GCSE GEOGRAPHY

Paper 1  Living with the physical environment

Tuesday 22 May 2018  Afternoon  Time allowed: 1 hour 30 minutes

Materials
For this paper you must have:
• the 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 and Section B.

Answer two questions 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. 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 88.
• Spelling, punctuation, grammar and specialist terminology will be assessed in Question 01.12.
Section A The challenge of natural hazards

Answer all questions in this section.

Question 1 The challenge of natural hazards

Study Figure 1, a world map showing plate margins and active volcanoes.

**Figure 1**

![World map showing plate margins and active volcanoes.]

- **Constructive plate margin**
- **Destructive plate margin**
- **Other plate margin**
- **Active volcano**
01. 1 Using Figure 1, which one of the following statements is true?

Shade one circle only.

A  All active volcanoes occur in lines along plate margins.

B  There are more active volcanoes along constructive margins than destructive margins.

C  There are many active volcanoes around the edge of the Pacific Ocean.

D  Active volcanoes are found along the eastern side of North and South America.

[1 mark]

01. 2 Describe the movement of plates along plate margin X.

[1 mark]

Question 1 continues on the next page
Study Figure 2, a map of Iceland showing the tectonic plates. The area is labelled Y on Figure 1.

**Figure 2**

Using Figure 2, how long will it take for the plates to move 100 metres?

Shade one circle only.

A 80 years

B 250 years

C 1200 years

D 4000 years

[1 mark]
01.4 Using Figure 2 and your own understanding, suggest how plate movements cause tectonic hazards in Iceland. [6 marks]

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Question 1 continues on the next page
Study Figure 3, a graph showing variation in average global temperatures, 1880-2017.

Figure 3

Using Figure 3, which one of the following statements is true?

Shade one circle only.

A In the early 1940s global temperatures were below the 20th century average.
B Global temperatures showed a steady increase between 1940 and 1980.
C The 15 hottest years were all recorded between 1995 and 2017.
D Global temperatures have been above the 20th century average every year since 1960.

[1 mark]

Give one natural cause of changes in global temperatures.

[1 mark]
Give **two** pieces of evidence, other than the change in global temperature, that show climate change has taken place.

[2 marks]

1. 

2. 

Explain how the increasing use of fossil fuels and changes in agriculture may have contributed to global changes in temperature.

[4 marks]

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**Question 1 continues on the next page**
Study Figure 4, a map showing the track of Hurricane Irma in September 2017.
01.9 Using Figure 4, describe the track of Hurricane Irma between 6 September 2017 and 12 September 2017. [2 marks]

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01.10 Using Figure 4, what happened to the wind speed of Hurricane Irma between 8 and 12 September 2017? [1 mark]

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01.11 Give one reason why the wind speed of a tropical storm (hurricane) may change as it reaches land. [1 mark]

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Question 1 continues on the next page
Study Figure 5, a news report and photograph showing the effects of Hurricane Irma on the Dutch island of Sint Maarten.

Figure 5

‘Hurricane Irma hit several islands in the Caribbean on 6 September 2017, with devastating consequences for the local population. On Sint Maarten, it has so far resulted in eight deaths. Officials say that 95% of the island has been destroyed and the international airport and harbour have been seriously damaged. Power, running water and most communications have been knocked out by this powerful storm.’

Photo: Overturned shipping containers in Sint Maarten

Assess the extent to which tropical storms have effects on people and the environment.

Use Figure 5 and an example you have studied.

[9 marks]
[+ 3 SPaG marks]
Question 2 The living world

Study Figure 6, a world map showing some global ecosystems.

Figure 6

Using Figure 6, which one of the following statements is true?

Shade one circle only.

A There is a greater area of hot desert in the Southern Hemisphere than the Northern Hemisphere.
B The largest single area of tropical rainforest is in South America.
C Temperate deciduous forests are all found on the western side of continents.
D Hot desert areas are all found between the two tropics.

[1 mark]
Outline **one** reason for the distribution of tropical rainforest.

[2 marks]

Question 2 continues on the next page
Study Figure 7, a typical climate graph for one global ecosystem.

Figure 7

Which global ecosystem is most likely to have the temperature and precipitation pattern shown in Figure 7?

Shade one circle only.

A  temperate deciduous forest

B  tundra

C  hot desert

D  savanna

[1 mark]
State the minimum temperature shown in Figure 7.

Shade **one** circle only.

A  –26°C
B  –28°C
C  –30°C
D  –32°C

[1 mark]

Give **one** reason why polar regions have low temperatures throughout the year.

[1 mark]

Question 2 continues on the next page
Study **Figure 8**, two photographs showing different parts of a tropical rainforest.

**Figure 8**
Using Figure 8 and your own understanding, explain how development in tropical rainforests creates economic advantages but at a cost to the environment.

[6 marks]
Study Figure 9, a photograph of part of an ecotourism scheme in the Amazon rainforest, Brazil.

**Figure 9**

Using Figure 9, suggest how ecotourism can help in managing tropical rainforests sustainably.

[2 marks]

Explain how either international hardwood agreements or selective logging can encourage the sustainable management of tropical rainforests.

