Surname	Centre Number	Candidate Number
First name(s)		2

GCE AS

B110U10-1

Z22-B110U10-1

TUESDAY, 17 MAY 2022 – AFTERNOON

GEOGRAPHY – AS component 1
CHANGING LANDSCAPES

2 hours 15 minutes

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
Either 1 and 2 or **3 and 4**	**18**	
	17	
5.	**40**	
6.	**35**	
7.	**10**	
Total	**120**	

B110U101
01

ADDITIONAL MATERIALS

A calculator.

INSTRUCTIONS TO CANDIDATES

In Section **A**, answer **either** questions 1 **and** 2 **or** questions 3 **and** 4.

Answer **all** questions in Section **B** (Tectonic Hazards) and **all** questions in Section **C** (Challenges in the 21st Century).

Use black ink or black ball-point pen. Do not use gel pen or correction fluid. You many use a pencil for graphs and diagrams only.

Write your name, centre number and candidate number in the spaces at the top of this page.

Write your answers in the spaces provided in this booklet.

If you run out of space, use the additional page(s) at the back of the booklet, taking care to number the question(s) correctly.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets [ ] at the end of each question or part-question; you are advised to divide your time accordingly.

This paper requires that you make as full use as possible of appropriate examples and reference to data to support your answer. Sketch maps and diagrams should be included where relevant.

A plain page is available at the end of each section for you to add any relevant sketch maps and diagrams you may wish to include. The question number(s) should be clearly shown.

Section A: Changing Landscapes

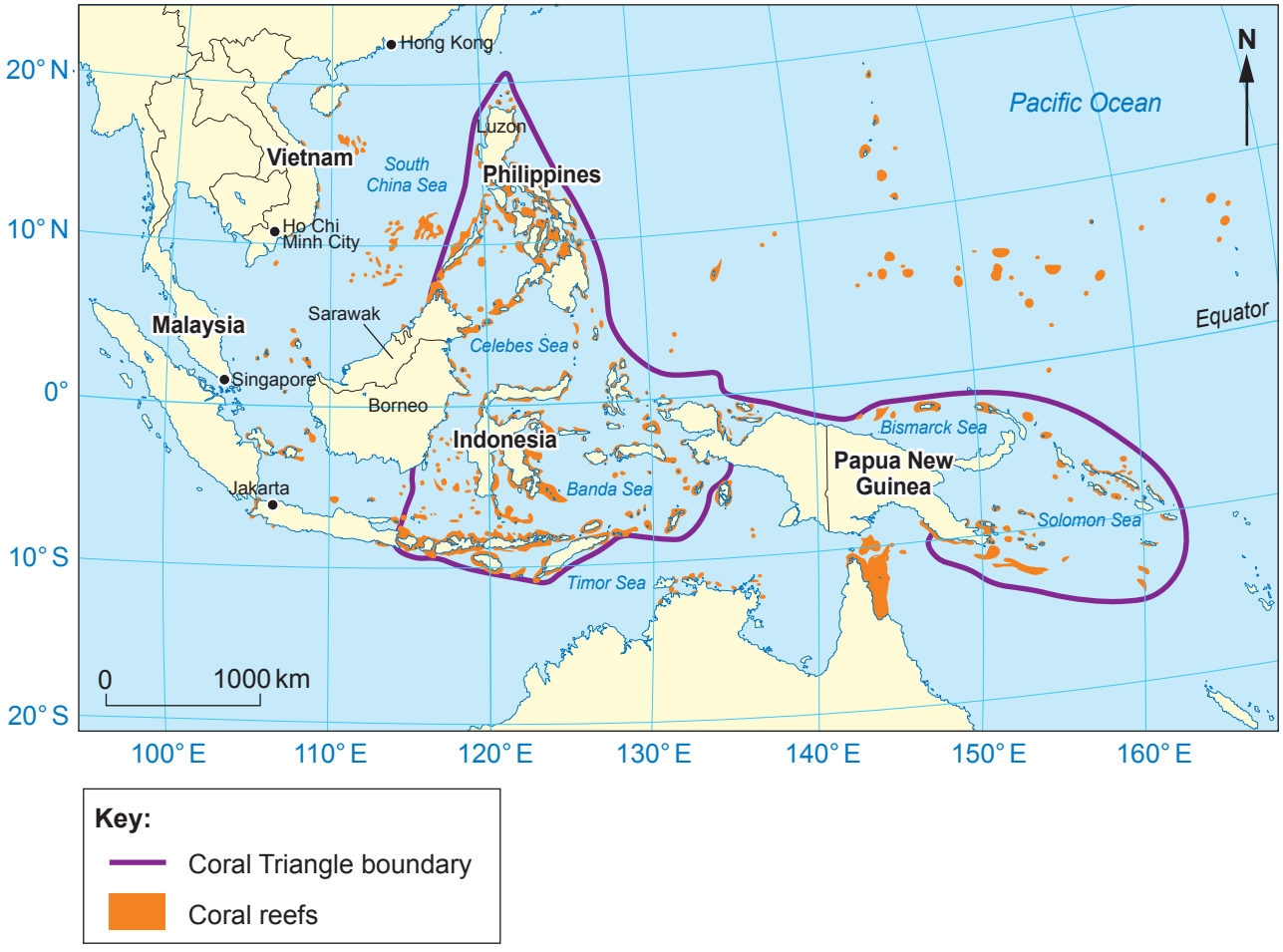
Answer **either** questions 1 **and** 2 **or** questions 3 **and** 4 from your chosen landscape.

