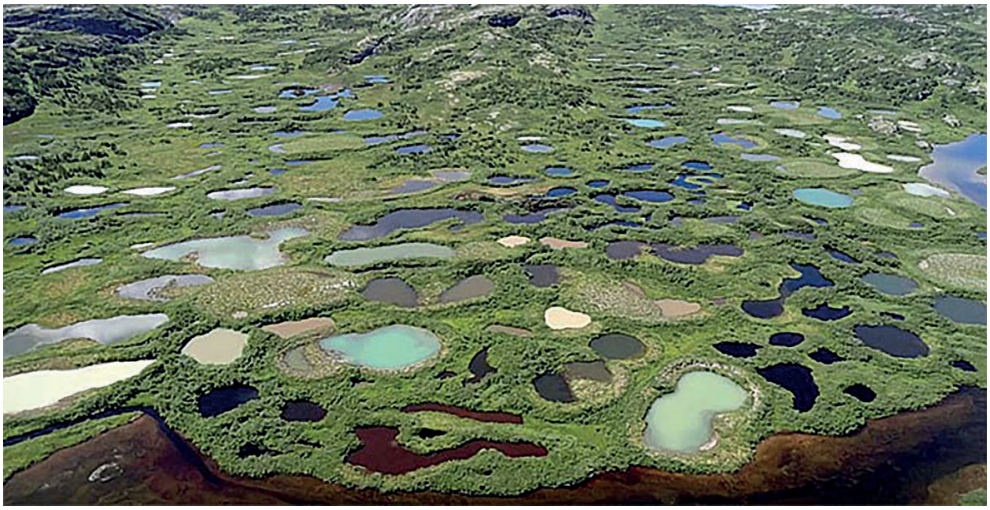
Extra space

Question 4 continues on the next page

Do not write outside the box

Figure 8 is an aerial photograph of a periglacial landscape in northern Canada.

Figure 8



Note: There are thousands of small, medium and large scale lakes in this region. This image was taken in early summer and much of the ice has yet to thaw. Local relief and other aspects of geomorphology determine the rate at which ice melts.

0 4 . 3 Using **Figure 8** and your own knowledge, assess the relative importance of factors leading to the development of this landscape.

[6 marks]

Do not write outside the box

Extra space

Question 4 continues on the next page

Do not write outside the box

0 4 . 4 To what extent can an understanding of feedback systems help with the management of **one or more** cold environments that you have studied?

[20 marks]

Do not write outside the box

Extra space

Do not write outside the box

36

End of Question 4

End of Section B

Do not write outside the box

Section C

Answer **one** question in this section.

Answer **either** Question 5 **or** Question 6.

Question 5 **Hazards**

0 5 . 1 Outline the concept of the Hazard Management Cycle.

[4 marks]

Extra space

Question 5 continues on the next page

Do not write outside the box

Figures 9a – 9d are in the insert.

Figures 9a – 9d show information about volcanic eruptions.

0 5 . 2 Assess the usefulness of **Figures 9a – 9d** in presenting information on volcanic eruptions.

[6 marks]

Extra space

Do not write outside the box

Figure 10 is in the insert.

Figure 10 shows information about the 2010 earthquake in Haiti.

0 5 . 3 Using **Figure 10** and your own knowledge, assess the challenges in managing an event such as this.

[9 marks]

Extra space

Do not write outside the box

0 5 . 4 How far do you agree that global governance is crucial in meeting the challenge of reducing incidence of wildfires?

[9 marks]

Do not write outside the box

Extra space

0 5 . 5 To what extent does plate tectonic theory help in understanding the development of landforms associated with plate movement?

[20 marks]

Do not write outside the box

Do not write outside the box

Extra space

End of Question 5

48

Do not write outside the box

Question 6 **Ecosystems under stress**

0 6 . 1 Outline the effect of human activity on succession in **one** plagioclimax that you have studied (eg heather moorland).

[4 marks]

Extra space

Do not write outside the box

Figure 11 is in the insert.

Figure 11 shows selected climate extremes and impacts affecting coral and forests in tropical and sub-tropical regions.

0 6 . 2 Analyse the data shown in **Figure 11**.

[6 marks]

Extra space

Question 6 continues on the next page

Do not write outside the box

Figure 12 is in the insert.

Figure 12 shows information about coral reefs.

0 6 . 3 Using **Figure 12** and your own knowledge, assess the implications of this information for the management of coral reefs.

[9 marks]

Extra space

Do not write outside the box

0 6 . 4 How far do you agree that global governance has a role to play in the conservation of the savanna grassland biome?

[9 marks]

Do not write outside the box

Extra space

0 6 . 5 With reference to the tropical rainforest biome, assess the view that latitude is the most important factor in its natural development.

[20 marks]

Do not write outside the box

Do not write outside the box

Extra space

48

END OF QUESTIONS

Do not write outside the box

There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED

Do not write outside the box

Question number	Additional page, if required. Write the question numbers in the left-hand margin.

Do not write outside the box

Question number	Additional page, if required. Write the question numbers in the left-hand margin.

Do not write outside the box

Question number	Additional page, if required. Write the question numbers in the left-hand margin.

Do not write outside the box

Question number	Additional page, if required. Write the question numbers in the left-hand margin.

Do not write outside the box

There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED

Copyright information

For confidentiality purposes, all acknowledgements of third-party copyright material are published in a separate booklet. This booklet is published after each live examination series and is available for free download from www.aqa.org.uk.

Permission to reproduce all copyright material has been applied for. In some cases, efforts to contact copyright-holders may have been unsuccessful and AQA will be happy to rectify any omissions of acknowledgements. If you have any queries please contact the Copyright Team.

Copyright © 2021 AQA and its licensors. All rights reserved.