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Surname	Other names
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**Pearson Edexcel**  
**Level 3 GCE**

Centre Number

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Candidate Number

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**Geography**  
**Advanced**  
**Paper 1**

Monday 4 June 2018 – Morning  
**Time: 2 hours 15 minutes**

Paper Reference  
**9GE0/01**

**You must have:**  
Resource Booklet (enclosed)  
Ruler, calculator

Total Marks

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### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions in Section **A** and Section **C**.
- Answer **either** Question 2 **or** Question 3 in Section **B**.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*
- Calculators may be used.
- Any **calculations** must show **all** stages of **working out** and a **clear answer**.

### Information

- The total mark for this paper is 105.
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*

### Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ►

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Pearson

## SECTION A: TECTONIC PROCESSES AND HAZARDS

**Answer ALL questions in this section. Write your answers in the spaces provided.**

**You must use the Resource Booklet provided.**

- 1** (a) Study Figure 1a in the Resource Booklet and Figure 1b below.

This data in Figure 1b was collected to investigate whether there was a significant difference in earthquake depth at the two plate boundaries shown in Figure 1a.

	Number of earthquakes recorded in 2016	Mean focal depth of earthquakes (in kilometres)
Plate boundary A	186	34.8
Plate boundary B	145	12.7

**Figure 1b**

### Frequency and focal depth of earthquakes in New Zealand, 2016

- (i) Calculate the average monthly frequency of earthquakes at the two plate boundaries.

You must show your working.

(2)

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- (ii) A Student's t-test was used to determine whether there was a statistical difference in the mean focal depth of the earthquakes at the two plate boundaries.

Two hypotheses were tested:

**Null Hypothesis:** There is **no** statistically significant difference between the mean focal depth of earthquakes at the two plate boundaries.

**Alternative Hypothesis:** There **is** a statistically significant difference between the mean focal depth of earthquakes at the two plate boundaries.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

Using the partially completed Student's t-test below, calculate the value of t.

(1)

$$t = \frac{22.1}{4.43}$$

t= .....

- (iii) Study Figure 1c below.

Confidence level	0.10 (90% significance)	0.05 (95% significance)	0.01 (99% significance)
Critical value of Student's t-test	1.6	2.0	2.6

**Figure 1c**

**Critical values for this Student's t-test**

Using the Student's t-test value calculated in (a) (ii), state whether there is a significant difference between the mean focal depth of the earthquakes.

(1)



(b) Assess the reasons why some communities are more vulnerable than others to tectonic hazards.

(12)

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(Total for Question 1 = 16 marks)

**TOTAL FOR SECTION A = 16 MARKS**





(b) Study Figure 2b in the Resource Booklet.

Explain the processes that affect the mass balance of temperate glaciers.

(6)

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(c) Explain the role of glacial meltwater in creating distinctive landforms.

(8)

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(d) Evaluate the view that tourism poses the greatest threat to both active and relict glaciated landscapes.

(20)

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(Total for Question 2 = 40 marks)



Do not answer Question 3 if you have answered Question 2.

Coastal Landscapes and Change

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

If you answer Question 3 put a cross in the box  .

You must use the Resource Booklet provided.

3 Study Figure 3a in the Resource Booklet.

(a) Explain how variations in the rate of coastal recession in North Norfolk may provide **evidence** for the different approaches to coastal management.

(6)

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(b) Study Figure 3b in the Resource Booklet.

Explain the physical processes that affect the rate of coastal recession.

(6)

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(c) Explain the role of sediment transport in creating distinctive landforms.

(8)

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(d) Evaluate the view that hard engineering approaches to coastal management produce more winners than losers.

(20)

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**(Total for Question 3 = 40 marks)**

**TOTAL FOR SECTION B = 40 MARKS**



**SECTION C: PHYSICAL SYSTEMS AND SUSTAINABILITY**

**Answer ALL questions in this section. Write your answers in the spaces provided.**

**You must use the Resource Booklet provided.**

4 (a) Study Figure 4a in the Resource Booklet.

Explain the relationship between precipitation and soil moisture.

(3)

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(b) Explain why land use changes can increase flood risk.

(6)

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(c) Explain why the price of water varies globally.

(8)

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(d) Study Figure 4b in the Resource Booklet.

Assess the role of oceans in regulating the carbon cycle.

(12)

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(e) Evaluate the view that mitigation strategies are more important than adaptation strategies in addressing the risks posed by the degradation of the carbon cycle.

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(Total for Question 4 = 49 marks)

**TOTAL FOR SECTION C = 49 MARKS**  
**TOTAL FOR PAPER = 105 MARKS**