Make the fullest possible use of examples and data to support your answers.

Either: Coastal Landscapes

Answer questions 1 **and** 2 if this is your chosen landscape.

Figure 1: The Coral Triangle



Source: www.ctatlas.reefbase.org

Examiner only

1. (a) Use **Figure 1** to describe the location of the Coral Triangle. [5]

(b) Outline **one** factor that contributes to the development of coral reefs. [3]

Turn over.

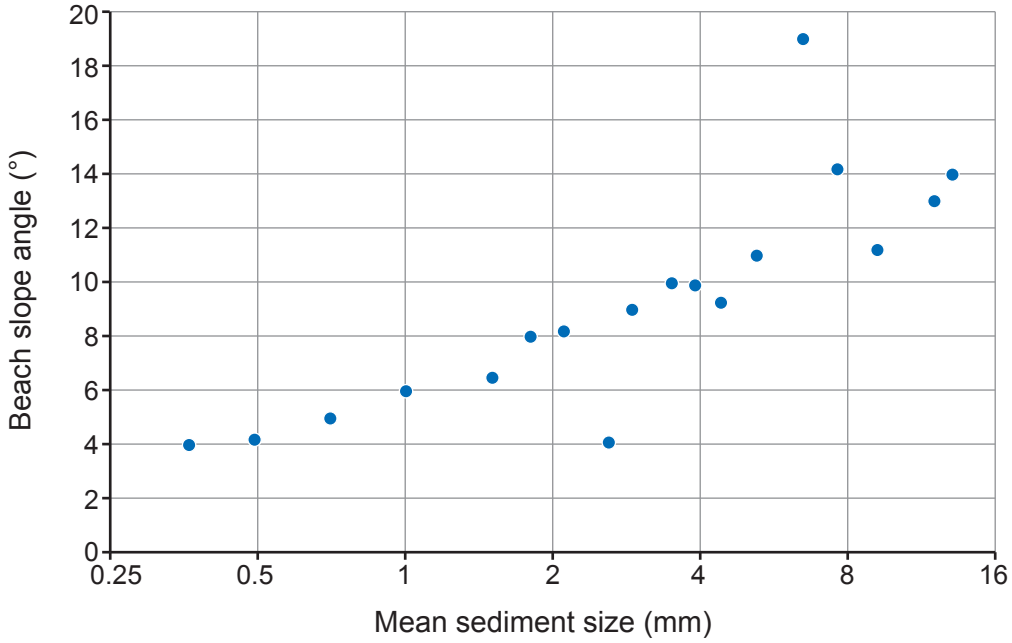
Examiner only

(c) Assess impacts of conservation on coastal landscapes and landforms. [10]