[2 marks]
Choose one of the following environments.

Hot desert environment  
Cold environment  

Tick the box to show which environment you have chosen.

Using a case study, to what extent have opportunities for economic activity been developed in your chosen environment?

[9 marks]
End of Section B
Section C Physical landscapes in the UK

Answer two questions from the following:

Question 3 (Coasts), Question 4 (Rivers), Question 5 (Glacial).

Question 3 Coastal landscapes in the UK

Study Figure 10 on the insert, a 1:50 000 Ordnance Survey map of the Woolacombe area in North Devon.

03.1 Using Figure 10, give the four-figure grid reference for a headland with cliffs.

Shade one circle only.

A 4542
B 4643
C 4240
D 4441

[1 mark]

03.2 Using Figure 10, which of the following coastal features is not shown in grid square 4339?

Shade one circle only.

A An area of sand dunes
B A rocky wave cut platform
C A wide sandy beach
D A coastal spit

[1 mark]

Question 3 continues on the next page
03.3 Using **Figure 10**, what is the length and average width of Woolacombe beach between 456438 (labelled X) and 445407 (labelled Y)?

Shade one circle only.

A  Beach length 3.8 km, average width 0.7 km

B  Beach length 4.1 km, average width 0.2 km

C  Beach length 3.3 km, average width 0.4 km

D  Beach length 3.0 km, average width 0.9 km

[1 mark]

03.4 Using **Figure 10**, suggest one reason why this coastline has suitable conditions for the formation of sand dunes.

[1 mark]

Study **Figure 11**, a photograph of part of the coastline shown in **Figure 10**.

**Figure 11**
03.5 Using Figure 11, identify the landform marked Z. [1 mark]

03.6 Explain how a coastline of headlands and bays forms and changes over time. [4 marks]

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Question 3 continues on the next page
'Coastal management schemes are effective in protecting the coastline from physical processes.'

Do you agree?

Using an example, explain your answer. [6 marks]

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End of Question 3
Question 4 River landscapes in the UK

Study Figure 12 on the insert, a 1:50 000 Ordnance Survey map of the River Severn in Shropshire.

04.1 Using Figure 12, give the four-figure grid reference for a river floodplain.

Shade one circle only.

A 6407
B 6304
C 6205
D 6005

[1 mark]

04.2 Using Figure 12, which of the following statements best describes the features of grid square 6205?

Shade one circle only.

A A steeply sloping wooded area rising to over 250 metres in the north.
B A gently sloping river valley with a small tributary entering from the north.
C A south facing slope with a stream and small tributary flowing through woodland.
D A wide flat river valley with a steeper slope in the north, rising from 50 to 80 metres.

[1 mark]

04.3 Suggest one way the upper course of the River Severn may be different from that shown in Figure 12.

[1 mark]

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Question 4 continues on the next page
Study Figure 13, a photograph of the River Severn and its valley. The photographer was looking north east.

Figure 13

Using Figures 12 and 13, what is the height of the land (in metres) at the point marked X on Figure 13? [1 mark]

Describe one feature of the meander at Y on Figure 13. [1 mark]
Explain how river meanders may change over time. [4 marks]

Extra space

Question 4 continues on the next page
Study Figure 14, flood hydrographs for two different streams after the same storm.

Figure 14

Austwick Beck

Clapham Beck

Key

Rainfall (mm)  Discharge (cumecs)

0 4 7

‘Differences in the shape of flood hydrographs are caused by both human and physical factors.’

Do you agree?

Use Figure 14 and your own understanding to explain your answer. [6 marks]

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Question 5 Glacial landscapes in the UK

Study Figure 15 on the insert, a 1:50 000 Ordnance Survey map of part of the Cairngorm Mountains in Scotland.

05.1 Using Figure 15, which grid square matches the following description?

‘There is a valley with a stream in the north. The land rises steeply southwards. It becomes more gentle towards the summit in the south, reaching a height of almost 1000 metres.’

Shade one circle only.

A 0201
B 0299
C 9900
D 9902

[1 mark]

05.2 Locate Loch Avon centred in grid square 0102. What is the length (between points X and Y) and maximum depth of Loch Avon?

Shade one circle only.

A Length 2.5 km, maximum depth over 30 metres
B Length 4.6 km, maximum depth 30 metres
C Length 2.1 km, maximum depth 40 metres
D Length 4.8 km, maximum depth over 40 metres

[1 mark]

05.3 Suggest one reason for the shape of Loch Avon.

[1 mark]
Study **Figure 16**, a photograph of Loch Etchachan, with Ben Macdui (989989) in the background.

**Figure 16**

Using **Figures 15** and **16**, in which direction was the photographer facing when the picture was taken?

Shade one circle only.

- A South east
- B South west
- C North west
- D North east

[1 mark]

Describe one feature of the corrie at Z on **Figure 16**.

[1 mark]

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Question 5 continues on the next page
Explain how a corrie forms and changes over time.

[4 marks]

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'The growing number of visitors to glaciated upland areas in the UK can only bring advantages.'

Do you agree?

Use an example to explain your answer. [6 marks]

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END OF QUESTIONS
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