Surname	Centre Number	Candidate Number
Other Names		2

GCE A Level – LEGACY

1215/01

S19-1215-01

GEOLOGY – GL5
Thematic Unit 1
Quaternary Geology

THURSDAY, 6 JUNE 2019 – MORNING

ONE of TWO units to be completed in 2 hours

	For Examiner's use only		
	Question	**Maximum Mark**	**Mark Awarded**
Section A	**1.**	**15**	
Section B	**2.**	**25**	
	3.		
	4.		
	Total	**40**	

1215 010001

ADDITIONAL MATERIALS

In addition to this and one other examination paper, you will need a calculator.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.
Write your name, centre number and candidate number in the spaces at the top of this page.
Answer **question 1** in Section A (15 marks) and **one** question from Section B (25 marks).

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question.
You are reminded of the necessity for good English and orderly presentation in your answers.

SECTION A

1. **Figure 1a** shows the location of two drowned valleys and an interpretation of the limit of the last glaciation. **Figure 1b** is a map view and cross-section of Loch Morar. **Figure 1c** is a map view and cross-section of Milford Haven.

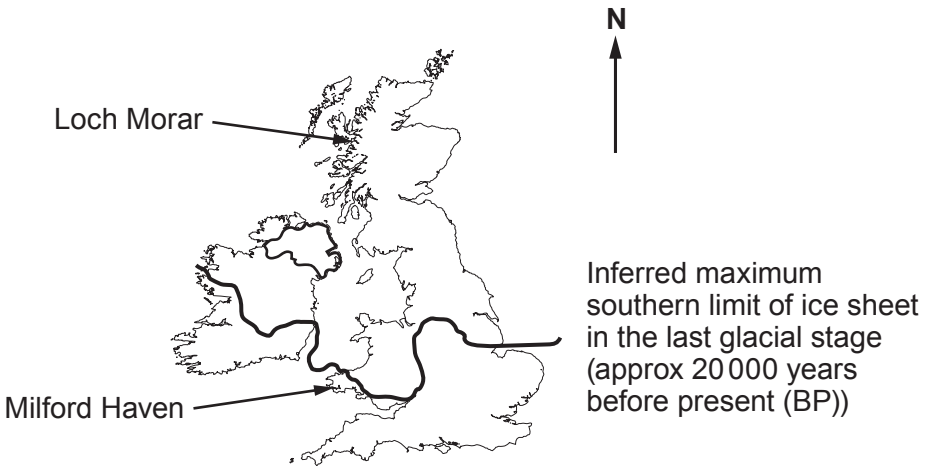

Figure 1a

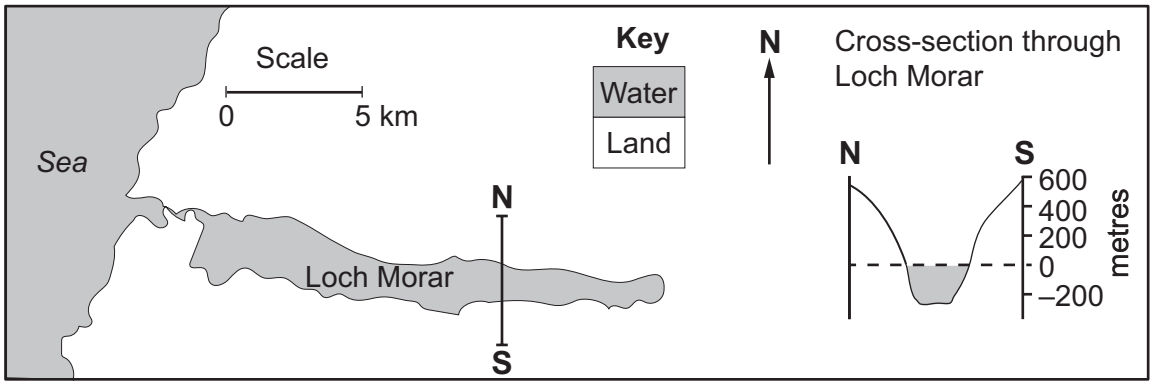

Figure 1b

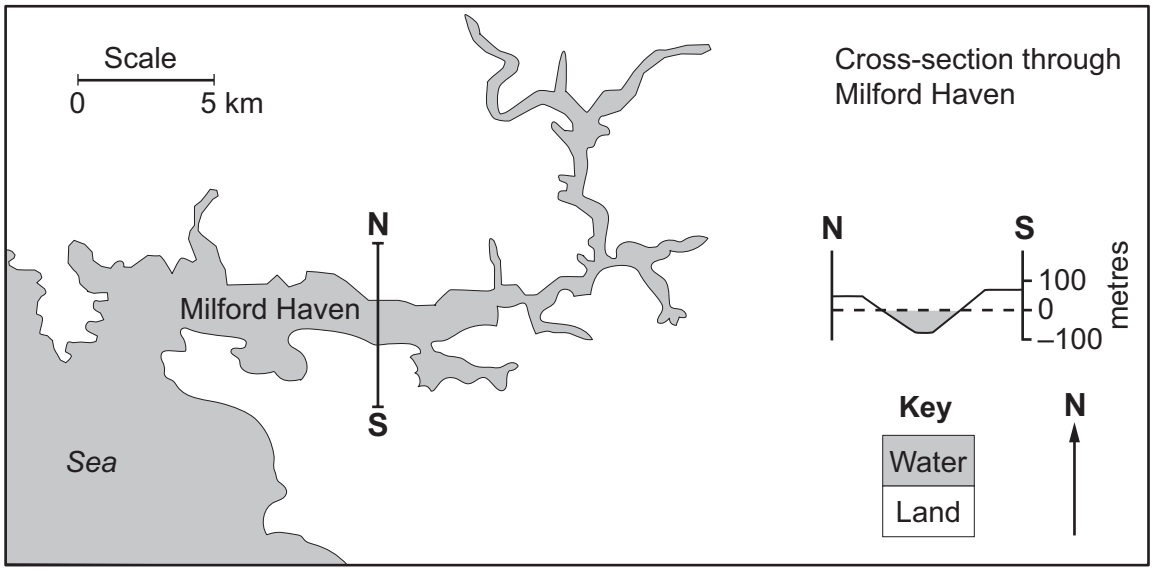

Figure 1c

Examiner only

(a) Refer to **Figures 1a**, **1b** and **1c**.

(i) Describe **two** ways in which the drowned valleys of Loch Morar and Milford Haven differ. [2]

.....

.....

.....

(ii) Give reasons for the differences you have identified in *(a)*(i). [2]

.....

.....

.....

(b) Describe how worldwide sea level could change in response to variations in the volume of ice sheets. [2]

.....

.....

.....

1215 010003

Turn over.

Examiner only

