

Paper Reference 4GE1/01
Pearson Edexcel
International GCSE (9–1)

Total Marks

Geography
Paper 1: Physical Geography

Tuesday 21 May 2019 – Afternoon

**Time: 1 hour 10 minutes plus your
additional time allowance.**

**In the boxes below, write your name,
centre number and candidate number.**

Surname					
Other names					
Centre Number					
Candidate Number					

Y59839A

YOU MUST HAVE

Calculator

YOU WILL BE GIVEN

Resource Book

Diagram Book

INSTRUCTIONS

In Section A, answer TWO questions from Questions 1, 2 AND 3

In Section B, answer ONE question from Questions 4, 5 AND 6

Answer the questions in the spaces provided in this Question Paper or on the separate diagrams – there may be more space than you need.

Calculators may be used.

Turn over

Where asked you must show all your working out with your answer clearly identified at the end of your solution.

INFORMATION

The total mark for this paper is 70

The marks for EACH question are shown in brackets – use this as a guide as to how much time to spend on each question.

There may be spare copies of some diagrams.

ADVICE

Read each question carefully before you start to answer it.

Check your answers if you have time at the end.

Turn over

SECTION A

Answer TWO questions from this section.

Some questions are multiple choice. Write the letter(s) of your chosen answer(s) in the box(es) provided.

Turn over

Indicate which question you are answering by marking a cross in the box. If you change your mind, put a line through the box and then indicate your new question with a cross.

If you answer Question 1 put a cross in this box

☐

1. River Environments.

(a) Identify the statement below that best describes the channel in the lower course of a river.

- A small and fast river channel**
- B wide and deep river channel**
- C narrow and fast river channel**
- D small and narrow river channel**

Answer

(1 mark)

(continued on the next page)

Turn over

1. continued.

(b) (i) Identify ONE process of river erosion.

A levees

B abrasion

C overland flow

D discharge

Answer

(1 mark)

(continued on the next page)

Turn over

1. (b) continued.

(ii) State ONE process of
river transportation.

(1 mark)

(continued on the next page)

Turn over

1. (b) continued.

(iii) Explain ONE way water is
stored in the hydrological
cycle.

(2 marks)

(continued on the next page)

Turn over

1. continued.

**(c) Study Figure 1a in the
Resource Book.**

**Suggest TWO ways people
manage water supply.**

(4 marks)

**Answer lines continue on the
next page.**

1 _____

Turn over

1. (c) continued.

2

(continued on the next page)

1. continued.

(d) Explain ONE way vegetation can affect river discharge.

(3 marks)

(continued on the next page)

Turn over

1. continued.

**(e) Study Figure 1b in the
Resource Book.**

**Identify the river landform.
(1 mark)**

**(f) Explain the formation of a
river meander.**

(4 marks)

**Answer lines are on the next
page.**

Turn over

1. (f) continued.

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(continued on the next page)

Turn over

1. continued.

(g) Study Figure 1c and Figure 1d in the Resource Book.

Analyse the reasons for variations in water quality.

(8 marks)

Answer lines continue on the next three pages.

Turn over

1. (g) continued.

[illegible]

Turn over

1. (g) continued.

[illegible]

Turn over

1. (g) continued.

(Total for Question 1 = 25 marks)

Turn over

**If you answer Question 2 put a
cross in this box**

☐

2. Coastal Environments.

(a) Identify the statement below that best describes the characteristics of a destructive wave.

- A** long wavelength and weak backwash
- B** short wavelength and strong backwash
- C** long wavelength and strong backwash
- D** short wavelength and weak backwash

Answer

(1 mark)

(continued on the next page)

Turn over

2. continued.

**(b) (i) Identify ONE erosional
landform.**

A spit

B cave

C bar

D beach

Answer

(1 mark)

(continued on the next page)

Turn over

2. (b) continued.

(ii) State ONE type of mass movement that affects coastal landscapes.

(1 mark)

(iii) Explain ONE type of mechanical weathering that occurs at the coast.

(2 marks)

Answer lines continue on the next page.

Turn over

2. (b) (iii) continued.

(continued on the next page)

Turn over

2. continued.

**(c) Study Figure 2a in the
Resource Book.**

**Suggest TWO ways changes in
sea level have created coastal
landforms.**

(4 marks)

**Answer lines continue on the
next page.**

1 _____

Turn over

2. (c) continued.

2 _____

(continued on the next page)

Turn over

2. continued.

(d) Explain ONE physical factor that influences the distribution of mangrove ecosystems.

(3 marks)

(continued on the next page)

Turn over

2. continued.

**(e) Study Figure 2b in the
Resource Book.**

**Identify the coastal landform at X
(1 mark)**

**(f) Explain the formation of a
headland.
(4 marks)**

**Answer lines are on the next
page.**

Turn over

2. (f) continued.