Additional space for Question **1**(c):

Examiner only

Figure 2: Relationship between mean sediment size and beach slope angle on selected beaches, South Island, New Zealand



Source: Adapted from New Zealand Journal of Geology

B110U101
05

2. (a) Use **Figure 2** to analyse the relationship between mean sediment size and beach slope angle. [5]

Examiner only

(b) 'The main influence on the distribution of erosional coastal landscape systems is the length of fetch.' Discuss. [12]

Examiner only

Additional space for Question **2**(b): .....

.....

.....

.....

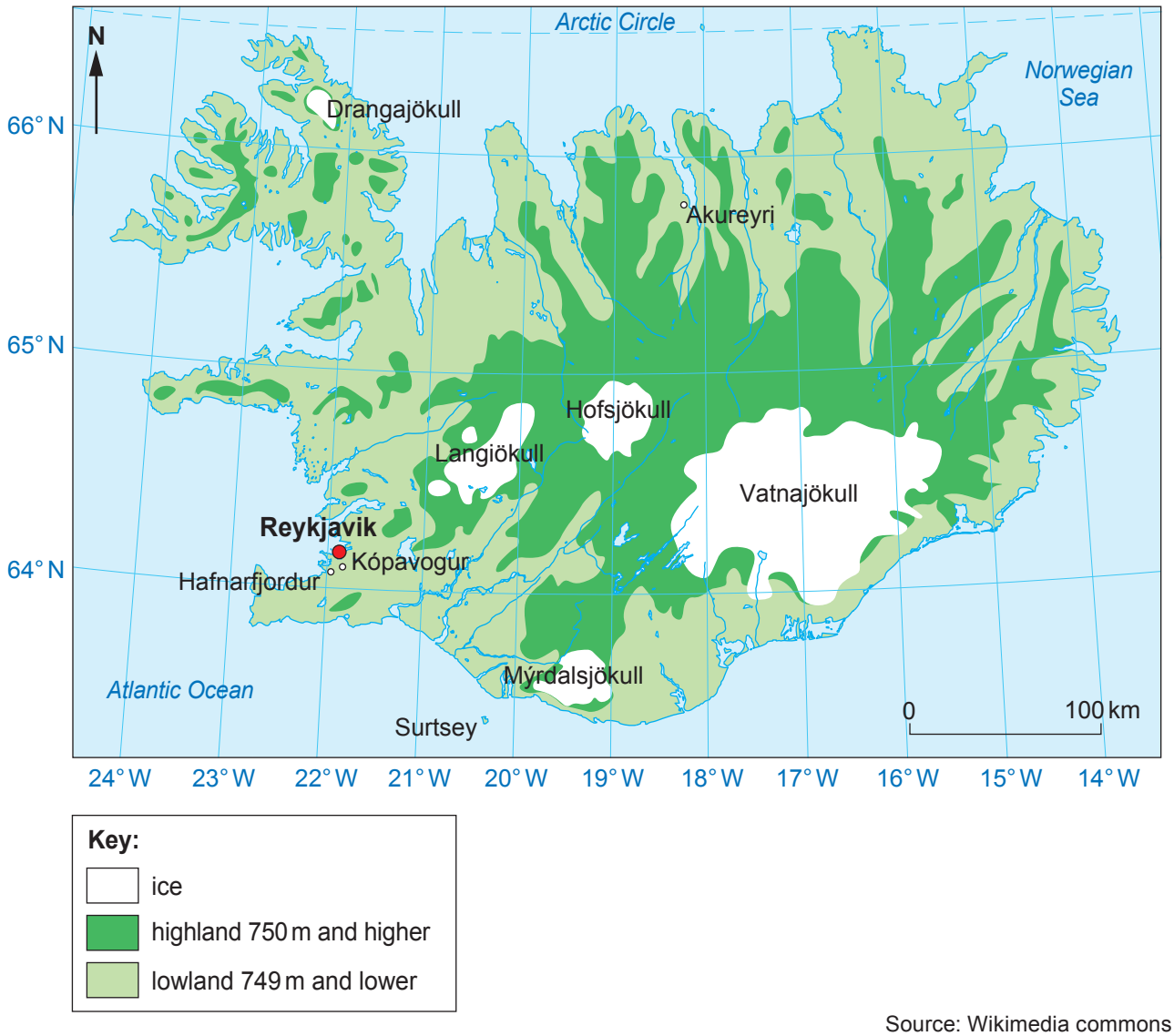
.....