(c) **Figure 1d** shows the change in relative sea level since early in the current interglacial stage at Loch Morar and Milford Haven.

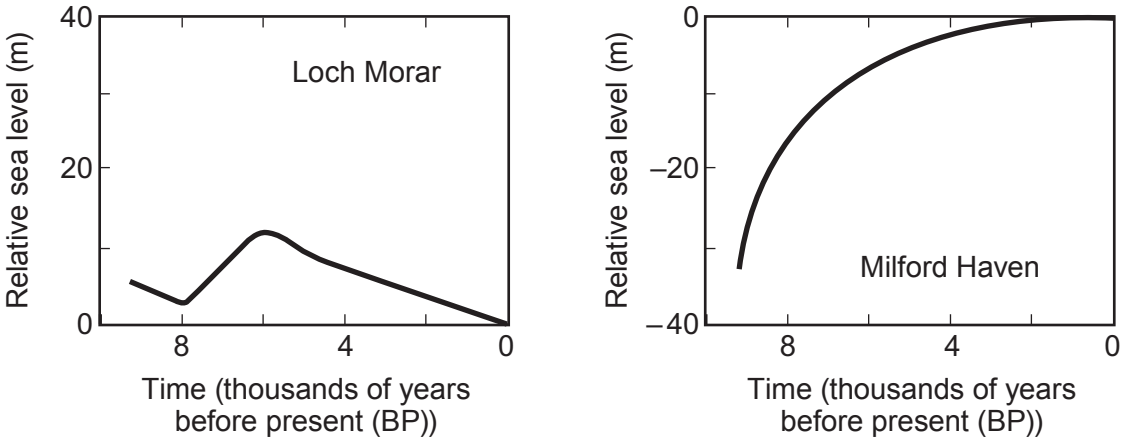

Figure 1d

Refer to **Figures 1a** and **1d**.

(i) Calculate the rate of sea level rise at Loch Morar between 8000 and 6000 years BP. Show your working. [2]

..... $m\,yr^{-1}$

(ii) The rate of sea level rise at Milford Haven between 8000 and 6000 years BP was greater than at Loch Morar. Explain why there is a difference between the rates of sea level rise in the two locations over the same time period. [2]

.....

.....

.....

(d) (i) Describe the changes in relative sea level at Loch Morar and Milford Haven between 6000 years BP and the present. [2]

.....

.....

.....

(ii) Explain the difference in relative sea level change between 6000 years BP and the present at Loch Morar and Milford Haven. [3]

.....

.....

.....

.....

SECTION B

Answer **one** *question only.*

Write your answer in the remaining pages of this booklet.

2. Evaluate the extent to which geological structure and lithology control:

(a) patterns of surface water drainage

(b) patterns of groundwater drainage. [25]

3. *(a)* Describe the deposits of a modern carbonate environment.

(b) Evaluate the extent to which the following are linked to the processes in a modern carbonate environment:

- **lithologies**
- **sedimentary structures**
- **organic forms** [25]

4. *(a)* Describe how ice cores can provide evidence for atmospheric change in the Quaternary.

(b) Evaluate the use of fossils from the Quaternary to provide evidence for climatic fluctuations in Britain. [25]

Examiner only

Examiner only

Examiner only

Examiner only

Examiner only

END OF PAPER

BLANK PAGE