[illegible]

(continued on the next page)

Turn over

2. continued.

(g) Study Figure 2c and Figure 2d in the Resource Book.

Analyse the reasons for the choice of different soft engineering strategies shown.

(8 marks)

Answer lines continue on the next three pages.

Turn over

2. (g) continued.

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Turn over

2. (g) continued.

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Turn over

2. (g) continued.

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(Total for Question 2 = 25 marks)

Turn over

**If you answer Question 3 put a
cross in this box**

☐

3. Hazardous Environments.

(a) Identify the statement below that best describes the epicentre of an earthquake.

- A** the area around the earthquake on the surface
- B** the point on the Earth's surface directly above the focus
- C** the area around the earthquake underground
- D** the location underground where the earthquake occurs

Answer

(1 mark)

(continued on the next page)

Turn over

3. continued.

**(b) (i) State ONE measure of
earthquake intensity.
(1 mark)**

**(ii) State ONE characteristic of a
volcanic eruption.
(1 mark)**

(continued on the next page)

Turn over

3. (b) continued.

(iii) Explain ONE cause of an earthquake event.

(2 marks)

(continued on the next page)

Turn over

3. continued.

**(c) Study Figure 3a in the
Resource Book.**

**Suggest a factor that influences
the cause and another factor
that influences the direction of
tropical cyclones.**

(4 marks)

**Answer lines continue on the
next page.**

Cause:

Turn over

3. (c) continued.

Direction:

(continued on the next page)

Turn over

3. continued.

**(d) Explain ONE way earthquakes
can form tsunamis.**

(3 marks)

(continued on the next page)

Turn over

3. continued.

**(e) Study Figure 3b in the
Resource Book.**

**Identify ONE feature of this
building that makes it more
tsunami resistant.**

(1 mark)

**(f) Explain why some countries are
more vulnerable than others to
the impacts of natural hazards.**

(4 marks)

**Answer lines are on the next
page.**

Turn over

3. (f) continued.

(continued on the next page)

Turn over

3. continued.

(g) Study Figure 3c and Figure 3d in the Resource Book.

Analyse the use of hazard, vulnerability and risk mapping in reducing the impact of earthquakes.

(8 marks)

Answer lines continue on the next three pages.

Turn over

3. (g) continued.

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Turn over

3. (g) continued.

[illegible]

Turn over

3. (g) continued.

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(Total for Question 3 = 25 marks)

TOTAL FOR SECTION A = 50 MARKS

Turn over

SECTION B

GEOGRAPHICAL ENQUIRY

Answer ONE question from this section.

Some questions are multiple choice. Write the letter(s) of your chosen answer(s) in the box(es) provided.

Turn over

Indicate which question you are answering by marking a cross in the box. If you change your mind, put a line through the box and then indicate your new question with a cross.

If you answer Question 4 put a cross in this box

☐

4. Investigating River Environments.

A group of students have undertaken a study exploring changes in a river channel every 100 metres.

- (a) (i) Identify the type of sampling method used.**

Select ONE answer from the options on the next page and write the letter in the box provided.

Turn over

4. (a) (i) continued.

A systematic

B random

C stratified

D opportunistic

Answer

(1 mark)

(continued on the next page)

Turn over

4. (a) continued.

(ii) State ONE disadvantage of using one of the sampling methods in the previous question, a(i)
(1 mark)

Sampling method

(continued on the next page)

Turn over

4. (a) continued.

Study Figure 4a in the Resource Book. It shows sample data on velocity from one site on a river. A cork float was used to measure the time taken to travel between two points, A and B

(iii) Calculate the mean time taken for the cork float to travel between points A and B

Give your answer to ONE decimal place.

You must show all your workings in the space on the next page.

(2 marks)

Turn over

4. (a) (iii) continued.

_____ seconds

(continued on the next page)

Turn over

4. (a) continued.

**(iv) Study Figure 4b in the Diagram Book. Using the data in Figure 4a (in the Resource Book), complete Figure 4b for measurements 1 and 4
(2 marks)**

**(v) State the number of the sample which represents the float with the anomalous result.
(1 mark)**

(continued on the next page)

Turn over

4. (a) continued.

(vi) Suggest ONE explanation for this anomaly.

(2 marks)

(continued on the next page)

Turn over

4. continued.

**(b) To extend the river study,
students were asked to use
ONE other primary data method.**

**Explain ONE other primary data
method they might have used.**

(3 marks)

**Answer lines continue on the
next page.**

Turn over

4. (b) continued.

(continued on the next page)

Turn over

4. continued.

You have studied river environments for your geographical enquiry.

(c) Evaluate how successful your chosen data analysis methods were in answering your geographical enquiry question.