Turn over.

Or: Glaciated Landscapes

Answer questions 3 **and** 4 if this is your chosen landscape.

Figure 3: Ice masses in Iceland



Source: Wikimedia commons

Examiner only

3. (a) Use **Figure 3** to describe the location of the Vatnajökull ice cap. [5]

(b) Outline **one** difference between warm-based and cold-based glaciers. [3]

Turn over.

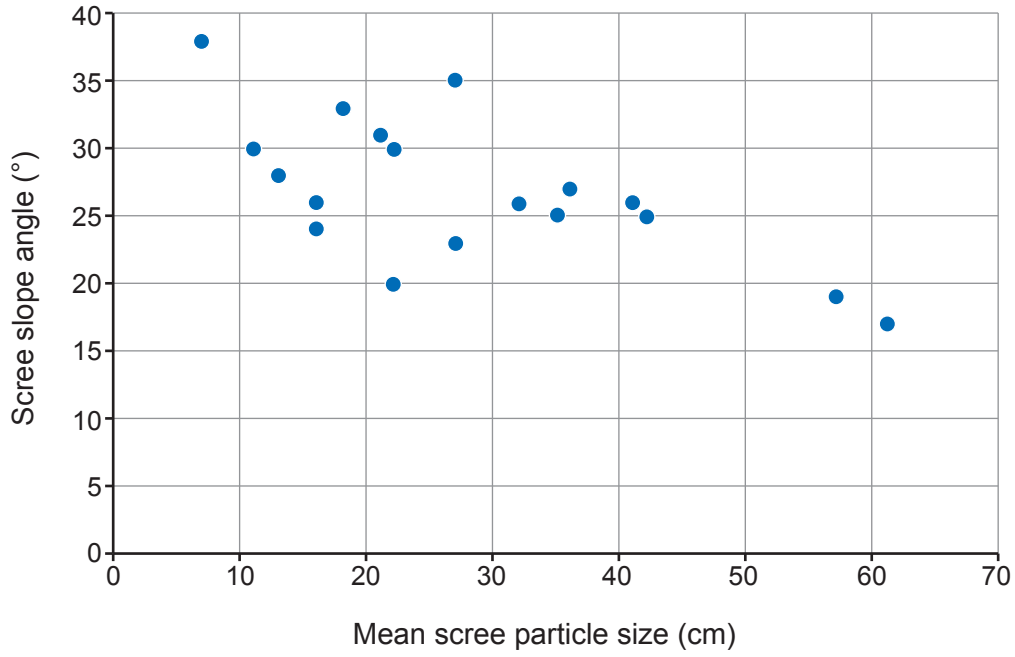
Examiner only

(c) Assess impacts of a decrease in snowfall on the glacier system. [10]

Additional space for Question **3**(c):

Examiner only

Figure 4: Relationship between mean scree particle size and scree slope angle on selected screes, Mewslade, Gower



4. (a) Use **Figure 4** to analyse the relationship between mean scree particle size and scree slope angle. [5]

B110U101
11

Examiner only

(b) 'The main influence on rates of glacial erosion is ice thickness.' Discuss. [12]

Examiner only

Additional space for Question **4**(b): .....

.....

.....

.....

.....

Turn over.

Examiner only

BLANK PAGE

PLEASE DO NOT WRITE ON THIS PAGE

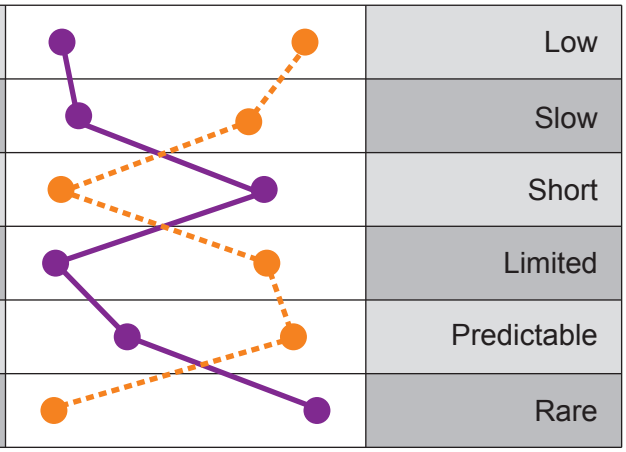
Examiner only

Section B: Tectonic Hazards

Answer **all** questions.

Make the fullest possible use of examples and data to support your answers.

Figure 5: Hazard profiles for the Kilauea eruption (2018) and the Asian tsunami (2004)

MAGNITUDE	High		Low
SPEED OF ONSET	Rapid		Slow
DURATION	Long		Short
AREA AFFECTED	Widespread		Limited
PREDICTABILITY	Unpredictable		Predictable
FREQUENCY	Frequent		Rare

Key:

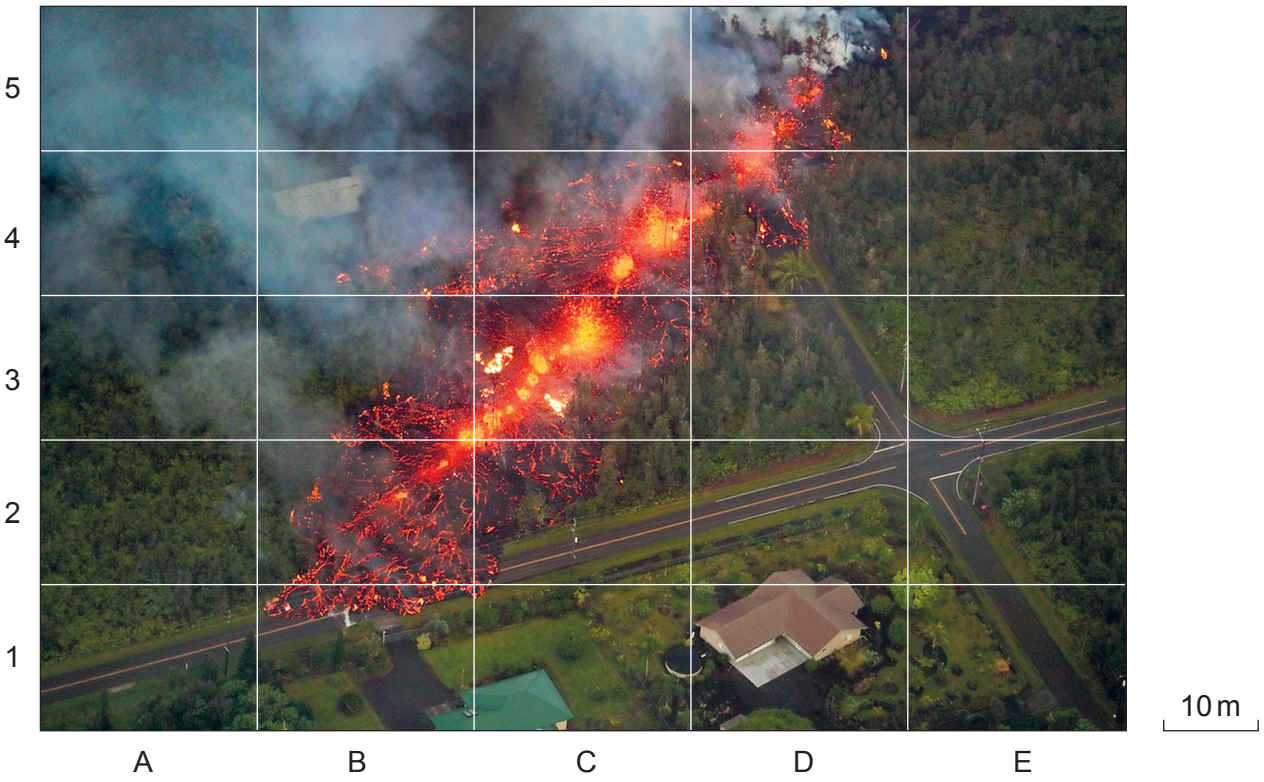
Kilauea eruption

Asian tsunami

5. (a) Use **Figure 5** to compare the **two** hazard profiles. [5]

Examiner only

Figure 6: Effusive eruption, Pahoa, Hawaii, May 2018



(b) Use **Figure 6** to describe the likely impacts of this eruption on people and the built environment. [4]

.....

.....

.....

.....

.....

.....

.....

.....

Examiner only

Figure 7: Total number of earthquakes of magnitude 3+ (Mw) in selected US states, 2010–2015

	Year					
US state	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Hawaii	17	3	40	30	26	53
California	546	195	243	240	191	130

Source: USGS

(c) Use **Figure 7** to:

(i) Calculate the median value for the number of earthquakes per year in California from 2010 to 2015. [2]

.....

.....

.....

(ii) Calculate the mean number of earthquakes per year in California from 2010 to 2015. [2]

.....

.....

.....

(iii) Outline **one** disadvantage of using the mean value when studying the frequency of earthquakes in California from 2010–2015. [3]

.....

.....

.....

.....

.....

.....

Examiner only

Figure 8: Number of earthquakes worldwide by magnitude, 2016–2018

Magnitude (Richter scale)	Year 2016	2017	2018
>8.0	0	1	1
7.0–7.9	16	3	16
6.0–6.9	130	104	117
5.0–5.9	1 550	1 455	1 674
Total	1 696	1 563	1 808

Earthquakes below magnitude 5 are too numerous to quantify accurately.

Source: Statista.com

(iv) Use only **Figure 8** to analyse the relationship between earthquake magnitude and frequency. [4]

.....

.....

.....

.....

.....

.....

.....

.....

Examiner only

(d) Explain how tectonic plates are thought to move. [6]

(e) Evaluate the importance of prediction and mitigation in reducing risks associated with volcanic activity. [14]

Examiner only

Additional space for Question **5**(e):

Examiner only

6. (a) Assess how risks from volcanic activity vary from one place to another. [15]

Examiner only

.....

.....

.....

.....

Additional space for Question **6**(a): .....

.....

.....

.....

.....

Examiner only

(b) Evaluate the effectiveness of short-term and long-term responses to seismic events in countries at different levels of development. [20]

Examiner only

Additional space for Question **6**(b):

Examiner only

BLANK PAGE

PLEASE DO NOT WRITE ON THIS PAGE

TURN OVER FOR QUESTION 7

Section C: Challenges in the 21st Century

Answer **all** questions.

Make the fullest possible use of examples and data to support your answers.

7. 'Human innovation and investment in places minimise negative impacts of change.' Discuss. [10]

In your answer to question 7, you may make use of the material in **Figures 9a**, **9b** and **9c** and apply your own knowledge and understanding.

Figure 9a: Coastal protection, Hornsea, Yorkshire

Figure 9b: Dams provide water supply and power

Figure 9c: Cardiff Bay (i) derelict docks and (ii) after redevelopment

(i)

(ii)

Examiner only

Additional space for Question **7**:

END OF PAPER

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

Examiner only

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

Examiner only

BLANK PAGE

PLEASE DO NOT WRITE ON THIS PAGE