(8 marks)

Answer lines continue on the next four pages.

Enquiry question

Turn over

4. (c) continued.

[illegible]

Turn over

4. (c) continued.

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Turn over

4. (c) continued.

[illegible]

Turn over

4. (c) continued.

(Total for Question 4 = 20 marks)

Turn over

**If you answer Question 5 put a
cross in this box**

☐

5. Investigating Coastal Environments.

A group of students have investigated changes in sediment size along a stretch of coast every 100 metres.

- (a) (i) Identify the type of sampling method used.**

Select ONE answer from the options on the next page and write the letter in the box provided.

Turn over

5. (a) (i) continued.

A systematic

B random

C stratified

D opportunistic

Answer

(1 mark)

(continued on the next page)

Turn over

5. (a) continued.

(ii) State ONE disadvantage of using one of the sampling methods in the previous question, a(i)
(1 mark)

Sampling method

(continued on the next page)

Turn over

5. (a) continued.

Study Figure 5a in the Resource Book. It shows sample data on shingle size collected at five sites along a stretch of coastline.

(iii) Calculate the mean shingle size for the five sites.

Give your answer to ONE decimal place.

You must show all your workings in the space on the next page.

(2 marks)

Turn over

5. (a) (iii) continued.

_____mm

(continued on the next page)

Turn over

5. (a) continued.

(iv) Study Figure 5b in the Diagram Book. Using the data in Figure 5a (in the Resource Book), complete Figure 5b for sites 1 and 4 (2 marks)

(v) State the number of the sample which represents the site with the anomalous result. (1 mark)

(continued on the next page)

Turn over

5. (a) continued.

**(vi) Suggest ONE possible
explanation for this anomaly.
(2 marks)**

(continued on the next page)

Turn over

5. continued.

**(b) To extend the coastal study,
students were asked to use
ONE other primary data method.**

**Explain ONE other primary data
method they might have used.**

(3 marks)

**Answer lines continue on the
next page.**

Turn over

5. (b) continued.

(continued on the next page)

Turn over

5. continued.

You have studied coastal environments for your geographical enquiry.

**(c) Evaluate how successful your chosen data analysis methods were in answering your geographical enquiry question.
(8 marks)**

Answer lines continue on the next four pages.

Enquiry question

Turn over

5. (c) continued.

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Turn over

5. (c) continued.

[illegible]

Turn over

5. (c) continued.

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Turn over

5. (c) continued.

(Total for Question 5 = 20 marks)

Turn over

**If you answer Question 6 put a
cross in this box**

☐

6. Investigating Hazardous Environments.

A group of students have investigated the physical processes involved in an extreme weather event, by recording a weather diary.

The students used an anemometer to record wind speed every hour.

(a) (i) Identify the type of sampling method used.

Select ONE answer from the options on the next page and write the letter in the box provided.

Turn over

6. (a) (i) continued.

A systematic

B random

C stratified

D opportunistic

Answer

(1 mark)

(continued on the next page)

Turn over

6. (a) continued.

(ii) State ONE disadvantage of using one of the sampling methods in the previous question, a(i)
(1 mark)

Sampling method

(continued on the next page)

Turn over

6. (a) continued.

Study Figure 6a in the Resource Book. It shows sample data about wind speed.

(iii) Calculate the mean wind speed for the five samples.

Give your answer to ONE decimal place.

You must show all your workings in the space on the next page.

(2 marks)

Turn over

6. (a) (iii) continued.

_____mph

(continued on the next page)

Turn over

6. (a) continued.

**(iv) Study Figure 6b in the
Diagram Book. Using the
data in Figure 6a (in the
Resource Book), complete
Figure 6b for measurements
1 and 4
(2 marks)**

**(v) State the number of the
sample with the anomalous
result.
(1 mark)**

(continued on the next page)

Turn over

6. (a) continued.

**(vi) Suggest ONE possible
explanation for this anomaly.
(2 marks)**

(continued on the next page)

Turn over

6. continued.

**(b) To extend the weather study,
students were asked to use
ONE other primary data method.**

**Explain ONE other primary data
method.**

(3 marks)

**Answer lines continue on the
next page.**

Turn over

6. (b) continued.

(continued on the next page)

Turn over

6. continued.

You have studied hazardous environments for your geographical enquiry.

**(c) Evaluate how successful your chosen data analysis methods were in answering your geographical enquiry question.
(8 marks)**

Answer lines continue on the next four pages.

Enquiry question

Turn over

6. (c) continued.

[illegible]

Turn over

6. (c) continued.

[illegible]

Turn over

6. (c) continued.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Turn over

6. (c) continued.

(Total for Question 6 = 20 marks)

TOTAL FOR SECTION B = 20 MARKS

TOTAL FOR PAPER = 70 MARKS

END OF PAPER
